A CRITICAL EVALUATION OF THE NATURE OF MUSIC EDUCATION IN THE PUBLIC SCHOOLS OF BRITISH COLUMBIA

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A CRITICAL EVALUATION OF THE NATURE OF MUSIC EDUCATION IN THE PUBLIC SCHOOLS OF BRITISH COLUMBIA

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Abstract

It is argued, music education in the public schools of British Columbia fails to fulfil one of the main objectives of education; development of the human intellect. Instead, public school music chooses to concentrate the majority of its energies on traditional skill-training. This focus is maintained largely due to utilitarian beliefs: such as music is a tool of moral training. As a result, music in schools has become "classroom" music, remote from real music and remote from much of the music produced in the twentieth century.

Among other things, the emphasis on skill-training results in the production of classroom music which is considered irrelevant by most students. Irrelevant because it is remote from their daily lives and because most do not have the skills required to produce this music. Musical skills are used also as a prerequisite to the music class and this means only those pupils with the necessary skills become involved. As there are few in the public school with these skills, classroom music tends to be isolated from most students, teachers and the other subjects of the curriculum. Once isolated in the curriculum, music can come under intense scrutiny, especially for failing to meet one of the fundamental objectives of public education; development of the intellect.

While the acquisition of skills is one aspect of public education, it is not the focus nor should it be. The focus

of public education is development of student intellect and in order for music to be consistent with the majority of subjects in the curriculum, it should have intellectual development as its main goal. In other words, in order for music to be considered a necessary and fundamental aspect of the public school, it must align itself more with intellectual pursuits.

It is argued that public school music should move away from a focus on traditional (i.e. historical) skills and move towards developing a conceptual understanding of music using twentieth-century musical techniques. Such an approach, which is neither skill nor method based, will enable all students and teachers, regardless of their musical background, to have an opportunity to take part in intellectual activities aimed at creating and understanding music. Allowing all students an opportunity to develop a knowledge and understanding of music will therefore achieve one of the fundamental objectives of education, which is, development of the human intellect.

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Preface

This paper is concerned with the cause and effect of skill-training music students in the public schools of British Columbia. The author argues that skill-training should not be the focus of public school music because it leads to teacher and student dissatisfaction and does little, if anything, to develop student intellect. As well, it does not provide students with a knowledge and understanding of music.

The author argues that if music is to be considered a necessary aspect of a public education it should align itself with intellectual pursuits. One way to do this is by providing students with a knowledge and understanding of music. The author contends that this is something which can be achieved using twentieth-century musical techniques. These techniques and beliefs can be used to develop knowledge and understanding because they are conceptual by nature. They are not based on skill acquisition but rather on conceptual understanding and as a result all students will have an opportunity to know and understand music.

Chapter one travels from the general to the specific. Moving from an overview of the concept of education to education in the public schools of British Columbia; from music and musical beliefs in general, to music and musical beliefs in the public schools of the province of B.C. The historical anticedents are repeated so as to give a complete picture of the background of various influences which have

helped shape music and musical beliefs in the public schools of British Columbia.

It is clear that development of the intellect is one of the main stated goals of public education in Canada. A general overview of the public school organization and curriculum is presented in order to demonstrate this emphasis. The author argues that public school music in British Columbia does not meet the goal of development of the intellect but is concerned chiefly with skill-training. This focus is supported largely through certain concepts and beliefs; these include utilitarianism and belief in the affective nature of music. Of these, both Christian and secular influences are investigated.

Chapter two is concerned with skill-training and public school music in British Columbia. The author examines the content and methods of musical skill-training including both tonic sol-fa and standard notation and argues that these methods have drawbacks and not relevant to the stated aims of a public education in educational music. The author examines the tools of musical skill-training including discipline, memorization, rote-learning and repetition and concludes that these result in student and teacher dissatisfaction as well as contributing to the development of mechanical music-making. In addition, the scientific model for music education is traced in order to show that this too is based on skill-training. The technical prerequisite for music in the public school is also

discussed as one of the causes of music's isolation and low enrollment.

The author argues that music in the public school has a history of being somewhat reticent to change and as a result, most of twentieth-century music and beliefs are not included in public school classrooms. Instead, traditional music tends to be supported for reasons such as respite and entertainment. The author argues that there are those who believe that the role of the public school is to train performers of traditional music even though this is not a stated aim of such education.

Skill-training in public school music is supported largely due to the belief that it can transmit beliefs and values. These include, affectation of character and individual development leading to self-discipline and self-control. The author argues, qualities such as these should not be attributed solely to skill-training in music but rather an education which stresses knowledge and understanding. As well, the author examines the goal of developing aesthetic awareness, appreciation and understanding and concludes that if this goal is to be accomplished in the public school, educators must learn about musical aesthetics. Yet, this is not the case as the focus of much of teacher education is in skill-training.

Chapter three provides an examination of some of the musical techniques and beliefs employed by twentieth-century composers in order to provide a context for their use in

education. Composers such as Arnold Schoenberg, Anton Webern, Igor Stravinsky, Bela Bartok, Edgard Varese, Olivier Messiaen, Pierre Boulez, Luciano Berio, Gyorgi Ligeti and John Cage are examined to trace their movement away from traditional notions of harmony and melody and towards new ways of creating music. This is done so as to give credence to the notion that music education in the public school no longer need be concerned only with skill-training but rather can become conceptually based.

Chapter four incorporates twentieth-century musical techniques into the pubic school classroom. Discussions center on the development of a curriculum based upon twentieth-century composition which gives all students an opportunity to experiment with musical techniques. Types of notation examined include both standard as well as graphic but it is graphic notation which is the most versatile in terms of the public school as mastery is not required for its usage. Other concepts explored include representation and nonrepresentation, as well as determinacy and indeterminacy in composition and performance.

The author then offers suggestions on how students can explore sound in the public school: this includes composing, performing and experimenting with orthodox as well as unorthodox sounds, instruments and other sound producing devices. The elements of music, sound and other related terms are also provided in order that they be discussed and experimented with in the public school. Chapter four

concludes with a suggested listening list and two model lesson plans for grades K to 2 and 6 to 7.

Introduction

I have been a professional musician for a number of years, working as a composer, guitar player and pianist, singer and teacher. In terms of profession, I am what is known as a "freelance musician" which means that I can be called upon to perform in various musical ensembles sometimes with or without rehearsal. As well, I can be found playing my own music in my own groups. I have performed, composed and recorded in many musical genres including jazz, classical, country, liturgical music, rock 'n' roll and experimental new music. Over the years I have played music in many diverse venues from lounges and restaurants to the concert hall and recording studio.

It should come as no surprise that many of my friends and associates are also musicians and music teachers. They, upon hearing that I was writing a Master's thesis concerning the state of music education in the public schools of British Columbia, were curious as to the content of the paper and openly offered opinions, insights and criticisms. Frequently, we would engage in long debates about the problems which we felt plagued music education. It is from these and other similar discussions that the concept of this paper grew.

On many occasions my colleagues and I agreed that, although we were now professional musicians, most of us had opted out of taking music in the public school. Instead we

chose to receive our training in the various garages and basements around the neighbourhood. It was not that we had perceived classroom music to be too easy but rather that it did not seem beneficial or relevant. Many of us also admitted that we were simply not good enough sight-readers to become involved in classroom music while others shied away because the music itself seemed unappealing. The one thing we all agreed upon was that it would have been torture to sit in a classroom with thirty recorder or ukulele playing students attempting to read our way through, what we considered corny and old-fashioned music. The sound of this was unbearable so we chose instead to practice the kind of music which we enjoyed on our own after school.

As I felt I needed more personal anecdotes and opinions from students who were more recent to, or currently involved in, public school music, I asked some of my own music students for their views. These students vary in age, most are considerably younger than myself and my colleagues, yet many express views similar to that of our own. That is, a dissatisfaction with music education in the public school. For example, they use words like "boring" to depict the music class and the way music is taught is described as "dull."

Since at least the 1950s there has been a steady decline in enrollment in public school music in British Columbia. Enrollment statistics available from the British

Columbia Ministry of Education (1984) certainly suggest this. For example, in 1956, 27.1 percent of all British Columbia secondary school students, grades eight through twelve, had enrolled in classroom music but by 1982 this figure had dropped to 14.43 percent. (p.29). Unfortunately no statistics were available from the Ministry regarding the elementary grades one through seven. Declining enrollment is a serious problem facing music as enrollment can dictate the cancellation or continuation of programs. It is argued, enrollment will continue to decline so long as students see little or no relevance in studying classroom music.

Witkin (1974) argues:

> Of all the arts...in schools, music is apparently in the greatest difficulties...it repeatedly fails to obtain a general hold on the musical development of the majority of pupils and is considered by many pupils to be irrelevant to anything that really concerns them. (p.118)

While Witkin is referring to public school music in the United Kingdom, this appears also to be the case in British Columbia. The irrelevance that Witkin eludes to is based upon the notion that few pupils become involved in classroom music as most pupils have not developed the necessary skills to do so. In other words, there are not many students who are able to read music or play a musical instrument, consequently, classroom music is available only to those students who have developed musical skills as a prerequisite.

If music fails to contribute to the development of the

majority of pupils in the public school then this is a serious problem for education in general. Music is not adhering to the aims and goals of education as specified by the British Columbia Ministry of Education and it is depriving students of an opportunity tc know and understand music. This in turn could mean the justification for music in the curriculum may be called into question.

The aim of Canadian public schools has long been affordable, available and in most cases mandatory, education for the entire population. By-and-large, this education is available to students regardless of whether or not they have developed isolated or narrow specific skills as a prerequisite on entrance to any one subject. It is not a prerequisite that a student know how to paint in order to study visual art but this appears to be the case in music as the child will not be able to participate if he or she cannot read music. Canadian studies by Harris (1991) show that music promotes a technical skill prerequisite and as such has made itself available only to a small number of students. As there are few with this prerequisite, music contributes only to the nurturing of what Harris (1991) calls, "...an artistically elite student population." (p.26) Music will certainly have a hard time justifying its position in the curriculum in future if it can only contribute to a small percentage of the overall student population.

The exclusivity of public school music is clearly as a result of programs which stress only the development of skills and this stress on skills presents problems. For example, in stressing a technical requisite, public school music isolates itself from the other subjects of the curriculum. The goal of education for the other subjects of the curriculum is primarily intellectual but music is not being taught in a way which is commensurate with this goal. This means that music, put under scrutiny in terms of its educational value, might well draw the question: is music education necessary? To add to this, music is not a main focus in the curriculum which means it is one of the first subjects to be cut during an economic downturn. Therefore, if classroom music is to be considered a necessary aspect of public education it must find some logical way to justify its position in the curriculum of the public school. The solution, lies in stressing intellectual development. Essentially, this means emphasizing the development of knowledge and understanding and decreasing the emphasis on the acquisition of skills.

One of the ways intellectual pursuits can be accomplished in the music class is by having students develop a conceptual understanding of music. Such an understanding can be found in the varied practices of twentieth-century composition. Using devices such as graphic notation, students can be given an opportunity to create

their own notation, as well as musical composition. Compositions can be performed and followed by discussions relating to such musical concepts as form, structure, style and the intent of the composer. Practices such as these are neither skill nor method based which means they offer all students and teachers, regardless of their musical background, an opportunity to create and understand music. Therefore, musical skills are not needed in order for all to develop a conceptual understanding of music.

Through the development of a knowledge and understanding of music, it is argued, students will grow intellectually and in doing, music will be able to claim alignment with one of the fundamental objectives of education; the development of human intellect. Allowing all students, regardless of their musical competence, to learn about and create music will also help them learn of the concepts and issues which have faced and continue to face society. By allowing all students an opportunity to develop a knowledge and understanding of music it is hoped music will no longer be accessible to only a few. In focusing on intellectual pursuits, it is hoped music will always be considered necessary to a public education.

Chapter One

Music and the Public School with Special Reference to Canada and B.C.

Music and Education in Greek Antiquity

Education in the public schools of British Columbia is based on development of the human mind facilitated through the pursuit of knowledge. One finds that this concept of education is similar to that of a classical Greek liberal education, where development of the intellect was also a focus. Hirst (1974) argues that a liberal education concerned with the pursuit of knowledge is justified. He said:

> A liberal education defined in terms of knowledge alone is acceptable as long as knowledge is thought to be necessarily developing the mind in desirable ways...(p.33)

The "desirable ways" to which Hirst alludes have best been described by R. S. Peters (1966) who argues, education is justified if it is concerned with

> the achievement of a desirable state of mind characterized by knowledge and understanding in depth and breadth with cognitive perspective and by corresponding appropriate emotions and attitudes. (quoted in Hamm, 1989, p.36)

The concept of music as educationally justifiable can be traced back to the ancient Greeks. Plato, in his *Republic*, wrote "...'education in music is most sovereign'..."(quoted in Strunk, 1950, p.8). Historians such as Broudy (1990) note that in ancient Greece music was regarded "...much as we think of the three r's."(p.28) and

Eby and Arrowood (1940) found that Aristotle included music "...among the standard subjects of the curriculum..." (quoted in Broudy, 1990. p.29). In order to understand why the ancient Greeks placed so much importance on the role of music in education it is necessary to understand the ideals to which they aspired. Essentially, the ancient Greeks ascribed to the ideal of perfection and balance. To them, human perfection existed in the establishment of a perfect balance between a sound body and a sound mind. They believed that this was a balance which could be expressed as number relationships.

The notion of expressing things as number relationships or proportions can be traced back to Pythagoras (ca. 570-500 B.C.). Pythagoras and his followers, the Pythagoreans

> were responsible for providing a well-developed theoretical framework for the marvels of number relationships, arguing that the essence of all things derives from these relationships, including the planets and such basic matter as air, fire, water, earth. (Walker, 1990, p.62)

Essentially, the Pythagoreans believed

> that the physical and intellectual harmony affecting humans, the world, and the cosmos-the mysterious force that binds them all together, keeps things in their place and working at their most efficient state-is expressible in number. (Walker, 1990, p.62)

Pythagoras postulated that all things in the universe were held in equilibrium because of a perfect balance between elements and that this could be expressed through such proportional number ratios as 2:1. As well, he believed

that the numbers: 1, 2, 3 and 4 were closest to the essence of all matter and that all matter was derived from these numbers. Therefore, these numbers were held to be perfect and ratios or proportions which were based upon them, such as 3:2, were also believed to be perfect.

It was music which the ancient Greeks believed best expressed "...the physical manifestation of the perfectness of ideal numerical relationships, or proportions." (Walker, 1990, p.65). Thus, the musical intervals: 1:1, 4:3, 3:2 and 2:1 (unison, fourth, fifth, and octave) were held to be perfect intervals because it was believed they expressed perfect relationships.

Great importance was placed on music in education by the ancient Greeks because they thought it held the power to "...evoke, represent, or imitate behaviors, emotions or events..." (Walker, 1990, p.105). Strunk (1950) notes, for Plato:

> education is paramount and art derives its main value as a means of attaining this educational ideal. In this connection, Plato regards music as highly important; its lofty purpose to serve, not for superficial entertainment, but to help in building up a harmonious personality and in calming the human passions. (p.3)

As the ancient Greeks held music to have the greatest power over human behaviour, it was believed music could contribute to the ideal person.

The ancient Greeks believed that music could contribute to the formation of the ideal person by promoting moral

development. This notion was based on the premise that those who heard a balanced and harmonious music would become balanced and harmonious in character. In order to produce perfect and balanced human beings (beings in harmony) the ancient Greeks believed they had to produce a perfect music. Therefore, music based on intervals deemed perfect were believed to contribute to the development of a perfect and balanced character. As the musical intervals: 1:1, 4:3, 3:2 and 2:1 (unison, fourth, fifth and octave) were held to be perfect musical intervals, it was believed these would influence the character in such a way as to promote harmony and balance.

The Aims of Public Education: Development of the Human Intellect

The 1989 *Year 2000* document for public education in British Columbia notes, public education is "...'a form of schooling that will provide (young people) with a sound, broad, and basic liberal education'..."(p.15). One finds that there are similarities between this and the concept of a classical Greek liberal education. For example, Ulich (1950) notes that a classical Greek liberal education emphasized "the necessity of sound interaction between body and mind."(quoted in Thielmann, 1950/1974, p.7). A look at statements of goals and aims from the Ministry of Education shows that this is similar to that of public education in British Columbia. For example, the 1960 *Chant Report on Education* states, one of the aims of public education is "To

help all pupils develop healthy minds and bodies."(quoted in Wright, 1924/1975, p.9).

Development of a healthy body in a liberal education has customarily been promoted through such subjects as health and physical education. This has also been the case in the public schools of British Columbia although emphasis is reserved for development of the mind. Evidence for this claim can be found by examining the 1989 *Year 2000* document where health and physical education make up only but a small percentage of the overall curriculum. A small portion of the curriculum is also reserved for the vocational subjects which leaves the majority of the curriculum to the academic subjects. While it is the academic subjects which explicitly promote development of the intellect, it is expected the other subjects will also contribute as this is one of the main goals of public education.

Development of the mind has customarily been promoted through intellectual tasks. According to Merwin (1986), Canadian public schools have "...always promoted intellectual tasks, the basis of a classical education."(p.1). Merwin (1986) adds, "...the main emphasis continues to be on intellectual tasks."(p.1). A look at educational statements of aims from the Ministry of Education show that subjects which stress intellectual tasks are indeed the main emphasis of public education in British Columbia.

The 1924 *Putnam and Weir* report states that an aim of

public education in British Columbia is "To develop a united and intelligent Canadian citizenship..."(quoted in Wright, 1924/1975, p.8). The 1985 discussion paper entitled *Let's Talk About Schools* lists "intellectual development" as one of the goals of public education. (Booklet 5, p.9). The 1988 report by the Royal Commission on Education notes, "The school's first educational purpose is to cultivate the mind."(p.22). Today, development of the human intellect continues to be the emphasis in British Columbia as the 1989 *Year 2000* document for public education lists "Intellectual Development" as one of the "Prime Goals of Public Schools."(1989, p.4).

In regards to intellectual development in the public school, the goal of the Ministry is

> to develop the ability of students to analyse critically, reason, and think independently, and acquire basic learning skills and bodies of knowledge; to develop in students a lifelong appreciation of learning, a curiosity about the world around them and a capacity for creative thought and expression.(*Year 2000: A Framework For Learning*, 1989, p.4)

The Canadian Public School: Organization and Curriculum

Up until about 1840 in Canada and prior to the establishment of the public school, most schools for the people were established and operated by missionaries of the Roman Catholic Church, Anglican Church of England and later by the Protestant Churches (Presbyterian and Methodist). These early schools were sometimes referred to as elementary and secondary schools although, as Phillips (1957) notes:

> It is difficult to classify schools as elementary or secondary...because the church's disapproval of co-education made sex, more often than educational level, the basis of division between schools. (p.16)

In the early days of education, religious denominations, such as the Roman Catholic Church or Church of England, operated almost all elementary schools. These schools were classified as "elementary" because they offered the introductory beginnings or first principles of education. Some elementary schools offered spelling and occasionally Latin while most taught the three Rs as well as bible study but elementary schools were established basically to civilize and promote Christianity. There is evidence of such a school in Quebec in 1635 run by the Jesuits. (Phillips, 1957, p.16).

Early schools for children of the upper classes included: Latin, language, grammar, private, boarding, home schools, male and female academies and secondary schools. In terms of secondary education, Phillips (1957) noted, early secondary education was "A distinctive type of education for the few and not an extension of elementary education for the children of the people..."(p.20). Although secondary schools eventually developed from elementary schools and private academies, early secondary schools were operated by religious groups or by philanthropic organizations. Usually it was the "...upper class (who) were sent to secondary schools for a classical education..."

(Phillips, 1957, p.20) meaning, the academic subjects. There is evidence of such a secondary school in Quebec in 1655 that was operated by the Jesuits. (Phillips, 1957, p.16).

By the late 1700s, community schools began to spring up across Canada. Most of these schools offered an elementary education but occasionally subjects from a secondary education were also included. Funding for these community schools came mainly from subscriptions, government grants and fees but not from local taxation. Community schools of this type were also religiously based and ungraded but eventually allowed coeducation.

Among the ungraded schools of this period was the common school. According to Phillips (1957), "...the usual school for children of the people...was the common school-built by the parents and taught by a teacher they engaged." (p.111). Schools such as these were religiously oriented and generally offered an elementary education lasting anywhere from one to five years in length. Other ungraded schools which provided an elementary education were the national and district schools. These schools taught children over a one to five year period and their curriculum was essentially the same as common elementary schools in that they offered the "...elementary subjects and sometimes Latin and mathematics..." (Phillips, 1957, p.180). In short, most Canadian elementary schools from 1825 onwards taught "...reading, writing, arithmetic, grammar and geography."

(Phillips, 1957, p.433).

Ungraded schools eventually gave way to graded schools in Canada. This was done largely as a means of organizing and keeping record of a growing school population. There is evidence of such a graded elementary school in Prince Edward Island which, in 1846, taught reading, spelling, writing, arithmetic, geography and grammar to grades one through five at the primary level. (Phillips, 1957). As well, graded elementary schools eventually developed from common, grammar and monitorial schools.

A model representing the development of the Canadian elementary school curriculum is as follows: from 1825 onwards most Canadian elementary schools taught reading, writing, arithmetic, grammar and geography. From 1875 until 1950 the curriculum also contained literature, composition, social studies, history and science. (Phillips, 1957, p.433). Gradually, some elementary schools developed out of infant schools and evolved three departments: primary, intermediate and high. In Prince Edward Island in 1846 there was such a primary school which taught the elementary subjects. (Phillips, 1957, p.180).

By the early 1800s, graded secondary schools became more common in a number of Canadian communities. Their increase in popularity was due to education becoming more desirable to a growing middle class. These secondary schools were established and operated by people in the community and

less frequently by religious denominations. Schools such as these also had appeal because they included more variety in their curriculum and were not narrowly sectarian like elementary schools. Secondary schools eventually developed out of the various private academies.

After 1840 in eastern Canada and 1870 in British Columbia, changes in education occurred due to

> the establishment of strong central authorities, ...the introduction of local taxation and the movement towards free schools, and by the attainment of almost universal elementary education. (Phillips, 1957, p.180)

As a result, the community school gave way to the Canadian public school which was financed by taxation and linked to a growing democracy and interest in education. The belief being, "...education for all children should be provided and controlled by the people." (Phillips, 1957, p.124).

By the late 1800s, secondary education moved away from social exclusivity and into the growing middle class population. Some secondary schools became extensions of elementary schools whereby students attended secondary school after completing their elementary education. As well, some high schools, which offered secondary education, divided into junior and senior high schools.

Today, a Canadian elementary school provides the first six or eight years of formal education and sometimes includes kindergarten. An elementary school is usually grades one through seven. A primary education in Canada is

the first three or four grades of school. A Canadian secondary school is a high school, or any other school in between elementary school and college. Secondary school grades are usually eight through twelve. Junior high grades are usually eight through ten and senior high grades, eleven to twelve.

A model for the Canadian secondary school curriculum from 1825 until 1925 is as follows: from 1825 until 1925 the secondary curriculum customarily offered reading, writing and grammar. With English composition beginning about 1850 and English literature around 1875. The languages played a major role in secondary education with Latin and Greek being popular from 1825 until about 1950. French was included after 1850 and German after 1875. Arithmetic, algebra and geometry began early but trigonometry and mathematics were not adopted until much later. Natural philosophy also began early but was eventually replaced by science. Chemistry, physics, and botany were introduced about 1875 and later came agricultural science. Geography remained a cornerstone from 1825 on as did history which included; ancient history followed later by British, Canadian and general. (Phillips, 1957, p.438).

Intellectual Pursuits in British Columbia

There have been many courses used to bring about development of student intellect in the public schools of British Columbia. Records from 1873 show public elementary

schools in British Columbia customarily offered reading, arithmetic, grammar, geography, history, writing and dictation. (Krebs, 1989, p.69). As a rule, all students of the elementary grades were at least expected to study reading, writing and arithmetic. The secondary grades also stressed development of the intellect through subjects such as reading, writing, spelling, grammar, English composition, English literature, arithmetic, mathematics, algebra, geometry, trigonometry, economics, Latin, Greek, French, German, geography, social studies, natural philosophy, science, chemistry, physics, botany, agricultural science, ancient history, British history, Canadian history and general history.

Development of student intellect continues to be the focus of the curriculum in the public schools of British Columbia. Among the courses mentioned in the 1985 document *Let's Talk About Schools* are the three Rs, as well as science, social studies and the study of foreign languages (i.e. French and Chinese).(Booklet 2, pp.5-6). In 1988, the British Columbia Royal Commission on Education published their recommendations for curricula for grades 1 through 10 as follows: the humanities: (English, social studies, French as a second language) and sciences: (mathematics, general science and technology). (p. 29).

Today, the 1989 *Year 2000* document puts intellectual pursuits at the center of the curriculum. As was previously

noted, one of the prime goals of the public school in British Columbia is "intellectual development" (p.4). In order to achieve intellectual development, the Ministry of Education holds, learning must take place. It defines learning as "...connecting new ideas to previous knowledge..." (p.7). The Ministry adds, the "Opportunity to reflect upon one's beliefs and knowledge are important for successful learning."(p.7). The *Year 2000* document holds that learning is to be facilitated through school programs. It states, "What students experience in school programs is an important source of information and experience from which to draw..."(p.7).

The *Year 2000* document mentions that provincial programs are to be organized around and supported by a "Framework for Learning"(p.13). It states, this "Framework" is "...rooted in the...Goals of Education....(and)... grounded in the principles of learning and of curriculum..." (p.13). According to the Ministry, one of the main elements within the "Framework for Learning" is "knowledge." The *Year 2000* document classifies "knowledge" as one of the "learning dimensions." It states, the "Learning Dimensions" are to "...provide the basic support structure for the construction of provincial curriculum..." (p.13).

The *Year 2000* document notes:

> The Knowledge learning dimension involves acquiring a basic understanding of: the diversity and functioning of world social, economic, and political systems and institutions, and the factors

> that influence these systems, such as technology, cultural values, physical environment (i.e., knowledge of world history, social economic, and political systems); the diversity within, and the functioning of, Canadian social, economic, and political institutions (i.e., knowledge of Canadian social, economic, and political institutions); the natural world and its operation, and the principles with which we organize our knowledge about it (i.e., knowledge of natural systems); the processes and exemplary products of human creative endeavour, such as literature, visual and performing arts, construction of social and natural science theory (i.e., knowledge of creative processes and products). (1989, p.14)

The *Year 2000* document contends that development of knowledge is to be maintained at all levels of public schooling. That is, through the primary, intermediate and graduation programs. The primary program being the first four school years. The intermediate program; the next seven years and the graduation program; the final two. The *Year 2000* document states, "...'the curriculum should be based to a large degree on traditional disciplines of knowledge and inquiry'."(p.15). The disciplines referred to include: the "...'Humanities, Fine Arts, Sciences, and Practical subjects'..." (p.15). Subjects include:

> *Humanities:* English, Social Studies, French as a Second Language and other languages, Learning for Living. *Sciences:* Mathematics, Science. *Fine Arts:* Music, Art, Drama, Dance. *Practical Arts:* Physical Education, Technology Education, Business Education, Home Economics. (1989, p.16)

The Development of Music Education in Canada

According to Green and Vogan (1991), the historical development of music education in Canada "...has been affected by the interaction of the church and the

community."(quoted in Clingman, 1992, p.3). For example, in the Maritimes, early music education was based upon the doctrines of the church and the folk traditions of the founders. Halifax and St. John saw a transition from fiddles and bagpipes to formalized music instruction and the interest in band music in Halifax was due largely to the British regiments stationed there. Educational institutions which offered music included Catholic and Protestant private schools. In Quebec, for example, music was offered in Roman Catholic schools and only became available to English speaking Protestants as early as 1789.

In Ontario, the United Empire Loyalists joined with other immigrants around 1800 and created a society which included, among other things, drinking, gambling and music-making. Fiddle and dance music was popular at this time with everyone except the church. The church was a strong factor in the development of music education in Ontario and as a result, church choirs developed. Later, choral groups, music societies and instrumental music groups were also formed. Soldiers of the British regiments became music teachers, organists, and conductors. Although the grammar schools of this period generally carried an academic focus, they sometimes included music.

According to Wright (1975), "The beginnings of Canadian education were steeped in religion..." (p.6). The first Canadian public schools began sometime around 1825 and

immersion in religion meant that along with the three Rs, curriculum customarily included bible study and the singing of sacred songs. By about 1825, singing had become a part of the day-to-day activities in many Canadian classrooms.

Singing generally consisted of simple hymns in the style of New England hymnody. These were usually performed without accompaniment as there was seldom access to instruments or money enough to afford them. Also, few teachers had training in music or played musical instruments. Those teachers who were fortunate enough to receive training in music could also be found teaching at the various singing schools.

In Upper Canada, Egerton Ryerson, the first superintendent of education, "...had a desire to make music a part of everyday school experience." (quoted in Clingman, 1992, p.5). Ryerson recommended music as a subject in the Common School Act of 1846 largely because he believed it would "...foster loyalty and patriotism in Canadian life..." (quoted in Clingman, 1992, p.5). By 1851, according to Green and Vogan (1991), the commissioners of the province and school board of Montreal were employing a music master and instructing the children in singing." (quoted in Clingman, 1992, p. 3). Normal schools in Quebec also included singing in their day-to-day activities.

In Ontario, there were many similarities between music in the public schools and those in the United States.

According to Green and Vogan (1991), rationale was generally based upon "extra musical claims and objectives." Reasons given included: "...moral, intellectual, and physical improvement, and better classroom discipline. Also, the idea of music being seen as a break from the so-called 'academic' subjects..." (quoted in Clingman, 1992, p. 6).

> Although music managed to gain an initial foothold on the strength of its utilitarian appeal, educators neglected to formulate a convincing rationale that would guarantee the subject any permanent acceptance'... (quoted in Clingman, 1992, p.6)

Disputes grew over methodology, lack of systemization and a lack of competent music teachers. A music syllabus was eventually issued by the Ontario Department of Education which outlined two separate approaches, tonic sol-fa and staff notation. In 1893 Ottawa discontinued music in the schools and it was 1905 before attempts were made to reinstate vocal music in Toronto.

Music grew to be an important subject of instruction in Canadian public schools but it came from humble beginnings. It was only a formal subject of instruction in a few Canadian elementary schools as late as 1850. (Phillips, 1957, p.433). It would be 1925 before music would become a subject of formal instruction in the secondary curriculum and still later before it became a regular course of study in the curriculum of many public schools in Canada. At the same time, music was originally thought of as a mandatory subject although it was not always practiced as such.

According to Krebs (1989), during the late 1800s

> attitudes shifted and there emerged a view of music as an optional subject, the teaching of which depended on the talents and preferences of the individual educators. Concomitantly, there arose a preference for specially trained music teachers (i.e. those with a higher level of musical knowledge) over regular teachers. (p.80)

But by the early 1900s, few teachers trained in music in universities such as McGill in Montreal. It would not be until the end of the First World War that some school districts had success in pushing for more teacher education and summer school instruction in music for teachers at the primary level. Basically, some public school teachers did have some musical training but as Phillips (1957) notes, most teachers were "...inadequately prepared..." (p.492) and as a result, teachers with little ear for music became commonplace in Canadian classrooms.

Content and Methods

Early classroom instruction in music was often by ear although there was some formal instruction. Formal instruction usually consisted of exercises for the voice according to the rules of solfege. According to Walker (1984):

> The use of some form of solfege together with various visual aids like the hand or charts with the movable doh has been a basic teaching and learning tool in music for the last 800 or 900 years.(p.44)

The French Solfege or English Solfa or Sol-fa (in Latin Solfaing and Solmisation, Solfeggi or Solfeggio in Italian)

is based on a method developed by the Benedictine monk Guido d'Arezzo in the eleventh century although similarities can be traced back to the ancient Greeks and Chinese. Guido created this method in order to teach choristers to read plainsong melodies because

> The confused state of musical notation until that time-often little more than a diagram to recall a known tune-had compelled the medieval choristers to sing entirely from memory...(Rainbow, 1967, p.169)

Guido's method consisted of matching the Latin monosyllables: *ut, re, fa, sol, la,* and *si* to the notes of the scale. Thus, singing the notes of the scale as monosyllables. His methods were considered complex and limiting and over time many attempts were made to simplify them but they did provide a basis for much of subsequent music instruction.

Among the early writers of music instruction books in the 1800s were the American New England missionaries William Billings (1746-1800) and Lowell Mason. Both Billings and Mason were school masters who taught the rudiments of music and sight singing. Billings was one of the first instructors in the United States to be involved in music teacher training and although he had no formal training in music, he instructed teachers as well as wrote a training book on the fundamentals of music with an emphasis on hymnody. Lang (1941) suggests that the hymnody of Billings was poorly harmonized. (p.934).

Lowell Mason (1792-1872) also wrote music instruction books to train the public as well as teachers. Lang (1941) suggests that Mason's hymnody was somewhat "...more dignified (and better harmonized)..." than that of Billings. (p.944) Mason's achievements were also somewhat more influential for, along with selling millions of instruction books and training teachers, he established musical instruction in the public schools of Boston. But both Mason and Billings supported vocal music only as a means of civilizing and promoting Christian morals and values. For example, Mason "...believed that music was capable of shaping a child's moral development." (Koza, 1990, p.249).

After 1835, the music instruction books of Sarah Ann Glover became influential in Canada. Glover, born in 1786 in Norwich England, the daughter of the rector of St Lawrence's Church, was a musician and music teacher. Her formative years were spent studying organ and piano and later she trained children to sing in the church. Glover designed a vocal method called Tonic Solfa, (Solfa, or sol-fa) that was based on Guidonian Solmisation except she changed and anglicised the syllables to read *doh, ray, me, fah, sol, lah, te.* She also made them movable "...which made each syllable always correspond to the same degree of the scale, no matter where the keynote happened to lie."(Rainbow, 1967, p.46). Yet, her method, as with all previous ones, had problems especially in terms of modulation. (Rainbow, 1967,

p.48).

Another writer of music instruction books was the Reverend John Curwen. Curwen was a musician, teacher, lecturer and author who lived in England and was looking for a system to teach singing to large numbers of children especially those "...in dissenting Sunday schools."(Rainbow, 1967, p.53). Curwen was familiar with Lowell Mason but in the 1840s, it was the work of Sarah Glover that had the most influence on him. According to Rainbow (1967), Curwen learned from Glover "...the basic principles of Tonic Solfa..."(p.150) although it was Curwen's method which would exert a "...strong...influence upon the subsequent teaching of music in schools." (p.53). Curwen also advocated the "...'mental effects' of the various degrees of the scale..."(Rainbow, 1967, p.150).

After 1840, the music books of John Hullah came into use in Canada. Hullah was an English musician, teacher, and writer who trained at the Royal Academy of Music in London. Rainbow (1967) notes, Hullah "...had a complete absence of experience of teaching and no acquaintance with any method of teaching music in schools other than that of Wilhem."(p.124). None-the-less, Hullah was interested in training schoolboys and pupils of singing schools to sing such vocal music as English airs and songs of his own and as a result, he developed a system of fixed sol-fa based on the French method of Wilhem. The problem with Hullah's method

was that it failed to substitute the French sol-fa system for the traditional movable syllables of the English system and because modulation was not possible it was considered "fundamentally unsound." (Rainbow, 1967, p.124).

Learning to sing by reading standard staff notation was and still is, a method employed by music educators in Canada although this approach is not as popular as sol-fa because it is largely viewed as too difficult for children. Essentially, standard staff notation is based upon representing musical tones by characters of particular metric value. The staff consists of five horizontal and parallel lines on and between which the notes are written. According to Walker (1984), the development of notational systems has been ongoing, it can roughly be traced "...from ninth century neumonic notation, to medieval mensuration, to modern metric notations using the five-lined staff." (p.83). (For more on notational systems see Walker, 1984).

Public School Music and Utilitarianism

Music has been supported in public education largely because it is believed to have utilitarian value. That is, support for music in education is based on the philosophical doctrine of utilitarianism whereby it is justified if it is seen to be useful or practical, in that, it effects the greatest good of the greatest number. Historically, this doctrine has been freely interpreted and adopted by several groups and individuals to varying degree and effect.

Belief in the Affective Nature of Music

Perhaps the most influential utilitarian notion in support of music in public education is belief in the affective nature of music. This has been true of public education all across North America for as Broudy (1990) notes, music has most commonly been supported in the curriculum of most public schools because it has "...the goal of individual development to justify...(it)..." (p.33). Today, there remains the view that the main purpose of music in the public school is to bring about change of character.

The notion that music can somehow affect the character of the individual is not a belief indigenous to North America, rather, it can be traced all the way back to the ancient Greeks. For example, Plato believed music was capable of providing "...imitations of the different emotions." (quoted in Broudy, 1990, p.28). As was noted, Plato believed mathematical proportions and corresponding musical sounds could represent and symbolize the character and emotions of an individual or group.

Eby and Arrowood (1940) note that "Rhythms and music for Plato were imitations of good and evil characters just as they were imitations of the different emotions."(quoted in Broudy, 1990, p.28). In modern musical dramas, good and evil characters are commonly associated with particular musical sounds or rhythms. An example of this can be found in the leitmotifs of Richard Wagner whereby "...a musical

theme or motive (becomes) associated with a particular person, thing, or idea..." (Grout, 1973, p.613).

Rayder and Jessup (1976) note that Aristotle wrote of music as "...the most imitative of the arts." Stating:

> In rhythms and melodies we have the most realistic representations of human dispositions, such as the rise and fall of psychic tensions.(quoted in Broudy, 1990, p.28)

This belief has parallels in much of Western thought and music. For example, slow music or sections of music are frequently used to represent melancholy feelings with the inverse being fast music or fast musical sections used to symbolize joyous feelings.

Not only did the ancient Greeks believe that music could symbolize the emotions, they also believed it capable of affecting the character of the individual. It was believed that there was a "...kinship of harmonies and rhythms to our souls." (quoted in Broudy, 1990, p.28). Belief in this kinship led the ancient Greeks to the notion that music was capable of "influencing moral development." (Krebs, 1989, p.73). For example, in the *Protagoras*, Plato mentions music was taught to school children in the hope that they "...learn to be more gentle, more harmonious, more rhythmical and so more fitted for speech and action."(quoted in Broudy, 1990, p.29).

Brubacher (1966) said that Aristotle believed "...music had a special role in character formation." For Aristotle:

Rhythms and melodies could arouse in the hearer

> feelings of anger, courage, and affection of great intensity. In this way...(Aristotle)...hoped...to purge people of vicious feelings and strengthen them in virtuous ones. (quoted in Broudy, 1990, p.29)

Today, the belief that music can provide moral training continues to be one of the most influential of beliefs in support of music in Canadian public education.

Classroom Music and Christianity

Christianity has been a major influence on the development of music in Canadian public education. The notion of developing the Christian social state through training in music can be traced back to the early private schools established by the Church missionaries. Music in these sex segregated schools consisted mainly of the singing of sacred vocal music revolving around hymns and psalms from hymnals or psalters based on either the American or British models. The European tradition, most notably, the Roman Catholic Church and the Church of England, were the most influential in British Columbia. As a result of the church, mass singing schools opened across Canada and served several functions. One, they had their "...origin in the movement to improve church choirs." (Broudy, 1990, p.31). That is, these schools trained and provided singers for the choirs but they also had "...an influence in promoting music in the school curriculum..." (Broudy, 1991, p.31).

Choirs were an integral aspect of Christian religious ritual and it was believed the public school should help to

contribute to their stability and longevity. In fact, one of the reasons for "The origin of music education...has been attributed to the need of singers for the church choir. (Broudy, 1990, p.31). In Western Canada, vocal music became an essential subject in education largely because of the Methodists. According to Green and Vogan (1991):

> The Methodists were interested in the singing school movement as a means for improving the quality of church singing and as an acceptable social activity. (quoted in Clingman, 1992, p.5)

Even more influential and fundamental, though, was the notion that in having students sing their praises to God they were perpetuating sacred beliefs and training children in these beliefs. Consequently, great importance was placed on the inclusion of singing in early public schools.

By the mid 1800s, Western Canada was seeing an ever increasing and wider variety of immigrants arriving mainly from Europe. These early settlers brought with them a variety of religious backgrounds and as a result, there arose debates over which religious principles were best suited as the foundation for public education. In fact, by 1860 in British Columbia, sectarian arguments had become so heated that there was a movement to restrict religious involvement in public schools. Legislators decided that they had heard enough arguing and in 1865 an act was passed by Governor Seymour in New Westminster which forbade public education to be conducted upon sectarian principles. Non-sectarianism was also one of the offshoots of the passing of

the British North American Act by the British Parliament in 1867. This act gave each provincial legislature in Canada the ability to "...make laws in relation to education..." (Cheal, 1963, p.1). A later act passed in British Columbia in 1872 also "...confirmed the position that schools should teach the highest morality and no religious dogma." (Phillips, 1957, p.326).

From about 1865 onwards, public schools in British Columbia were no longer permitted to be based upon religious principles. As well, they were no longer schools "for the people" but rather schools "of the people." According to Phillips (1957), "British Columbia made attendance at schools for children between ages seven and fourteen compulsory in 1873." (quoted in Cogan, 1978, p.7). Although public education in British Columbia was no longer allowed to be based upon religious principles, the tradition of training singers which began with the church would continue.

In 1871, John Jessop became the first superintendent of education in British Columbia and Jessop held "...strong views on the importance of teaching vocal music in the schools..."(Krebs, 1989, p.66). In fact, Jessop went public with his advocacy to ensure that vocal music was included in the curriculum of most public schools in British Columbia. Jessop was committed to vocal music largely because he believed singing praise to God was a necessary and fundamental aspect of education. Jessop was also of the view

that singing was a "universal" endowment bestowed on everyone by the "beneficent Creator."(Krebs, 1989, p.67). This led him to the belief that everyone could and should sing. (Krebs, 1989. p.67). Phillips (1957) notes that at this time other educators were also writing of "...the value of school music...to prepare for church worship." (pp.492-493).

Advocacy of school vocal music by superintendent Jessop and other educators of this period did have an impact on public support and student enrollment in the music classrooms of British Columbia. For example, by the end of the 1875 school year, 54 percent of students, whose schools offered music, were enrolled in vocal music.(Krebs, 1989, p.72). By the end of the 1875 school year, of all students enrolled in the schools of Barkerville, Chilliwack, Esquimalt, Metchosin, Nanaimo and Victoria, 759 students or 54 percent were enrolled in vocal music. (Krebs, 1989, p.70).

Although public education in British Columbia was no longer permitted to be based upon religious principles, religious beliefs continued to be promoted through classroom music. For example, that music could affect character. Although this notion was similar to that held by the ancient Greeks, in British Columbia it was Christian doctrines that were promoted. It was believed that by having students hear and sing sounds associated with Christianity, the result

would be moral training. In this case Christian morals. Thus, the utilitarian belief in music's ability to affect character endured, although such elements as morality, which were once seen to be exclusively Christian, became nonsectarian. On the other hand, the concept that music was a tool of moral training provided the basis for a relationship between music and public education which continued on into the secular realm.

Secular Music

The secularization of music in Canada was due to the immigrants who brought their music and beliefs from Europe, America and eastern Canada. These early English-speaking settlers from Scotland, Ireland, England and New England brought a wide variety of political, social, religious and musical backgrounds. In the eighteenth century, for example, one could find influences from all over but it was the British influence that was the most far-reaching. In fact, according to McGee (1985), "Great Britain...has been a major influence on Canada." (p.19). After 1763, British culture spread westward across Canada to the Pacific and Britain established "...complete control of Canada." (McGee, 1985, p.20).

The British secular musical influence in British Columbia consisted of, among other things, folk songs and dances, drinking songs, military songs and ballads. Public entertainment was made up of singers, fiddlers, pianists and

the playing of many other types of European instruments. There also grew a demand for art music to be performed in salons based on the European example. This music was both vocal and instrumental although early emphasis was on opera including: ballad opera, comic opera, opera seria and singspiel. Eventually, instrumental folk and European art music were also performed in public.(McGee, 1985, pp.40-42). Early folk influences centered around Scottish reels, Irish jigs and English folk songs, dances, ballads and the playing of various kinds of portable wind, stringed, and percussion instruments. In terms of parallels, after 1763, "Cultural life in British Canada was quite similar to that in Boston...and a number of other cities in the United States." (McGee, 1985, p.20).

The music performed in Canadian churches began as acappella chants and hymns. These early chants were homophonic but later became polyphonic. As a result of secular influences, Canadian hymnals changed to reflect the current musical trends which included the influence of gospel music and the popular ballad and led to more sentimental texts and musical chromaticism. A common trend of this period was also the use of secular music with sacred texts. Later, organs and other European instruments were introduced to accompany church services and choirs. Eventually, instrumental music was even performed in some churches. (McGee, 1985, pp.40-42).

Singing schools grew in popularity in Canada and held as their mandate, to teach "...the rudiments of music, using texts issued to separate publications or appended to hymn and psalm collections." (McGee, 1985, p.42). Students of these singing schools eventually sang adaptations of secular songs and by the 1900s, students in Canadian public schools were singing kindergarten, folk, ballad, popular and religious songs. These were sung both in the music class as well as by the school choir. Eventually, instrumental music was included as an element of classroom instruction.

Secular Beliefs

Early support for vocal music in Canadian public schools was based mainly on religious beliefs but also included beliefs that were not necessarily religious. For example, just as there was the belief that training in music could promote the Christian state, there was also the belief that training in music could civilize individuals by developing taste, poise and culture. In the early days, cultivation and refinement of taste were seen as necessary for social progress but there were also other reasons vocal music was supported.

According to Phillips (1957), vocal music was touted by Canadian educators for having the ability to "...refresh the mind, to counteract the hard ambition of commercial society, (and) to stimulate and regulate the emotions...(Phillips, 1957, p.492). Yet, these beliefs are not necessarily

religious. For example, the view that music can promote and maintain classroom discipline. That is, through training in music, it was believed, students would learn obedience and self-control. This notion centered on the belief that the discipline and training required to study music had the effect of disciplining a student's mind. In other words, self-discipline and self-control were viewed as important attributes and training in music was held to be capable of instilling these virtues.

Another belief which was perpetuated was that training in music would develop aesthetic awareness and the appreciation of beauty. For example, it was believed that by having students sing music that was considered beautiful and harmonious, students would cultivate artistic taste and learn to appreciate beauty. By becoming sensitive to the beautiful in music, students would become sensitive to the beautiful in all things. At the same time, it was believed that as a result of singing music deemed "beautiful," the character of the student would become more harmonious.

In 1871, British Columbia school superintendent John Jessop stated that classroom vocal music was "...more practical than mathematics..." (quoted in Krebs, 1989, p.66). Jessop said that vocal music was practical because he believed it was "...entertaining and useful..." (quoted in Krebs, 1989, p.68). In other words, Jessop believed that vocal music was useful as a tool of moral training but he

also believed it useful as a form of entertainment. That is, he believed musical entertainment provided students with a necessary break from the routine of study, work and of daily life.

The use of classroom vocal music as a form of entertainment is based largely upon the belief that music should provide either innocent fun or something of educational value. Innocent fun, pleasure, or amusement can be seen as forms of respite, that is, as a rest or break from the daily routine of study or work. This is held to be useful as it is believed it will rejuvenate the mind of the hard working student. On the other hand, there is also the notion that music can provide some kind of educational value in that the listener or performer becomes influenced and learns something from the music or text. Both of these views are still at work today in the public school.

Music performed by students of the music class has also been used to make societal beliefs and values public. For example, if a community is largely Christian, then a school choir performing Christian vocal music would be seen as proper and befitting. A common scenario exists when music students perform for visiting students, parents or dignitaries. As a result, there can be confirmation of values and beliefs held amongst members of the community. A public performance of classroom music can therefore result in elevated status for students, teachers and the school in

general and this in turn, may mean an increase in enrollment and continued or increased financial support.

The Development of Music Education in the Public Schools of British Columbia: Content and Methods

According to Krebs (1989), "Music was taught in the public schools of British Columbia ever since they were established." (p.66). Records show that by about 1850, music was regarded as a formal subject of instruction in some elementary schools in British Columbia. By 1865, British Columbia had established the public school as the dominant educational agency (Cogan, 1978, p.7) and according to Krebs (1989), music was taught in most public high schools in British Columbia as early as 1870. (p.66).

In British Columbia, after 1850, the public school repertoire was similar to that of other public schools across Canada. It usually consisted of an emphasis on sacred vocal music but occasionally secular texts were adapted to fit sacred melodies and visa versa. Sometimes kindergarten, folk songs and patriotic songs were also sung in the classroom.

In 1871, British Columbia public school superintendent John Jessop made music a "...component of the Teacher's Certification examination..." (Krebs, 1989, p.69). The music section of the Teachers Certification Examination of 1872 was based on the Royal Conservatory of Toronto Syllabus and consisted of basic, elementary and advanced questions regarding a knowledge of music. Topics included: rudiments,

musical terms, techniques, instruments, definitions, standard notation, history, biographical lists and information regarding noted names in music. (Krebs, 1989, pp.82-95).

In terms of teacher certification, by 1888 music was "...one of a group of three papers (the other two being drawing and botany) from which one could be chosen to earn a Second Class, Grade B certificate." (Krebs, 1989, p.76). At the same time, the music portion of the Teachers Examination was not compulsory and many teachers, for various reasons, decided not to complete it. Those who did not complete it simply received a lower overall mark. On the other hand, teachers who had failed or failed to complete the music portion of the exam often taught music simply because of the demand for vocal music and the shortage of teachers.

The demand for institutionalized teacher training in music in British Columbia in the 1870s fell upon deaf ears. Krebs (1989) accredits superintendent Jessop with helping to increase enrollment in music and the demand for music teachers but not for training them. Jessop did not promote teacher training in music largely because he did not believe it was necessary. Instead he held that anyone could sing and teach singing regardless of whether or not they had a musical background. According to Krebs (1989), Jessop

> would not accept the argument that some teachers lack musical ability and thus cannot teach vocal music. His counter-argument (was) that this ability can be acquired even in the absence of a musical

talent...(p.67)

If the classroom teacher needed guidance for instruction of vocal music he or she was referred to the various instruction books in circulation. Guides in favour in Western Canada in 1894 included *Bannister's Textbook on Music* and the works of John Hullah.

As military bases began to crop up around the province, military bandsmen began to play an ever increasing role in the music of British Columbia. Most of these men had been musically trained in Britain and to British Columbia they brought a variety of influences that by the 1890s included: marches, patriotic wartime songs, European folk songs and ballads. It was also not uncommon for bandsmen of this period to accompany local choirs or provide public concerts featuring light opera and instrumental works. Bandsmen also "...constituted a steady source of music teachers..." (McGee, 1985, p.29) offering group and private music lessons to the community while others became the music specialists traveling from school to school to teach music and train teachers.

Green and Vogan (1991) note, the growth of such national institutions as the Canadian Broadcasting Corporation and the Toronto Conservatory of Music in the 1900s also had an influence on the formal development of music education in British Columbia. These influences included the training of private teachers, the development

of school music, as well as the establishment of the British Columbia Music Festival. By 1925, as a result of these and other influences, music had become a formal subject of instruction in the curriculum of many secondary schools in British Columbia.

According to Green and Vogan (1991), *The New Canadian Music Course*, a five book series by Coney and Wickett, was authorized for the British Columbia schools in 1925. It was advertised as

> 'a graded course of instruction in singing, designed to teach the reading of music, to develop an appreciation of rhythm, and to provide a large selection of songs suitable for all grades'. (quoted in Clingman, 1992, p.7)

Green and Vogan argue that although this series furnished a systematic approach for elementary teachers, in actuality "...it was neither new nor progressive." (quoted in Clingman, 1992, p.7). In fact, the course "...reflected the traditional British background..." (quoted in Clingman, 1992, p.7).

Another important advocate of vocal music in public education in British Columbia during this period was C. E. Findlater. Findlater was a supervisor of music in Vancouver from 1928 to 1931 and according to Green and Vogan (1991), Findlater

> taught choral singing at the summer school held in Vancouver and stressed the necessity for theory work in the classroom when teaching music or leading a school choir. (quoted in Clingman, 1992, p.8)

Due to increased public interest, enrollment in music in the public schools of British Columbia reached a high in 1929. (Green and Vogan, 1991). At this time, there was also growing community interest in instrumental music, juvenile symphony orchestras and courses in music appreciation. However, as Green and Vogan (1991) note:

> this momentum came to an end in 1931 when financial problems were encountered and although music continued to be part of the schools in the 1930s,...enrollment declined. (quoted in Clingman, 1992, pp.7-8).

Statistics from the Ministry of Education (1984) show that after 1957 enrollment in music at the secondary level continued to decline.(p.29). This drop in enrollment had educators worried, both for the security of music in the curriculum and for their jobs. As enrollment declined, music came under scrutiny and criticism. A common complaint was that maybe music was not suited to the public school but rather it might be better suited to institutions that were designed for such. In other words, leaving the teaching of music to private teachers and music schools. This was a view agreeable to those who considered music education an extra-curricular activity.

As a response to waning support and declining enrollment after the fifties, Harris (1991) notes:

> music and other less secure subjects within the curriculum adopted the scientific or technological model. Arts educators, in a move to secure respectability, legitimacy, and funding moved steadily towards a disciplined and structured approach... (p.27)

By-and-large, this was an attempt to make the teaching of music and the assessment of learning appear more scientific and empirical in the hope that this would improve the status of music in the curriculum.

According to Harris (1991), the scientific and technological model for music education was based on the notion that music "...could be broken down into "pre-packaged segments for learning and...could be evaluated objectively." (p.27). Pre-packaged segments consisted of set written music lessons that almost anyone could teach. For example, lesson plans were based upon having the whole class learn to play or sing a simple set melody or clap an easy rhythm. As well, students were expected to memorize the names of composers and their music, their dates of birth, death and other anecdotal information. Assessment then consisted of the child's ability to memorize and retain this information. Retention and skill was then determined through objective testing. The child had to learn to play the music properly, as well as, answer questions correctly in order to pass the music exam.

Popular music instruction methods after the first half of the twentieth century included those of Hungarian scholar and composer Zoltan Kodaly (1882-1967). By-and-large, Kodaly was interested in both European folk and art music. According to Walker (1984), Kodaly's interest in school music education was primarily "...prompted by utilitarian

needs of a musician: He needed singers to perform his works."(p.36). As a result, Kodaly developed a music teaching method based, with some minor modifications, upon the hand signal method of John Curwen.

The Kodaly method is based on the belief that singing is the basis of musicianship. Therefore, much of it centers around traditional literacy and skill development. At the same time, the method makes use of folk songs largely because Kodaly believed it was important to introduce students to their ethnic roots. Kodaly also used folk songs because he held them to be "natural songs." Also influential was Kodaly's belief in natural intervals. According to Walker (1984):

> Kodaly and his associates believed in a natural melodic pattern that occurred in all children. This pattern centers around the interval of a minor third, said to be the easiest interval for children to sing, and includes a falling minor third and an upward perfect fourth...(p.38)

The result was a "vocational method" for students and teachers based upon simple pentatonic tunes and rhythms.

The Carl Orff method is also used in music education in the public schools of British Columbia. Orff, born 1895 in Germany, developed a music instruction method that was also based upon the integration of folk and art styles. According to Grout (1960), Orff's *Music for Children*, is

> a graded collection for use in schools which has won acceptance among...music educators in many countries. It involves movement, singing, and playing on...instruments (mostly percussive in the early stages) and leads children through a great

variety of scales and rhythms...(p.671)

Essentially, Orff's method begins with pentatonic scales but later adds major and minor scales to mainly diatonic harmony, but the emphasis is, as Walker (1984) notes, mainly "...on rhythmic responses..." (p.46). Orff uses folk styles and primitive instruments as an analogy to simple ideas and techniques which, as the child develops, are to move to those that are more sophisticated.

Curriculum Guides in B.C.

In an attempt to adopt a more structured approach to teaching music in the classroom, the British Columbia Ministry of Education made available standardized curriculum guides. These guides offered music teachers uniform content and methods of instruction. For example, content based upon, among other things, lists of suggested musical pieces that teachers are to have students learn and such things as lists of names, places of birth and birth dates of various influential composers. As well, descriptions of appropriate teaching methods are also offered. At the same time, procedures for training are chosen so as to produce "particular learning results" which are to be objectively tested for.

The 1980 *Curriculum/Resource Guide* for the secondary grades notes that skill development is one of the aims of music education. It suggests that music students develop such technical skills as "sight reading."(p.8). Skills are

also the basis of such courses as: band music, jazz ensemble, choral music, vocal jazz ensemble, madrigal, language diction, strings and guitar, traditional music composition and counterpoint. Also included in the guide is a list of learning outcomes, evaluation, suggested recordings, journals and references. Although the 1980 *Curriculum/Resource Guide* includes some other areas of musical enquiry, the focus tends to revolve around the development of traditional musical skills.

The 1980 *Curriculum/Resource Guide* notes that all music programs in the secondary grades should have various "Learning Outcomes." Essentially, "Learning Outcomes" are the musical areas in which a student should develop proficiency. For example, by the end of Music 12, it is believed students should have acquired technical competency on their instrument. This refers to: instrument maintenance, articulation, inflections, enunciation and diction. It also suggests that students become proficient at musical theory, history, form and style, orchestration, arranging, conducting, composition, harmony, counterpoint, scoring, notation, instrumentation, improvisation, sight reading and ear training.

The 1980 *Curriculum/Resource Guide* for secondary grades notes, evaluation should assess the student's "...cognitive and affective learnings..."(p220). Affective learning meaning that the student will be evaluated on the basis of

such things as attitude and attendance while cognitive learning focuses on "...a student's musical proficiency..." (p.220). The guide states, "...evaluative results of cognitive content are generally made fairly objectively." (p.220). Objective evaluation means that students are to be tested for such things as intonation, technique, rhythmic accuracy, tone quality, style, diction, articulation, breathing, posture, ensemble playing or singing, sight reading and ear training.

The 1981 *Elementary Arts in Education* curriculum guide also leans heavily towards the promotion of traditional musical literacy. It suggests that: students learn to identify melodic and harmonic structure, determine the beat, metre and rhythm, identify timbres and forms, identify and correctly interpret symbols and terminology, develop vocal skills, develop singing skills, play resonator bells and other classroom melody instruments, develop skills for using classroom rhythm instruments and body percussion, and develop skills for using the recorder.(pp.41-50).

The 1985 *Curriculum Guide/Resource Book* for elementary grades also emphasizes the development of traditional musical skills. It suggests that students learn rhythm, melody and harmony through traditional means. For example, rhythms are to be sung, clapped, or played on some kind of percussive device. Melody is organized around identifying written pitches and songs are to be performed by the voice

or other traditional instrument. An examination of musical harmony focuses on students developing a knowledge of chords by being able to create and identify them.

The 1985 *Curriculum Guide/ Resource Book* for elementary grades notes that assessment of the elementary grades is also based on suggested "Learning Outcomes." By the end of grade 7 it is suggested that students should be able to: demonstrate the use of appropriate music vocabulary and notation, recognize, create and perform rhythmic and melodic patterns, demonstrate a knowledge of the principles of harmony, demonstrate the ability to use the voice appropriately, demonstrate the ability to identify and use a variety of musical instruments, and demonstrate a knowledge of styles and forms of musical expression.

The 1985 *Elementary Curriculum Guide* suggests that evaluation of elementary students be done through a combination of observation, written tests and aural or oral tests. The main purpose of evaluation being: to assess the child's ability to recognize and/or perform rhythm, melody, form, harmony, dynamics, tempo, and timbre. The suggested grading scale is as follows: 0 means not attempted, 1 means poor, 2 equals fair, 3 is good and 4 is excellent.

Thus, the desired learning result of most public school music classes today in British Columbia is based on a number of technical requisites. For example, students are to learn to sight-read music, to produce a particular sound on their

instrument, and to perform various musical works. In other words, they are to develop technical competency. At the same time, students are also expected to memorize such things as historical details about famous music and composers.

The assessment of students' musical abilities consists of observing how well they sight-read, whether or not their tone quality matches a particular ideal the teacher has in mind and how well they play musical works. They are assessed on how technically competent they are and on how much technical competence or skill they have acquired. At the same time, examinations also assess whether or not the student can remember musical or other biographical information regarding the history of music and musicians. As most of these requisites are the result of repetition, rote-learning, and memorization, assessment actually checks the extent of the student's ability to memorize and learn by rote. If the student excels in any one of these technical areas then an assessment would show that successful learning has taken place.

Institutionalized Teacher Training in British Columbia

In the early 1900s there was very little institutionalized teacher training available in British Columbia and none of it in music. What was available was offered through the Provincial Normal School, Vancouver School Board, King Edward High School and Victoria High School. Victoria High School-later to be called Victoria

College and still later the University of Victoria-offered some basic teacher training and certification but did not offer courses in music. In 1915, the University of British Columbia, affiliated with McGill University, opened in Vancouver but offered no teacher training whatsoever.

In 1923, the University of British Columbia created a Department of Education and undertook "...the direction of the professional training of candidates for the Academic Certificate.(U.B.C., 1926, p.100). This teacher training course was open only to university graduates and music was not a subject of instruction in the University at this time.

In 1931, the Education Department in the University of British Columbia introduced a course in music. The University also made it obligatory for all education students to take the program entitled: "Methods in Elementary School Subjects." (U.B.C., 1931, p.136). This program was organized around the following subjects: art, music, writing and other primary grade activities. Each of these subjects, although mandatory, was only assigned one hour per week of study. By 1940, the University no longer considered art, music, and physical education obligatory but rather "Additional Subjects." (U.B.C., 1940, p.141). This meant any study of music was optional for prospective teachers.

In the early 1900s, there was a push for more teachers to receive degrees but according to Phillips (1957), "...by

the beginning of World War II only 30 percent of British Columbia teachers had university degrees."(p.597). It would not be until the end of the second world war that Canadian universities would offer programs for both specialist and generalist music teachers.

In 1947, the University of British Columbia did not offer a degree in music but it did offer music courses through the Faculty of Arts and Science. Subjects of instruction from the music department included: the theory of music, study of harmony and counterpoint, ear training, music appreciation, analysis of structure and form and the art of listening.(U.B.C., 1947). Music schools recognized by the University of this period included: the Toronto Conservatory of Music, McGill Conservatorium, Royal College and Royal Academy of Music, London, and the Trinity College of Music, London.

Music courses available from the Department of Music at the University of British Columbia were based on four levels or years of study. In addition to those topics previously mentioned, subjects of instruction also included: the development of instrumental music, ability to recognize intervals, triads, dom. 7ths, rhythms, ability to sing major and minor scales from any degree, sufficient knowledge of piano to play harmonic progressions, 18th and 19th century harmony, early melodic styles, 16th century counterpoint, 2 part vocal writing, the study of Bach and Beethoven, fugal

writing and some 20th century music.

By 1956, the University of British Columbia offered a Bachelor of Music degree, a four-year Bachelor of Education degree leading to an Elementary Teaching Certificate, a five-year Bachelor of Education degree leading to a Secondary Teaching Certificate, and a two-year program for graduates leading to a Teaching Certificate. Candidates for the degree of Bachelor of Music with a teaching certificate had to complete four years of music training and two years of teacher training. Candidates in the Education Department could major in music and receive their Basic Teaching Certificate. Students interested in either the four or five-year Bachelor of Education degrees had to take courses in music if this was their concentration. Among the prerequisites to either a degree in music or music education, candidates needed to have recognized previous musical training satisfactory to the department of music.(U.B.C., 1956).

Teacher training became more widespread in Victoria in the 1950s as

> The Victoria Normal School was incorporated into Victoria College as a part of the College of Education, which, beginning September 1, 1956, assumed responsibility for the training of teachers. (U.Vic., 1963, p.12)

At this time, teacher training in music in Victoria closely resembled that of the University of British Columbia as Victoria College had been affiliated with both McGill

University and the University of British Columbia.

In 1963, Victoria College was renamed the University of Victoria and although it was no longer affiliated with the University of British Columbia, it continued to offer teacher training and certification closely akin to that of the University of British Columbia. The Faculty of Education at the University of Victoria offered degrees in Music and Education as well as teaching certificates in either the elementary or secondary fields. The University accepted a B. Mus. or a major in music from other recognized universities for entrance into Education. The University also offered music as a teachable major towards a degree in Education and this enabled successful applicants to teach at either the elementary or secondary level.(U.Vic., 1963).

The focus of institutionalized music teacher training at both the University of British Columbia and the University of Victoria was based upon the development of traditional skills in music. The majority of degrees granted in music from both universities consisted of traditional performance oriented degrees. Education students with a concentration in music were also expected to develop some technical expertise in music.

The focus of institutions devoted to training teachers in musical skills was not unusual during the first half of the twentieth century as there was widespread utilitarian support for traditional public school music. In other words,

training in music was being advocated for its positive power to affect and as positive affectation of character was one of the aims of education, it was held that training in music was therefore in line with educational goals.

Simon Fraser University began in Burnaby, British Columbia in 1965 and today it offers a four-year Fine Arts program for undergraduates involving interdisciplinary studies in the fine arts. This means students explore music as well as visual art, dance, theatre and film. The aim of the School for Contemporary Arts is to "...combine theoretical and critical study with practical experience." (S.F.U., 1991, p.81).

> The Music Concentration emphasizes composition, and includes complementary courses in music history analysis and criticism, performance, and non-Western musics. (S.F.U., 1991, p.83)

As well, students learn to compose music for acoustic instruments and there is an electroacoustic music studio which includes computer music. Although some traditional skills in music are offered, the emphasis is on developing a knowledge and understanding of music.

The Education Faculty at Simon Fraser University offers courses in music as part of its one-year post-graduate Professional Development Program for prospective teachers and its undergraduate degree. The course *Music Education as Thinking in Sound* emphasizes "Understanding the language of music, both historical and contemporary, and use of electronic and acoustic instruments in the general music

classroom."(S.F.U., 1991, p.183). The course *Designs for Learning: Music* is concerned with developing an understanding of how to teach music in the elementary school (K-7). The focus for teachers includes: understanding and appreciating music from many cultures, using acoustic and electronic instruments, acquiring basic literacy, music composition and improvisation, music and computers, and curriculum planning.

Today, the University of British Columbia offers a degree in music as well as a teaching certificate through the education department. The focus of the School of Music continues to be on traditional performance as

> all students in the Bachelor of Music programs participate in the large and small instrumental and choral ensembles...to develop their skill as musicians and to experience a wide range of repertoire. (U.B.C. Calendar, p.223)

Most students of teacher programs at the University of British Columbia have their degree or the first three years of an undergraduate degree before they complete their fourth year in education. Prospective secondary teachers arrive with degrees and must take music education courses which stress developing curriculum and instructional techniques, choral music, classroom instruments, instrumental and choral jazz, the production of musicals, and arranging for chorus, band and orchestra. Prospective teachers enrolled in education and wishing to teach music at the elementary level must take the course entitled "*Curriculum and Instruction in*

Music:Elementary-Curriculum organization in music; principles and methods of instruction applied to teaching music." (U.B.C., 1992, p.375)

Specialist teachers who receive diplomas or degrees in music from the University of British Columbia generally do so in the area of performance. As part of his or her education, the prospective teacher is taught many of the skills necessary to be a musical performer and to be a performer essentially means, among other things, training in sight-reading and developing technical competency on their instrument of choice. For the generalist teacher, some skill-training in music is also held to be necessary in order that the teacher be qualified to impart skills to students of the public school.

Chapter Two

Skill-Training versus Twentieth-Century Music

The Promotion of Skill-Training

There are those who support the notion of skill-training in public school music. Educators, for example, have been found to advocate students acquire skills. In 1959, the British Columbia Teachers Federation issued a statement which stressed the "...need for skill training..." amongst students. (Wright, 1975, p.10). As well, public school teachers have been expected to develop technical competency in music. Phillips (1957) notes that in the early 1900s, "Candidates for elementary school teaching were encouraged to acquire skill in music..." (p.493).

Teachers impart musical skills in public education for at least two reasons. One: because it is believed students should give a performance of traditional music at least once during the school year. As a result, teachers have to focus the majority of their time and energy on teaching pupils to read music and sing or play an instrument in the hope of developing a repertoire suitable for public performance. The author holds that it is the content of musical performance which is wrong and not performance itself. Secondly: as was noted in the previous chapter, classroom music is based on the development of musical skills largely because music is believed to be a tool of moral training. It is believed that developing skill in music is useful because it can

contribute to the development of student character.

In the hope that students develop musical skills, public school teachers customarily make use of discipline. In other words, they train students to be obedient and efficient. This is what Witkin (1974) refers to when he says, "Music teaching is therefore defined as the attempt to discipline pupils to sing or play a set piece..." (p.120). In other words, discipline and repetition are used as aids to memorization. Teachers employ techniques such as these in the hopes that pupils will come to know a selection of traditional music well enough that they can eventually perform it.

Many music teachers enforce order and discipline as a way to skill-train students in the public school. Order and discipline are enforced so that students will remain focused on the task at hand and this can set a tone of rigidity in the classroom. As a result, students may come to believe that the class is too rigid and structured. On the other hand, teachers may grow to feel that they have no choice as they must continually resort to discipline in order that their students develop musical skills.

A teaching approach which over-emphasizes order and discipline can create problems for the music class. For one, the class may not be perceived as creative or fun for either the teacher or the students. As well, investigators (e.g. Witkin) have found that some students and teachers find

public school music irrelevant because it is too rigid and disciplined. In other words, traditional music produced in music classes is perceived as unimaginative which, in turn, results in student and teacher dissatisfaction. Lastly, too much of an emphasis on order and discipline can lead to mechanical music-making.

Along with getting pupils to play or sing a set piece, teachers customarily use discipline and repetition for at least two other reasons. One, to aid in the memorization of anecdotal musical information. Students, for example, are asked to memorize the names of composers, their compositions and that sort of thing and two, because it is believed discipline and repetition will lead to moral training. In other words, development of character is often seen as a result of discipline and repetition as it applies to learning music.

Techniques such as discipline and repetition are useful tools in the training of traditional musical performers. They are used to develop, among other things, musical literacy, technical competency and endurance. Skills such as these are promoted in order that the musician be able to cope with the demands of being a performer of traditional music; be able to play difficult musical passages, develop tone and blend with the other instruments in the orchestra. Although discipline and repetition are useful tools in the training of traditional music performers, they are not found

in the stated aims of music education.

Memorization, Rote-Learning and Repetition

One of the tools of skill-training in public school music is memorization and this is something music teachers regularly promote. For example, students are asked to memorize such things as pitch and rhythm patterns in order to sight-read. Conversely, they are asked to learn to read traditional musical notation in order that they ascertain pitches and rhythms. As well, students are required to memorize anecdotal and other musical information. It can be said, therefore, much of classroom time is spent learning to memorize such things as pitches, note values, rests, and other elements of traditional music and notation. (*B.C. Elementary Curriculum Guide,* 1985). The problem with this practice is that there is no musical context to the memorization. In other words, students are not developing an understanding of the beliefs behind pitch, note values, rests, and other elements of traditional music and notation.

Instead of exploring such things as the musical beliefs of cultures, public school teachers tend to ask students to memorize the birth places and dates of various Western composers. Instead of teaching children about the cultural context of musical styles, teachers concentrate on having students memorize Western songs and as a result, few students get an opportunity to listen to and learn about the beliefs which underlie musical practice. For example, few

learn of the Inuit practice of throat-singing.

Inuit women engage in a type of guttural throat-singing to pass the time inside during the cold winter while the men are away hunting. The women sing in pairs and see how long they can keep up a sort of good-natured guttural musical "see-saw" before the other gives in. Instead of teaching students how and why Inuit women incorporate this type of musical activity-sans instruments-into their everyday lives, teachers focus on having students memorize Western musical information and skills. As a result, there is little time left for the development of a knowledge and understanding of the cultural context of music. Of note: throat singing is done with "voiceless" sounds i.e., the singers bypass the vocal folds.

Learning by rote is a tool of memorization. By definition, rote learning infers a mechanical or routine way of putting something to memory. Yet, in terms of education, rote learning and memorization cannot be advocated because they do not necessarily lead to the development of student intellect. In order to develop student intellect, one must develop an understanding of music rather than simply acquiring skill in it. The use of rote-learning to aid memorization, therefore, must be seen as a problem for education as the concept of rote-learning does not specify content. In other words, anything can be learned by rote even that which is not educational.

Learning by rote does not imply the development of knowledge and understanding. A student, for example, may learn by rote to memorize the notes on the keyboard of a synthesizer but he or she may not know that the pitches are arbitrary and can be programmed. Therefore, the use of rote-learning and memorization does not imply developing an understanding of such things as programming and tuning systems.

Educators should never isolate musical elements from their context otherwise students will not come to know the ideas and beliefs which underscore musical practice. As rote-learning and memorization do not necessarily imply developing a knowledge and understanding of things such as musical context, they can not be advocated as necessarily educational.

Rote-learning is customarily used to teach classroom pupils to sight-read. In fact, a great deal of classroom time is taken up developing sight-reading skills in the public schools of British Columbia; a practice which tends to be over-emphasized. The development of skill in sight-reading is time consuming and as was noted, does not imply the development of a knowledge and understanding of music. For example, a pupil may learn to recognize and play a perfect fourth interval but know nothing of why the interval is called perfect. Knowledge of the musical context of a perfect fourth is imperative if one is to understand its

usage.

As an aid to memorization and as an element of rote-learning, public school music teachers customarily make use of repetition. Students are asked to sing or play a musical phrase over and over until they get it right. Other than the fact that this may be one of the reasons some students and teachers do not hold classroom music in high esteem (Witkin, 1974), there are those such as Lois Choksy (1974) who believe that repetitive training in music teaches a child how to learn. By learning to sing or play a musical instrument, the child's mind will be receptive to other information and skills. Yet, there is no evidence to support this claim. In fact, training cannot be advocated from an educational perspective because as we shall see, the outcome of training does not necessarily imply knowledge and understanding. Finally, repetition detracts from time which could be better spent developing knowledge and understanding.

It could be that many students and teachers come to find music in the public school irrelevant because of the over-emphasis on memorization, rote learning and repetition. Teachers, for example, feel that, try as they might, they just cannot seem to make their bands, orchestras, or students sound anything but mechanical. Students, on the other hand, may come to believe that the memorization of traditional music is just too rigid an approach. Instead,

they would like to be more exploratory and creative. Inevitably a dissatisfaction due to a lack of creative activities can cause both teacher and student involvement to decline. Note: other arts subjects such as visual art and drama are taught through the exploration of creative activities but the same cannot be said for music.

Mechanical Sound-Making

As a result of an emphasis on developing skills, much of the music produced in public school classrooms is mechanical sounding. This is due to what Witkin (1974) calls "...the process of mechanical sound-making..." (p.121). This is not in reference to the use of machines to make music but rather to traditional music-making methods. In other words, the making of traditional music by students who have not developed sufficient technical skills to do so. As a result, students as well as teachers can come to believe that the music produced in public school classrooms is irrelevant because it sounds mechanical.

From time-to-time some music teachers update their classroom repertoire by adding the latest new music; for example, the latest rock charts as scored for stage band. Often these charts are included with the hope that they will appease students. Teachers hope that by appearing to be more "with it", classroom music will be looked upon more favorably. Yet, as few in the public school are highly trained in traditional musical skills, music such as this

also tends to sound somewhat mechanical.

Attempting to Train Musical Performers

There are always those in the public school system who believe that one of the roles of public education is the training of musical performers. In the early days of the public school, it was the church who promoted the training of singers for the choir. Later, the public school promoted the training of instrumentalists alongside the training of singers. Today, there remains the belief that one of the roles of public education is the training of musical performers.

One of the reasons teachers believe that the role of public education is the training of musical performers is because it is encouraged in such places as curriculum guides. For example, secondary programs such as band, choral music and strings emphasize

> performing music in public, (that students) be able to perform in ensembles, be able to perform music demonstrating mastery of relevant technical and interpretive skills, be able to perform with confidence and poise, (as well as develop) poise and stage presence... (*B.C. Secondary Curriculum Guide*, 1980, pp.7-8)

At the elementary level the emphasis is also on performance as the 1985 *Curriculum/Resource Guide* states, by the end of grade 7 students should be able to "...perform rhythmic patterns, perform melodic patterns, perform dynamic variation, and perform variations of tempo..." (p.5).

While curriculum guides do mention that students should

develop some skill in traditional musical performance, this is only one of the goals requested. The 1985 *Elementary Curriculum Guide,* for example, notes that elementary students should also be able to recognize, demonstrate and understand a variety of concepts concerning music including the role of music in society. (pp.4-6). At the same time, the secondary grades ask that students come to understand, recognize, know and create music (1980, pp.7-8). As well, both grade levels promote critical thinking.

Secondary guides mention such avenues of enquiry as non-traditional twentieth-century electroacoustic music. The 1980 *Curriculum/Resource Guide* for secondary grades, for example, suggests that electroacoustic music include: Musique Concrete and electrically generated sounds, soundscapes, computer music and the exploration of tone clusters. (pp.181-185). At the elementary level, the 1985 *Elementary Curriculum Guide* advocates playing games involving sound and silence, using voice and a variety of instruments and objects to explore musical concepts as well as a range of vocal sounds, body percussion, and non-traditional instruments.(pp.129-130).

The decision as to whether or not twentieth-century techniques such as those mentioned are included in the public school is largely up to the music teacher and the school. Therefore, it is quite possible twentieth-century music is being ignored in the public school as a result of

narrow-minded educators failing to meet the goals of music in public education; teachers adhering to only one aspect of curriculum guides while ignoring the rest.

Sometimes public schools and their music teachers become successful at training traditional musical performers and as a result, schools become well known for their band, orchestral, or vocal programs. Sometimes instructors come into contact or influence a particular music student or musical ensemble to such an extent that fame is generated. More often than not, though, musically gifted students are already involved in such extra-curricular activities as music lessons. Therefore, a student's musical development or success cannot always be directly attributed to music in the public school. Music students or ensembles who win awards at music competitions or festivals may create a reputation of renown for the student, musical ensemble, teacher, or school but this practice tends to overshadow the wider goals of music in public education. Instead, focusing on the development of traditional musical skills and performers.

The generation of fame, for the instructor, the music program, or the school can result in parents from other districts enrolling their sons or daughters in schools which stress traditional music performance programs. In fact, sometimes parents and children will travel great distances to schools outside of their own districts just to enroll their sons or daughters in programs such as band. The

problem with this practice is schools are using private tuition for gaining public glory. As well, the music teacher and the principal of the school are perpetuating the notion that the role of the public school is the training of musical performers, forgetting that not only is the training of musical performers not a role of public education, neither is the generation of fame an objective. Therefore, teachers, principals and others who choose to promote the training of musical performers and the generation of fame are not adhering to the goals of public education.

The generation of fame due to the training of musical performers tends to put undue stress on teachers and principals. For one, they may feel that they must support the production of performers in order that they uphold the school's reputation. Not wanting to deviate from a previous track record may force them into a position they may not wish to be. Teachers and principals may also be criticized or come to feel that their actions are unwelcome if they try to change the music curriculum by broadening the scope of music education in their school. Such practices are unfair, in that, on the one hand, they force the teacher to toe-the-line and on the other, deprive students of a broad base of musical understanding. Therefore, the training of traditional musical performers in programs such as band must be seen as unfair as they ultimately narrow the scope of music education in the public school.

Enrollment in music may increase due to fame generated by pupils and ensembles. The community may take more of an active interest in a particular school as a result of classes such as band. Yet, success such as this will only be short-lived and fleeting as fame does not necessarily contribute to the longevity of music programs. A decline in the status of music programs can occur as a result of dwindling enrollment or funds resulting in their eventual cancellation. Educators would have a hard time convincing administrators that music should remain in the curriculum on the grounds of fame alone especially since this is not an aim of public education. Thus, music teachers and others who advocate the skill-training of musical performers in the public school as a way to achieve fame and increase the status of their programs and schools are creating their own goals and mandates for education. From an educational perspective, this is a practice which cannot be condoned; the goal of music education is to educate everyone and not just a talented few.

Using Classroom Music for Respite

Training in music is held to be useful in the curriculum of the public school because it is believed to provide students with a brief period of rest or relief. There are those who advocate students sing songs or play music as a break from working on regular course work. For example, British Columbia public school superintendent John

Jessop wrote of music as a break from the routine of study and as a form of "recreation." (quoted in Krebs, 1989, p.68). Others, such as British Columbia education inspector D. Wilson, wrote of what happened after students sang. According to Wilson, "In an altered mood they resume their studies, and pursue them with fresh zeal. (quoted in Krebs, 1989, p.72). Phillips (1957) found that music was advocated in the public school in order to "...to counteract the hard ambition of commercial study..." (p.492) and Clingman (1992) mentions that public school music was considered "...a break from the so-called 'academic' subjects..." (p.6).

Today, training in music continues to be justified in the curriculum of the public school as respite or a break from the routine of study. The problem with this is the notion of a brief period of delay, rest, or relief is generally in response to the academic focus of the curriculum. Therefore, training in music is actually being promoted as a diversion from intellectual endeavours. While music can be seen as a valuable break from routine, respite is not fundamental to the concept of education mentioned in chapter one. The concept of education mentioned implies the achievement of a desirable state of mind characterized by knowledge and understanding. It suggests that students become intellectually involved in activities which lead to the development of a knowledge and understanding of particular subject areas. Whereas, the concept of respite

implies a brief period of rest from those very same activities.

Classroom Music as Entertainment

Training in music in the public school is often deemed useful because it can provide entertainment. For example, in 1873 British Columbia school superintendent Jessop wrote of classroom music as "entertaining." (Krebs, 1989, p.68). Today, music is still performed in the classroom, the assembly room, or at some other public event for its entertainment value. The problem with this practice, as with respite, is that it fuels the notion that all classroom music can or should do is supply entertainment. Once this kind of restrictive belief is placed upon music in the public school, it can be considered an unnecessary luxury, that is, unnecessary in terms of public education.

In terms of education, there are at least two types of entertainment which must be discussed. The first, is that which attempts to convey some kind of a message and the second, that which does not. Basically, the use of classroom music to provide entertainment without any educational content simply cannot be considered educationally justifiable. As well, entertainment which is fun and pleasurable is not necessary to the concept of education. Therefore, only that which consists of the transmission of valuable educational information can be considered educationally justifiable. As the concept of entertainment

does not specify content, it should not be seen as necessarily educationally justifiable.

Using Classroom Music to Transmit Beliefs and Values

One of the reasons music remains linked with education is because of the notion music can transmit beliefs and values. In the early days of the public school, for example, it was believed music could promote morals based upon the doctrines of Christianity, including: order, discipline, good health and enlivenment of the soul (Krebs, 1989, p.67), as well as regulating the emotions and preparing for church worship. (Phillips, 1957, p.493). At the same time, classroom music was promoted because it was believed capable of civilizing the children of our forefathers and therefore considered "refining and ennobling." (Krebs, 1989, p.73). In 1846, it was believed singing in the public school would foster Canadian loyalty and patriotism (Clingman, 1992, p.5) and today, music is tied to such things as social development and the promotion of alternative modes of thinking. (B.C. Ministry of Ed., 1985, p.9 and B.C. Ministry of Ed., 1988, p.29).

Music and text can be used to promote point-of-view. Text, here refers to either the sung or spoken lyric such as that found in the words of a song. The words of a song can be interpreted literally. The singer can sing lyrics whose meaning is easily understandable unless, of course, the text is non-narrative or experimental. Usually all the listener

needs is to be able to hear the words and understand the language in order to grasp the meaning of text. In this way, musical text is capable of addressing a wide range of human issues, interests and beliefs.

The usage of music without text to transmit beliefs occurs largely due to association. As Walker (1984) argues, "Music can have meaning only by association." (p.7). In other words, a particular musical sound comes to be associated with a particular emotion, situation, expression, character, or belief and when that musical theme or sound is heard, the listener learns to connect it with a certain belief. In Western culture many believe that a major chord produces a warm, happy sound. New music, that is, music which has just been composed and is slightly different from previous, may choose to play upon this association. A composer may choose to juxtapose sounds from several different sources. Karlheinz Stockhausen did just this in his 1967 composition *Hymnen* in which he incorporated "...words and melodies of many different national anthems in a performance combining electronic sounds with voices and instruments..." The intention being, in Stockhausen's words, "...'to hear familiar, old, performed musical material with new ears'." (quoted in Grout, 1973, p.723). Note: in *Hymnen*, Stockhausen transforms the national anthems using various techniques to make the originals almost unrecognizable.

A composer may also attempt to ignore convention altogether; disregard the association which exists between composer and sounds produced. Take, for example, *Cartridge Music* (1960) by John Cage. Here, Cage combined sounds generated by manipulating, among other things, an acoustic piano on tape. The tape was then spliced, played backwards as well as forwards and the speed of the tape was altered. These sounds were combined with those of phonograph cartridges being scraped and banged, causing, among other things, distortion. Upon hearing, the result reminds one of a random industrial soundscape; not at all unlike the sounds one might hear in a machine shop. Cage assembled the sounds for *Cartridge Music* using chance or aleatoric principles in order to remove the control of the composer from the music. In this way, he believed, conventional meaning could no longer be associated between the composer and his choice of musical material.

It is the author's view, meaning is not inherent in sound itself. In other words, there is no evidence that musical sounds, or sounds of any kind, for that matter, contain meaning. Rather, as Walker (1984) argues:

> We can, and do, imbue almost any sound with specific cultural significance for reasons other than the presence of universal semantic properties. (p.2)

There are no universal meanings in sound, instead, a belief comes to be learnt and associated with a particular musical sound. According to Walker (1984):

> it must be concluded from available evidence that such intrinsic elements cannot be attributed to any musical phenomena. Therefore, all interpretations of music have to be learned through association of meanings with sounds. (p.17)

Affectation of Character

As was noted, one of the reasons music continues to be tied to education is because there exists the notion music can affect the character of the individual. This belief is based on the premise music and text can somehow influence the development of student character. Not only is music and text believed to be capable of transmitting beliefs it is also thought to be capable of affecting the moral development of students. This is why classroom music has been used to promote, among other things; order, discipline, good health, enlivenment of the soul, refinement, ennoblement, regulation of the emotions and social development. (Phillips, 1957, B.C. Ministry of Ed., 1985 and 1988 and Krebs, 1989).

In terms of musical text, "...with word sounds, each social group agrees on their fixed meanings..." (Walker, 1990, p.5). In terms of learning, it is believed students will learn of and be influenced by the content or message of musical text. In this way, a student may learn of and by influenced by moral concepts. Racial tolerance and equality, for example, are promoted through the lyrics of songs such as *Say It Loud, I'm Black and I'm Proud* by James Brown. As well, the horrors of war are expressed in the song *Vietnam*

Blues by John Lee Hooker. (Dunaway, 1987, p.48).

It is believed musical sounds themselves-sans lyrics-will alter the moral character or personality of people. For example, from 1545 to 1563 a council was held in Trent in northern Italy to bring about liturgical reforms. Among these reforms was the abolishment of certain musical characteristics. As Walker (1990) notes:

> These characteristics had mainly to do with sounds that were thought to induce physical rather than spiritual responses; in particular, rhythms thought more suitable for dancing were banned. (p.6)

Today, there remains the belief that, in terms of development, a person should only listen to certain musical sounds such as those deemed consonant in order that they become well-adjusted and consonant in their everyday life. The 1985 British Columbia elementary curriculum guide, for example, states: music students should demonstrate "...a sensitivity to rhythm, melody, dynamics, tempo, harmony, timbre, and mood in sound and music."(p.5). The music most often tied to the development of sensitivity in Western culture tends to be that which is consonant and avoids dissonance. Dissonance meaning, "An interval or chord which produces an agreeable or satisfactory effect, or an effect of repose." (Grout, 1973, p.730).

In terms of music's power to affect character, one of the main roles of music in the public school continues to be based upon the notion of moral training. That is, based upon the belief that if music can affect the character of young

people, the public school should use it to develop the morality of students. (Clingman, 1992). As well, it is believed good music results in good thought and behavior and the inverse is held to be true for bad; bad behavior often being associated with bad music but who and how does one go about deciding what is good and what is bad in music?

Members of each culture or society determine what is good and what is bad in music. In the West, for example, certain types of music, especially that associated with youth, has been frowned upon by, among others, parents. This, according to Lull (1987), is because "Adolescence, for many young people, is a time of turmoil and resistance"(p.152). Certain kinds of music become associated with the turmoil of youth. Often it is "The heavy beat, sexual lyrics, and aggressive tone of much of popular music (which) resonates with the emotional character of many adolescents..." (Lull, 1987, p.152).

Black dance music is a style of music which has come under criticism. For example, it was once

> singled out...as the most important influence on black youth in a television documentary presented by CBS in 1986 that lamented teenage pregnancy and the soaring number of unwed mothers. (Lull, 1987, p.155)

As well, Reggae is a style of dance music which has been frowned upon. Lull (1987) notes:

> Reggae is appreciated by young people in most countries, particularly those of the Third World. Still, it is seldom played on radio stations in the United States... (p.168)

Thus, certain kinds of youth music are viewed as socially incorrigible. (Lull, 1987, Grossberg, 1987).

Lull (1987) argues, audience members, (Western youth, for example), choose the cultural materials of their liking. They negotiate the meaning of music and find their own significance in it. The basis of such choice is complex but it is within a cultural context. As Walker (1990) notes, "Each musical culture produces its own special sounds..." (p.xiv). "The most important force in musical behavior and choice of sounds for music is culturally derived belief..." (Walker, 1990, p.2).

Just as there are conventions for the making of music in Western culture, there are rules for music making in other cultures. For example, in terms of the South African Venda tribe, John Blacking (1973) notes, "...their music-making and music-consuming activities...(are)...highly structured within the cultural context." (quoted in Lull, 1987, p.160). According to Blacking (1973):

> The rules of music making in a South African Venda tribe are not arbitrary. In order to create new Venda music you must be a Venda, sharing Venda social and cultural life from early childhood. (quoted in Lull, 1987, p.160)

In the West, just as the ancient Greeks believed music could evoke good and evil emotions, certain sounds and rhythms come to be associated with the promotion of good and evil feelings. Yet, the sounds and rhythms responsible vary over time, as does belief in their efficacy. The music one

generation views as subversive and counter to culture may be subsumed by following generations. Take rock music, for example, according to Grossberg (1987), there existed

> early efforts to eliminate rock by attacking radio practices (such as the payola hearings) to the latest efforts (by the Parents Music Resource Center) to 'control' the contents of rock and roll, (to) its rejection by some significant portion of the public... (p.181)

Today, though, rock music is an integral aspect of popular culture.

Moral Development

As was noted, one of the reasons music continues to be supported in the curriculum of the public school is because it has as its goal moral development.(*Year 2000*). The author believes moral development is a good thing but too narrow a focus for music in the curriculum. If there is no proof that sound itself (sans beliefs) can influence moral development, then, this should not be used as sole justification for music in the public school. That is, if there is no evidence that either the intrinsic or extrinsic properties of musical sound are responsible in any way for influencing the development of character, then, advocating that training in music can somehow affect character is at best a tenuous assumption upon which to build support for music in the curriculum. As well, the sole focus of character and moral development probably keeps music at the periphery of the curriculum for, as we have seen, importance tends to be reserved for those subjects in the curriculum which develop

the intellect.

In terms of moral development, Hamm (1989) argues, if children are to be morally educated they shall have to acquire an understanding of the moral rules and principles as well as act accordingly. In other words, "They must do the right thing as well as have the right reasons." (Hamm, 1989, p.134). This presupposes that they develop a knowledge and understanding of that what is considered morally right from that which is considered morally wrong and this is something which cannot be achieved through training.

According to Hamm (1989), training is different from education, in that, "one of the key ideas in understanding the notion 'training' is narrowness of focus." (p.34). Meaning, "...the simple nature of the achievement and to the paucity of rational understanding and cognitive implications required for mastery." (Hamm, 1989, p.34). In other words, we are trained to tie our shoelaces or sight-read music but "...we become educated persons by mastering understanding..." (Hamm, 1989, p.34). Morality, therefore, is not a necessary result of training in music but rather education in general and it is the authors view that morality is best achieved through an education which stresses knowledge and understanding.

Discipline and Self-Control

Hamm (1989) argues, the central notion of discipline is submission to rules. For example, the rules which relate to

the subject matter and to the manner in which one learns the subject matter. In terms of the rules which relate to the manner in which one learns the subject matter, Hamm (1989) notes, there are "...rules about concentration, about practice and review, about note-taking, and so on." (p.103). In terms of music, there are rules which relate to the subject matter including such things as the rules of counterpoint. The rules which constitute the construction of "A musical texture consisting predominantly of two or more simultaneous melodic lines, with or without additional material." (Grout, 1973, p.730).

Note-repetition is promoted in the public school as a way to memorize musical information, as well, it is promoted because it is believed to discipline the mind of the student and lead to greater self-control. This belief sees repetition as an aspect of training similar to that of an athlete. The more times a student performs the event, the more likely the student will remember and improve upon it in the future. Yet, repetitive training in music is not the best way to achieve discipline or self-control. Hamm (1989) argues, self-discipline is best achieved when it is self-imposed. The student imposes upon himself conformity to rules because he "...sees merit in the rules themselves...." (p.103).

According to Hamm (1989), self-discipline, which is self-imposed, is

> most desirable in education because it encourages autonomy...is more efficient in the achievement of learning, and develops those valuable states of mind characteristic of the educated person. (p.104)

Therefore, self-discipline and self-control are best promoted through an education which stresses developing an understanding of such.

Attempting to Develop Aesthetic Awareness, Appreciation and Understanding: A Comparison Between Traditional Methods and New Music of the 20th Century

There continues to be support for music in the public school because it is believed training in music will help students develop aesthetic awareness, appreciation and understanding. For example, the *Secondary Curriculum Guide* lists "Music as an aesthetic form..."(p.1). The *Putnam and Weir* report asks that students develop an "aesthetic sense" (quoted in Wright, 1975, p.9) and the *Secondary Curriculum Guide* speaks of students "developing aesthetically through...music." (p.7) and lists "Aesthetic Development" as one of the intended "Learning Outcomes." (p.8).

The problem with advocating aesthetic awareness, appreciation and understanding in music is that there is no single aesthetic. The educator must take into account that aesthetics is a Western notion made up of many things including: the meaning of music; what is and what is not music; the role of music in human life and its relevance to an understanding of human nature and history; the interpretation and appreciation of music; defining excellence and greatness in music; the relationship of music

to the other arts and to other related practices; the place or places of music in the system of reality; the psychology and sociology of musical composition; musical performance and listening; the history and natural history of musical practice; the physics of sound and the physiology of the ear; the analysis and description of particular works and traditions in music;, and from all other empirical enquiries; as well as establishing a rational basis for enjoyment and evaluation. (*Grove Dictionary,* 1980, p.120).

The music teacher must understand that notions of musical aesthetic vary over time. As Walker (1984) argues, this is due to "...changing criteria and standards of qualitative evaluations of aesthetic experience." (p.4). As a result, "Children in today's world are influenced by quite different aesthetic standards and functions..." than before. (Walker, 1984, p.7). This has important implications for music in education as classroom music no longer need only be concerned with such traditional notions as beauty and harmony. Sound can now be examined and appreciated for its own sake or what Walker (1990) calls "the autonomy of musical sound."

Today's students are more than able and willing to listen to music which is considered dissonant, difficult and challenging. Therefore, styles such as twentieth-century art music should not be excluded from the music class. Many students listen to types of music outside of the school

which are considered, by some, to be dissonant and challenging. These include: heavy metal, speed metal, thrash metal, punk, rap and hip hop. Educators who avoid bringing students into contact with music or ideas that do not conform to particular historical notions of harmony and beauty and instead, choose only to stress traditional skill-training, are depriving students of an opportunity to develop an appreciation and understanding of musical aesthetics.

The Content and Methods of Musical Skill-Training

Skill-training has always been the focus of music education in the public schools of British Columbia. In the 1800s, the training of vocal students was advocated in order that they learn sacred music. Although, secular instrumental music was eventually included with training in singing, the emphasis remained on developing skills. Today, one of the main reasons skill-training is emphasized in the public schools of British Columbia is so that students learn such musical styles as kindergarten, folk, jazz, popular, baroque and light classical music. In order to train students in these musical genres, several methodologies have been adopted.

Tonic Sol-Fa and Standard Notation

The emphasis on developing musical skills amongst students in the public schools of British Columbia has led educators over the last one hundred years to the instruction

books and methods of, among others, William Billings, Lowell Mason, Sarah Glover, John Curwen, and John Hullah. Although these methods do differ, they have one thing in common in that they are all based on some kind of tonic sol-fa. The problem with this approach is as Walker (1984) notes: tonic sol-fa is inadequate because

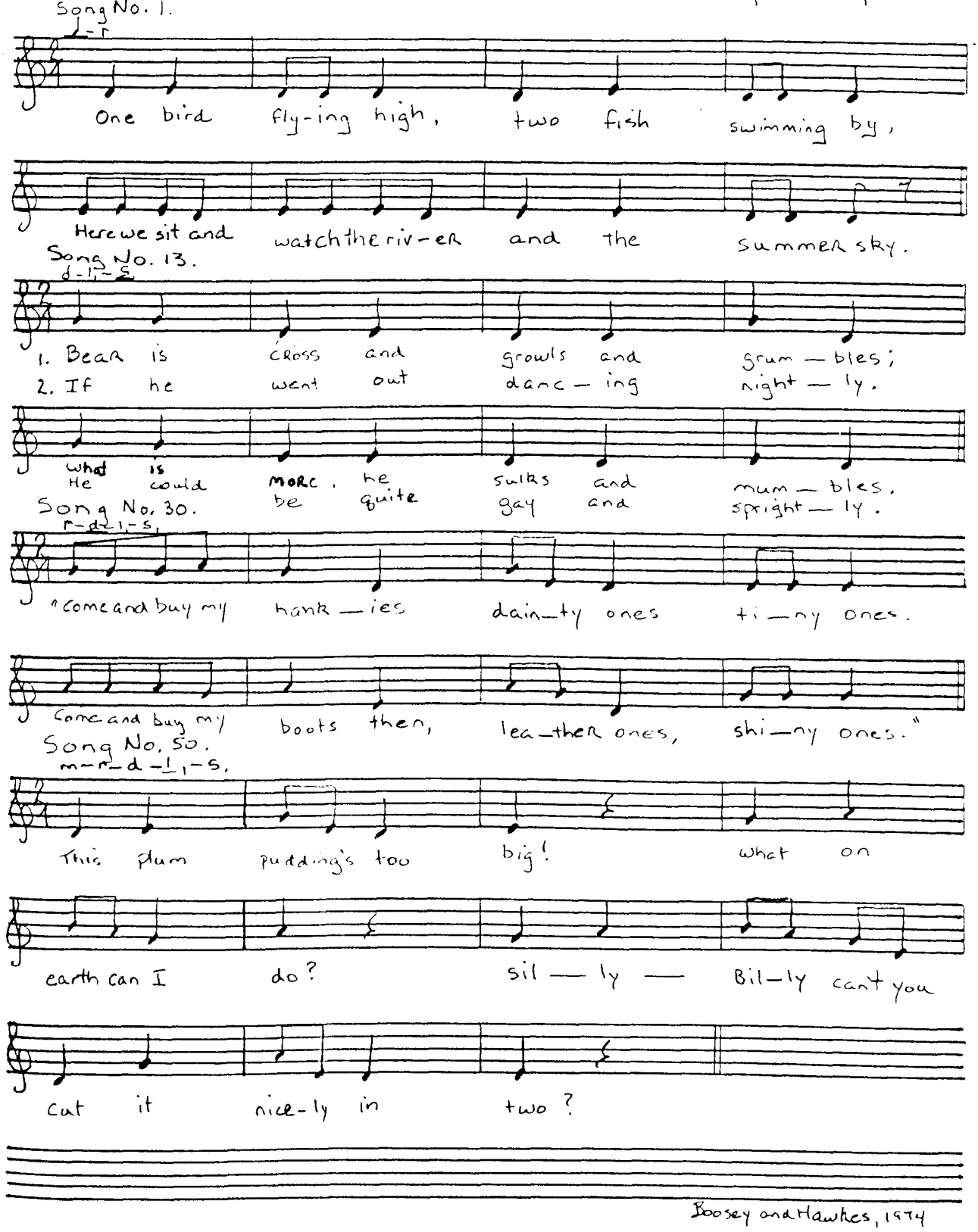
> one is locked into narrow musical style and content....The tonic sol-fa is limiting in that it becomes too cumbersome a language in sight singing vocal music of the twentieth century or earlier than the sixteenth. (p.44)

Therefore, if the goal of public school music is to be sight-singing, this, as Walker argues, is best achieved by learning to recognize musical intervals.

As was noted in chapter one, the Zoltan Kodaly method is widely used in the public schools of British Columbia. Essentially, the Kodaly method is based upon hand signals whereby syllables and pitch correspond with positions of the fingers of the hand. One of the problems with this approach is that it presupposes musicianship is based upon singing despite the obvious fact that many composers and performers do not sing. Another problem with the Kodaly method is that it employs bland pentatonic tunes which tend to be simple and dull. See Figure 2.1.

Tonic sol-fa is insufficient for exploring much of functional harmony. Rather than being able to move freely amongst various pitches, students are bound to particular scales (pentatonic, major and minor) and the syllables which

Figure 2.1 Four Excerpts from Zoltan Koday's "Fifty Nursery Songs."



accompany them. See Figure 2.2. While students may learn some scales, it is difficult for them to explore chromatic, harmonic and melodic minor scales as sol-fa is far too cumbersome. Yet they hear and appreciate equally complex musical phenomena in contemporary pop/rock music. As an example from late 19th century art music see Figure 2.3. Using tonic sol-fa, for instance, with Debussy's *Prelude to "The Afternoon of a Faun"* (1894) is far too complicated as the work contains chromaticism. See Figure 2.4. It is also difficult with tonic sol-fa to explore such things as chromatic modulation to distant keys. See Figure 2.4.

The Carl Orff method is also widely used in the public schools of British Columbia. Essentially, the Orff method is different from the Kodaly in that it is rhythmically based and stresses the development of motor skills through improvisation within fixed limits. One of the problems with the Orff method, is that it presupposes rhythm is the basis of music. While rhythm is one of the aspects of music, it is certainly not the basis. Some twentieth-century composers such as John Cage, for example, created works which had nothing to do whatsoever with traditional notions of rhythm.

In performing Cage's *4' 33''* for instance, the pianist opens the piano cover and then sits quietly and motionless at the piano in front of an audience without playing a note for four minutes and thirty three seconds. The only sounds heard are those of the environment including the anxious

Figure 2.2 Tonic Sol-fa with Pentatonic, Major and Minor Scales

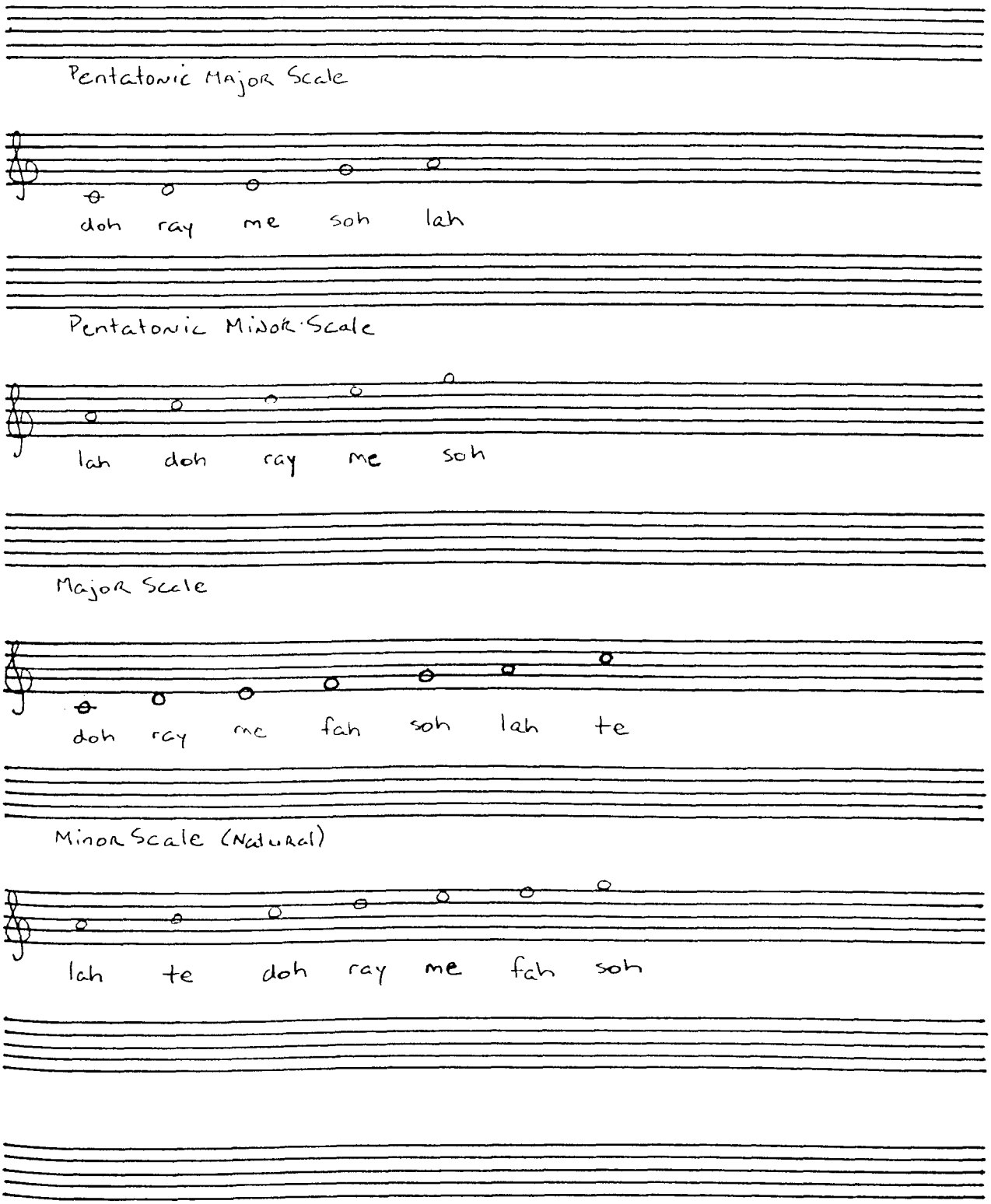
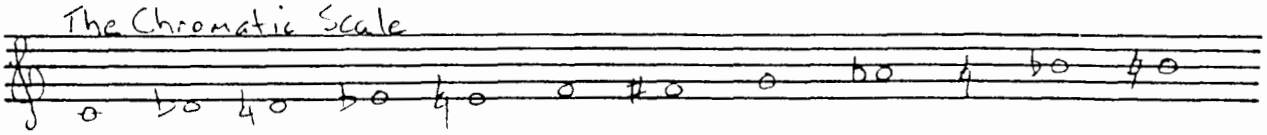


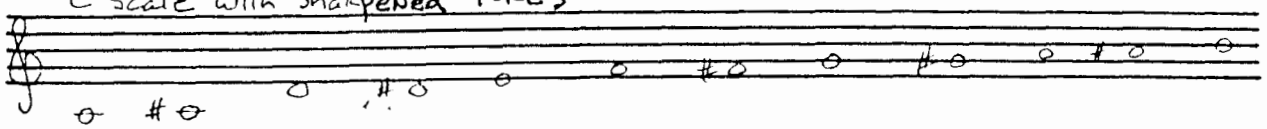
Figure 2.3 Tonic Sol-Fa with Chromatic, Harmonic and Melodic Minor Scale

The Chromatic Scale



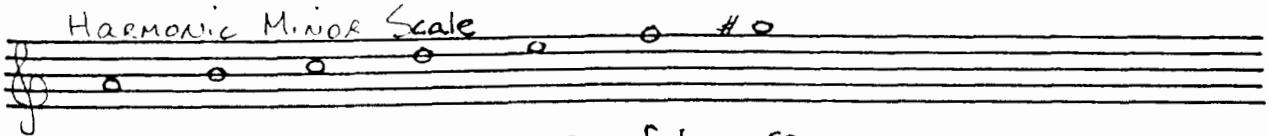
doh ra ray ma me fah fe soh la lah ta te

C scale with Sharpened Tones



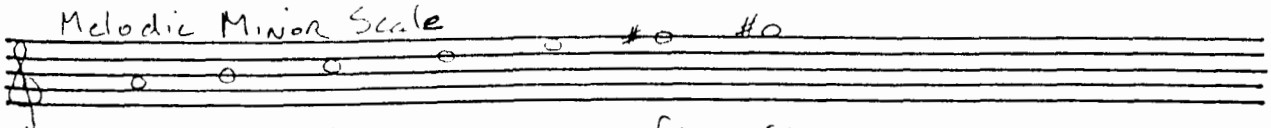
doh de ray re me fah fe soh se lah le te

Harmonic Minor Scale



lah te doh ray me fah se

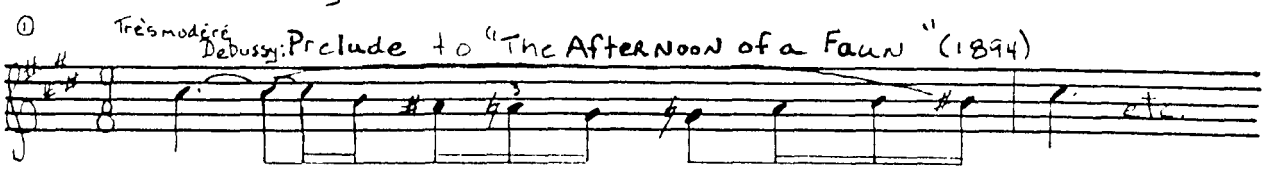
Melodic Minor Scale



lah te doh ray me fe se

Figure 2.4 a

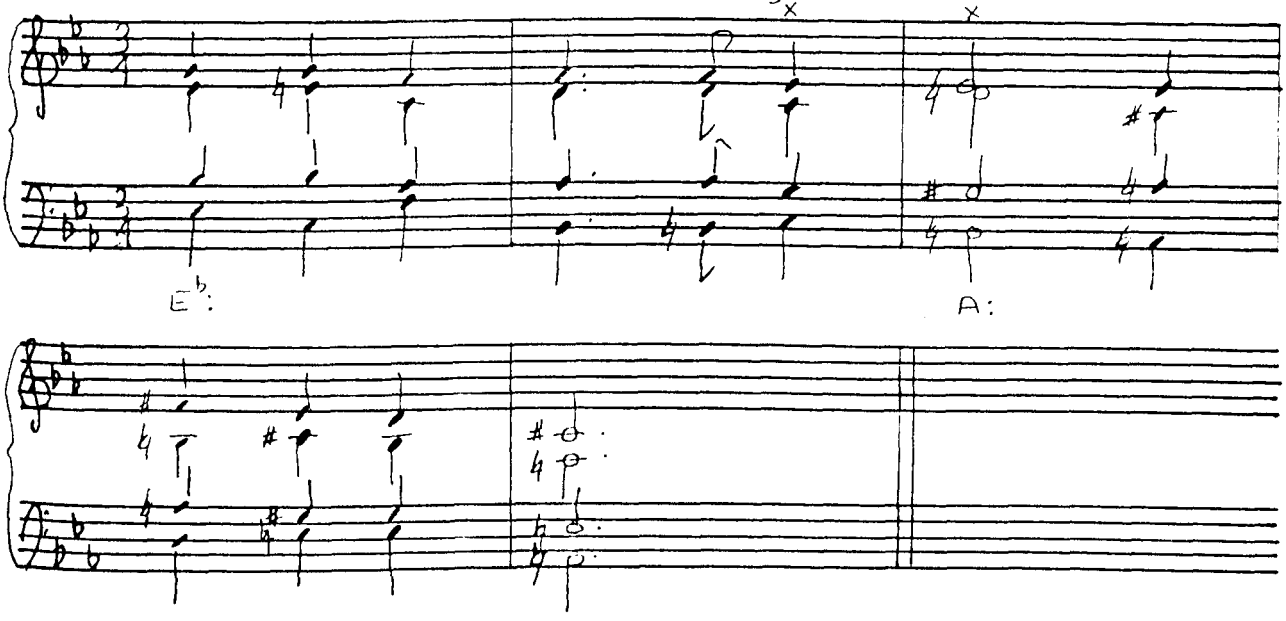
Debussy's chromaticism combined with tonic sol-fa



The Norton Scores, 1968, p. 1201.

Figure 2.4 b

Modulation to distant or remote key by means of Chromatic Modulation



Basic Principles of Music Theory, Joseph Braye, 1965, p. 237.

crowd. According to Campana (1989), Cage's composition is

> supported by a rhythmic structure based upon real time, albeit greatly simplified....The performer entering and leaving the stage represents the beginning and end of the work, and action involved in opening and closing the keyboard cover distinguish the separate movements within the structure. (p.237)

This moves the concept of rhythm into the intellectual plane and away from the physical.

The Orff method presupposes knowledge moves from that which is simple to that which is more difficult. The analogy being from primitive xylophones to more complicated orchestral instruments. Beliefs such as these tend to deprive students of an opportunity to develop an understanding of the concepts underlying music as students rarely get beyond the playing of simple instruments. Beliefs such as these also do little to promote the development of student intellect as there is no evidence children cannot learn about orchestral instruments without knowing how to play them. For example, students do not have to learn how to play a brass or stringed instrument in order that they learn how they sound as recordings can be used for this. As well, students do not have to learn how to perform on woodwind instruments in order to understand the role of woodwind instruments in an orchestra.

In terms of twentieth-century music, both the Kodaly and Orff methods have major shortcomings. Both the Orff and Kodaly methods are insufficient for exploring many of the

interesting developments in Western musical art such as impressionism. Musical impressionism, most frequently associated with Claude-Achille Debussy (1862-1918) and Maurice Ravel (1875-1937), was a movement inspired by French literature and visual art. The ideas of the symbolist poets Baudelaire (1821-1867) and Rimbaud (1854-1891) and the impressionist painters Edouard Manet (1832-1883) and Claude Monet (1840-1926) all played influence upon Debussy's choice to free music from the rules of convention. For one thing, Debussy sought to absolve the role of music as a servant of poetry and rhetoric, in that, he believed musical sounds did not have to underpin drama or text. Sometimes, he believed, musical sounds did not have to underpin, represent, or express anything at all. Accordingly, musical expression with Debussy is subtle; hinted at but seldom stated.

As with symbolist poetry, Debussy wanted music to move away from literal meaning and representation and move more towards the mood or impression of an object, person or emotion. According to Walker (1990), Debussy

> paralleled in music the notion in symbolist poetry of using words for their individual metaphoric and linguistic content rather than their structural function within sentences or phrases... (p.152)

In order to explore sound, therefore, Debussy had to free music from the rules of functional harmony and melody as it had become codified. In so doing, Debussy was able to create music which both represented nothing at all or only hinted at moods and atmospheres.

According to Walker (1990), Debussy

> paralleled in music the developments of the so-called impressionist painters, who deemed visual elements as important for their own sake. (p.152)

Debussy believed musical sound was important for its own sake and this fuelled his search for new sounds. He began by disregarding the notion that chords or melodies were to be constructed according to certain rules. He added notes to chords, juxtaposed different chords and employed parallel fifths. According to Machlis (1961):

> Classical harmony specifically forbade the parallel movement of certain intervals such as octaves and fifths on the ground that this weakened the independent movement of the voice parts....Debussy, contrariwise, used parallel fifths freely, therewith departing from the classic romantic sound. (p.120)

Debussy's search for new sonorities also included the emulation of sounds from nature and other cultures, as well as the use of folk melodies and exotic scales.

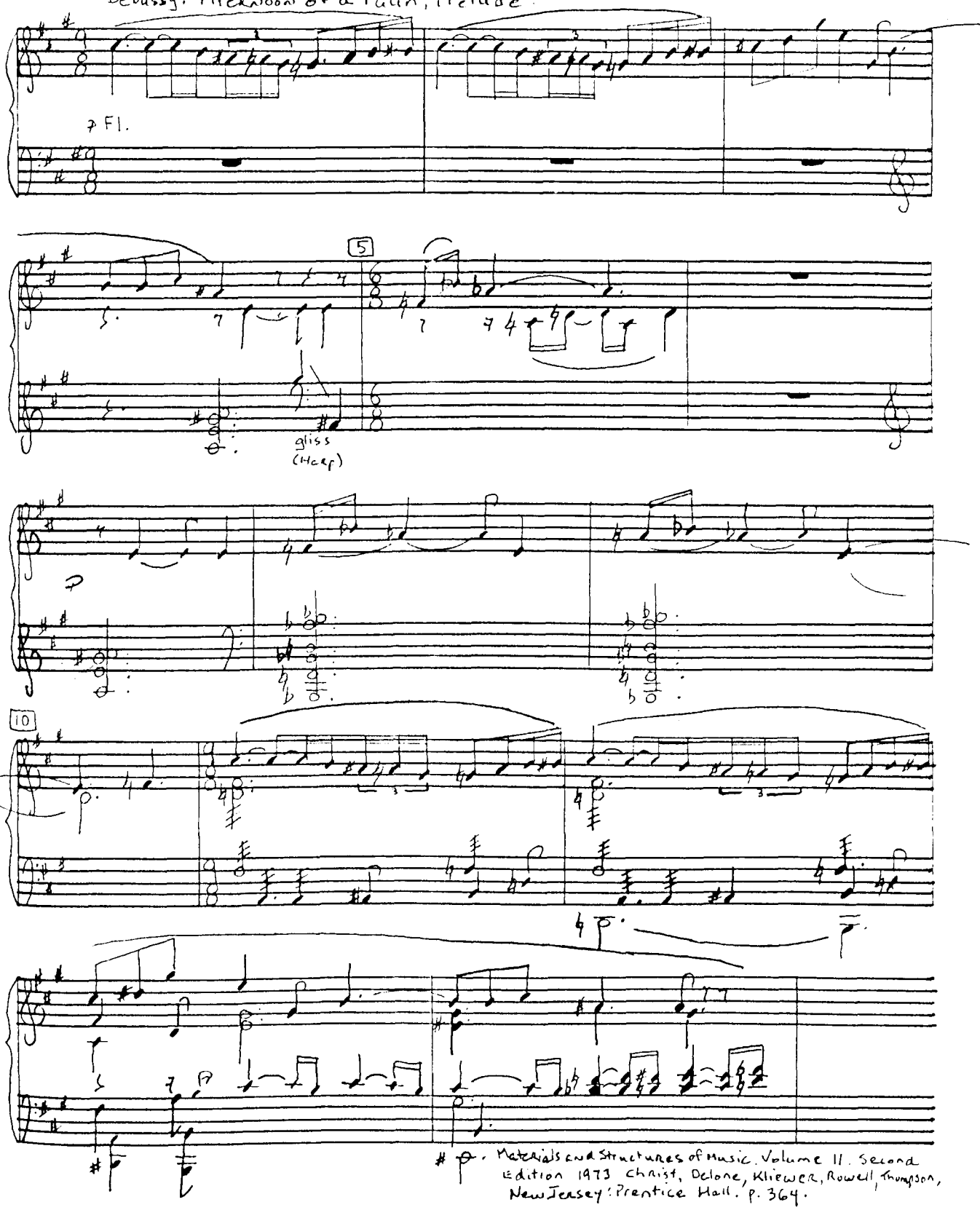
The Kodaly method is a traditional methodology designed for the training of singers while many impressionist musical techniques tend to shun convention. The music of Debussy contains "tritones in melodic material" and according to Christ (1973):

> melodic and harmonic activity which deny traditional tonal relationships. Unstable chords are used in such a way that key feeling is almost completely avoided, and melodic patterns and figurations weave a trail of melody which avoids clear tonality-defining cadences in favor of formal continuity. (pp.346 and 364) See Figure 2.5.

Therefore, the Kodaly methodology is simply not equipped to

Figure 2.5 Debussy's Movement Away from Traditional Melody and Harmony

Debussy: Afternoon of a Faun, Prelude



Materials and Structures of Music. Volume II. Second Edition 1973 Christ, Delone, Kliewer, Rowell, Thompson, New Jersey: Prentice Hall. p. 364.

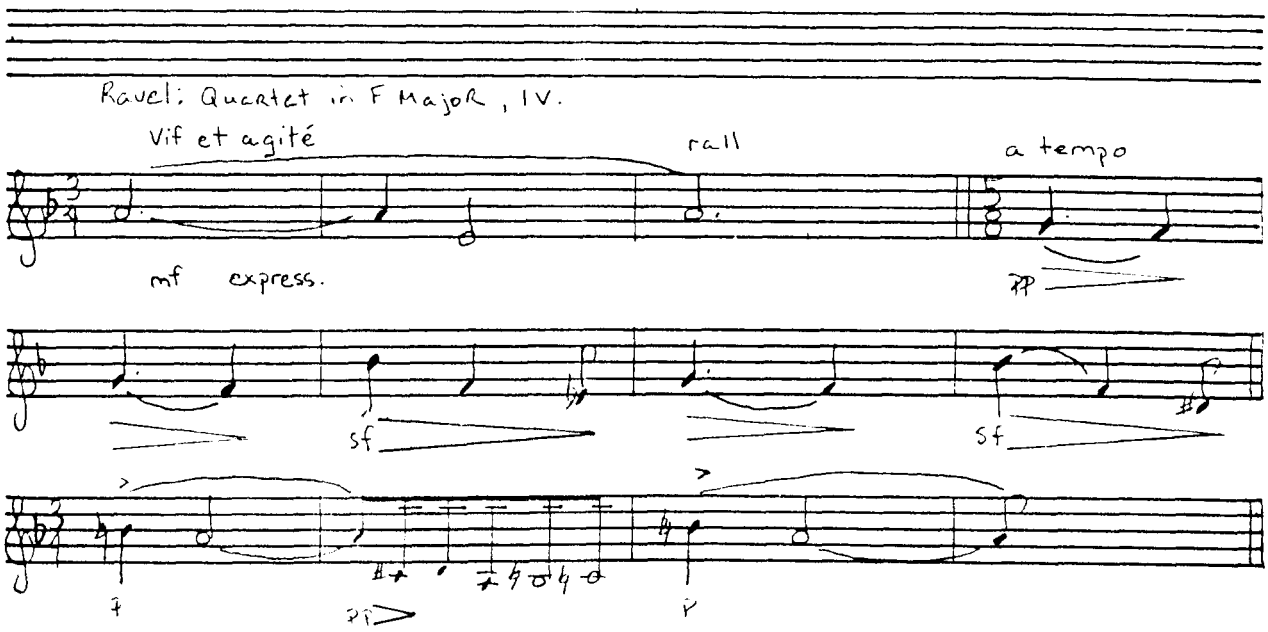
handle techniques such as this.

The Orff approach is based on the learning of music through rhythm whereas such impressionist composers such as Ravel did away with regular rhythm employing instead "Complex (asymmetric) meters..." (Christ, 1973, p.369). For example, see Figure 2.6.

As well as those of Ravel and Debussy, there are many other twentieth-century musical techniques which are beyond the realm of the Orff and Kodaly methodologies. From the musical chromaticism and ambiguity of tonal centers found in the music of Bartok, Messiaen, and Stravinsky, to the atonality of Schoenberg and Webern. All have no place in Orff or Kodaly.

Expressionistic composers, such as Arnold Schoenberg (1874-1951) and his pupils, Alban Berg (1885-1935) and Anton Webern (1883-1945), wanted to move away from traditional notions of dissonance and consonance. Schoenberg, as with Debussy, wanted the freedom to combine whatever tones desired and this is what he referred to when he spoke of the "emancipation of the dissonance." In other words, "...the freedom to use any combination of tones whatsoever as a chord not requiring resolution." (Grout, 1973, p.704). Schoenberg's search for new sounds led him to employ techniques such as *Sprechstimme*, that is, speaking voice without fixed pitch; found in his composition *Pierrot Lunaire*, (1912). As well, atonality (nontonal) or

Figure 2.6 Ravel's Use of Complex (Asymmetrical) Meters



Christ, W., Materials and Structures of Music, 1973. P. 369.

pantonality (all tonalities) can be found in Schoenberg's *Five Orchestral Pieces*, (1909).

The search for new timbres led many twentieth-century composers to develop new musical techniques. For instance, composers such as Yannis Xenakis, Krzysztof Penderecki, and Luigi Nono experimented with

> a great many hitherto unexploited uses of conventional instruments: for example, new harmonics and increased use of the flutter-tongue technique and other special effects on wind instruments; glissandos; dense chromatic clusters or 'bands' of sound for strings or voices....spoken and whispered sounds (words, syllables, letters, noises). (Grout, 1973, pp.717-718) (For example, see Penderecki's, *In Memory*)

New sonorities were also sought out by composers such as Gyorgi Ligeti and John Cage. Ligeti, in his *Atmospheres*, *Requiem*, and *Lux Aeterna* made use of cluster chords; chords comprised of minor second intervals. While, composers such as John Cage experimented with sounds by "preparing the piano." Influenced by percussion instruments and Henry Cowell (1897-1965), (a pianist producing sounds from inside the piano), Margaret Leng Tan said, Cage

> hit upon the idea of objects wedged between the strings of a grand piano (often at predetermined points) acting as mutes which drastically altered the timbral characteristics of the instrument. In so doing, Cage had transformed the piano into 'a percussion ensemble under the control of a single player'. (quoted in Flemming and Duckworth, 1989, p.39)

Prepared piano can be found in Cage's *Sonatas and Interludes* (1946-48).

A difference in attitude towards composition arose in

the twentieth-century which led composers to two different schools of thought. On the one hand, composers such as John Cage, influenced by Zen Buddhism, moved towards the freedom of musical events. In other words, less control by the composer over musical sounds and events. On the other hand, composers such as Schoenberg, Stravinsky, Webern, Berg, Boulez, Messiaen and Stockhausen moved towards total control over every musical detail. Hence, the development of techniques such as serialism concerned with the detailed ordering of musical sounds.

There is not enough room in a thesis such as this to go into detail about serial techniques suffice to say that there are a great many of them as each composer developed his own method. In terms of integral serialism:

> Basically, the idea is to submit the four very basic elements of musical sound-pitch, rhythm, dynamics, and timbre-to organization by means of a number series. Each element in the four would have a number series of its own, and its extent would depend upon the number of items in the element. (Walker, 1990, p. 166)

For example, the pitches of the chromatic scale (or any scale for that matter) can be numbered from 1 to 12. The various note-values (whole-note, half-note, etc.), can be numbered from 1 through 7. The dynamics, *ppp, pp, p, mp, mf, f, ff, fff,* can be numbered from 1 to 8 and the orchestral instruments, such as brass, woodwinds, strings, percussion, piano, basses, etc., can be numbered 1 through 6. The composer then subjects these four number systems to

organization by means of other number systems which determine such things as what, how and when sounds and silences are to occur. For examples of serial techniques see Karlheinz Stockhausen's *Piano Piece No. 1* (1952-1953) and Walker (1990).

Indeterminacy, an idea pioneered first in visual art by Robert Rauschenberg, was adopted by John Cage in regards to musical composition. Indeterminacy, for Cage, meant less control by the composer and more freedom for the performer and the music. The idea being that every aspect of music and performance could be based on some kind of chance operation to be determined by something as random as rolling dice or by the I Ching. That is, "...the Chinese oracular guide from which answers are obtained by throwing forty-nine yarrow sticks or tossing three coins." (Tan, 1989, p.42). As a result, the occurrence of sounds and silence can be arbitrary with no two performances ever sounding alike. According to Campana (1989), Cage's composition *4' 33''* is

> indeterminacy in a crystaline form. Sound materials consist of the environmental sounds that transpire during the work's performance and each person's interpretation of these sounds becomes the work. (p.237)

Indeterminancy and the movement away from absolute control also helped pave the way for the development of new types of music notation. According to Grout (1973), scores ranged

> all the way from fragments of conventional staff-notes through purely graphic suggestions of

> melodic curves, dynamic ranges, rhythms, and the like to even more impressionistic and meager directives. (p.723)

(For examples of graphic notation see *Creative Music Education*, 1976, by R. Murray Schafer).

The composer Edgard Varese (1883-1965) did not write music according to chance operations but he did play a key role in the movement from acoustically produced sounds to those that were electronically produced. Varese's search for new timbres was influenced by, among other things, science and visual art. His work *Ionisation* (1933), for example, was conceived of as blocks of sound and was written for all kinds of percussion instruments including sirens, brake-drums, chains and anvils. The result was a departure from traditionally pitched sounds. His later works, such as *Deserts* (1954) and *Poeme electronique* (1958) also made use of new sound sources including those that were electronically controlled and generated.

Varese's pioneering work in electronic sound was a major influence on the development of Musique Concrete. According to Grout (1973), in the Musique Concrete of the early fifties:

> the raw material consisted of musical tones or other natural sounds which after being transformed in various ways by electronic means were assembled on tape to be played back. (p.719)

Notable Musique Concrete compositions constructed in this manner included *Symphonie pour un Homme Seul* (1949) by Pierre Schaeffer and Pierre Henri, as well as *Dripsody*

(1955) by Hugh LeCaine.

The techniques of Musique Concrete led composers to realize they could create sounds which had never been heard before and that no performer could ever hope to play. In terms of possibilities, this was determinacy and indeterminacy at their greatest. In other words, the notion that everything or nothing could be left to chance. Eventually, composers began to create tape works whereby natural sounds were replaced or supplemented by sounds generated electronically in the studio. Stockhausen, for example, "...produced the first published score of electronic music in his *Electronic Studies* (1953-54)." (Machlis, 1961, p.429). As well, in *Gesang der Jungline* (1956), Stockhausen created a tape collage of both acoustic (e.g., a boy's singing voice) and electronically produced sounds.

According to Truax (1978), "Electronic equipment which can synthesize sound is often grouped into large units called Sound SYNTHESIZERs." "Before the advent of the synthesizer in the early 1960's, a body of techniques called *classical studio techniques* developed other methods of sound synthesis..."(p.128). For example, techniques such as additive and subtractive synthesis, whereby, sounds are constructed by adding such things as sidebands or simplified through filtering. Machines which can do this, called analog synthesizers, became popular in the sixties.

By the late seventies, a new type of music synthesizer emerged called a *digital sound synthesizer*. According to Truax (1978), digital sound synthesis is a process whereby sounds are produced by means of a computer. In other words:

> The computer is programmed to generate numbers or samples which describe the pressure function of the desired sound. These numbers are converted into voltage steps by a digital-to-analog converter (DAC), and subsequently smoothed into a continuous signal by a low-pass filter. (p.128)

The use of digital, as well as analog synthesizers combined with that of acoustic sounds, either live or on tape, came to be called electroacoustic music. In other words, a mixture of electronic and acoustic music. Using electroacoustic techniques, composers such as Mario Davidovsky juxtaposed sounds in a way that had never been done before. In *Synchronisms No.5* (1969) for example, Davidovsky combined random atonal synthesizer sounds with that of percussion instruments and an analog delay to stunning effect. Other composers such as Joel Chadabe united the sound of stringed instruments with that of the synthesizer in his *Echoes* (1972) and John Chowning's *Phone* (1979) was a major breakthrough in terms of f.m. (frequency modulation) digital synthesis.

Today, composers such as Martin Bartlett in Canada are working on computer music programs which attempt to simulate artificial intelligence. Bartlett works with interactive synthesis whereby the performer of an acoustic instrument triggers a computer which in turn creates sounds. What is

interesting, in terms of Bartlett's approach, is that the computer makes decisions; decisions based upon such things as proximity. For example, if the midi input data can be interpreted as two different notes, the computer will choose which note will sound based upon generating logarithms. Many of today's composers also write their own software programs including Barry Truax who is currently a professor, along with Bartlett, at Simon Fraser University.

Due to the search for new sounds which arose in the twentieth century, the discovery of Musique Concrete, as well as synthesis, the traditional Western notion of pitch changed. In other words:

> the very conception of distinct pitches and intervals (including the octave itself) came to be supplemented by the conception of pitch as a *continuum*, an unbroken range of sound from the lowest to the highest audible frequencies, without distinguishing separate tones of fixed pitch. (Grout, 1973, p.720)

From the above survey of new developments in this century, it can confidently be claimed that tonic sol-fa is incapable of exploring much of twentieth century music and ideas thus, effectively dissenfranchising children and the teachers who use it. From functional harmony to serialism, from Musique Concrete to computer music, from discreet pitches to a continuum of complex sounds, tonic sol-fa is not designed for any of this. Therefore, it can be said, tonic sol-fa is limiting and restricts the amount and variety of music and ideas which can be explored in the

music class. As well, it takes up much of classroom time and as the greatest portion of classroom time is spent learning the complexities of the system of tonic sol-fa names, there can be little time left to explore any of the aforementioned techniques.

Standard staff notation also presents problems in terms of music education. For one thing, traditional staff notation is insufficient for dealing with many types of music from other cultures. For example, there is no absolute equivalence between the pitches of the metallophones in an Indonesian gamelan and those used in standard staff notation. When using staff notation to notate the pitches of the metallophones, one is forced to put (+) and (-) underneath the notes in order to notate their pitch but this is only a rough approximation. Further complications arise due to the fact that "...individual pitches...are not identical between any two gamelans." (Gislason, 1991, p.4). According to Gislason (1991):

> Gamelans are tuned according to a system that is not easily described in Western terms. For one thing, the tuning of each Gamelan is unique, and creates...'its own individual tonal world'....the individual instruments of which a gamelan is composed are only intended to be played with each other: they have little use outside of the particular ensemble for which they were manufactured. Consequently, the concept of absolute pitch is unknown in gamelan music. (p.4)

Traditional staff notation is also not sufficient for dealing with the music of many aboriginal cultures. Take for example, the music of the Pacific Northwest Indian and the

Australian aboriginals. Individuals from these societies believe that songs are given to them by spirits of the spirit world. That each person receives his or her own private song from sources such as nature or the deceased through a dream or vision. As Walker (1990) notes, there is a "...great deal of flexibility in the interpretation of precise details." (p.190). The performance of these songs is not arbitrary, but according to Walker (1990), problems arise; "One cannot be sure...that the practices perceived in dreams can be accurately reproduced, or even that they are capable of being reproduced." (p.190). Walker (1990) argues that practices such as these

> are far removed from comprising an abstract, systematic theory that determines the organization and use of such elements as melody and rhythm in musical practice. (p.193)

Essentially, staff notation enables us to classify certain elements of Western music such as melody, harmony and rhythm while most aboriginal cultures "...have neither written theory nor systems of musical notation..."(Walker, 1990, p.194). One finds, though, that Western theorists continually attempt to find similarities between Western pitch and tuning and aboriginal scales and intervals. Some theorists even argue that aboriginal cultures make use of the same musical intervals and scales as that of the Western tradition including the tempered pentatonic. (Walker, 1990, pp.197-199). Other theorists disagree pointing out that variation occurs in terms of "...'microtonal pitch migration

(as a continuous process in the song) and internalized variations of sections'."(Walker, 1990, p.199). To further complicate things, some aboriginal cultures even make use of a "...'migratory note, without a fixed pitch'." (Walker, 1990, p.199). Therefore, if there is a desire to notate aboriginal music in the classroom it is best to use some kind of modified notation but as Walker (1990) notes, "...the use of Western notation, even with modifications... does obscure some of the nuances of tuning." (p.200).

By choosing to concentrate all of their teaching energies on the skill-based Western tradition of staff notation, public school music teachers are failing to take full advantage of opportunities to explore the music and beliefs of other cultures. As with tonic sol-fa, traditional staff notation is time consuming and difficult for most students to learn which means there can be little time left for developing a knowledge and understanding of the music of other cultures.

It is not necessary for students to learn to read music in order that they understand it. For example, many rock composers do not read or write music. As well, with the exception of transcriptions, the nature of improvisation is such that it too is neither read nor written and yet, improvisation has always been an aspect of music. Western musical history, for example, includes Bach, Chopin and Mozart, all of whom were great improvisors.

In the twentieth-century, some composers of art music altered or ignored the tradition of staff notation altogether. Composers such as R. Murray Schafer, Earle Brown, Gyorgi Ligeti, Karlheinz Stockhausen, Luciano Berio, John Cage and Krzystof Penderecki, among others, created notation whereby graphic symbols are used to depict sounds. For example, in his *String Quartet, no. 2.* (1961) and *Threnody: To the Victims of Hiroshima* (1961), Penderecki used long lines to represent sustained notes of no fixed pitch. According to R. Murray Schafer (1976), composers use graphic symbols because they represent a more approximate method which lend themself to the exploration of a wider variety of sounds and ideas than that of traditional staff notation.

The Scientific Model for Music Education

As was noted in chapter one, after the fifties the necessity of music education in the public schools of British Columbia was called into question. The 1960 *Chant Report* for public school education in British Columbia, for example, does not even mention music as a subject in the curriculum. In an attempt to secure respectability, legitimacy and funding, music educators in British Columbia adopted the scientific model for music education.

The scientific model for music education, a model rooted in skill-training, is based upon theories of education which came about as a result of, among other

things, Bloom's *Taxonomy of Educational Objectives* (1956). In the fifties, a committee of college and university examiners in the USA, headed by Benjamin S. Bloom, held a series of conferences in order to create a more scientific basis for education. The result was two handbooks which classified as many educational objectives as Bloom and his colleagues could think of as well as including ways of testing to meet objectives. Teachers were to use these handbooks in the building of curriculum and in the construction of tests to see if educational goals were being achieved.

One of the problems with Bloom's *Taxonomy* is, its objectives are insufficient for music education, in that, they are based mainly on the acquisition of facts and skills. For example, it is widely held that a music student should know when Beethoven wrote his *Fifth Symphony* (1807) but not that Beethoven believed "...the association of words with music was of minor importance." (Lang, 1941, p.754). In terms of the Western musical tradition, this was a major breakthrough, in that, instrumental music was finally divorcing itself from being a servant of text. Although, in terms of convention, Beethoven, as with Wagner, continued to use musical sounds to represent and conjure up feelings and emotions.

Bloom's *Taxonomy* contains a blueprint of educational objectives based on facts and skills which many teachers do

not deviate from. Instructors begin first by setting their educational objectives. For instance, an educational objective might be: students are to learn the first rule of counterpoint. According to Fux (1725), the first rule of counterpoint is "From one perfect consonance to another perfect consonance one must proceed in contrary or oblique motion."(quoted in Mann, 1965, p.22). For example, see Figure 2.7.

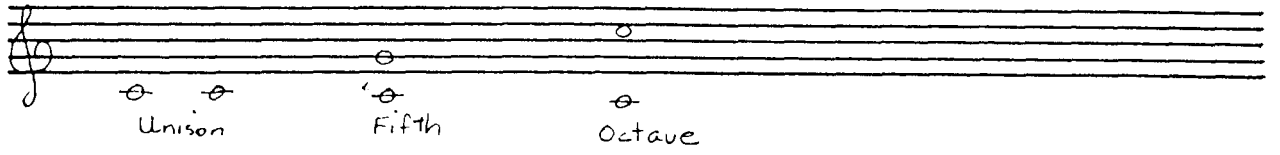
To test to see if students had learned Fux's first rule of counterpoint, teachers ask students to list and demonstrate it. The problem with this practice is, hardly any music is based on the rules of counterpoint and even Fux's contemporaries did not use it. As well, as we have seen, composers such as Debussy broke from many of the rules of traditional harmony and counterpoint. Note: Fux's rules of counterpoint were later used as organizing principles by Schoenberg (in his *Harmonielehre*, 1911) as well as other serial composers.

As was noted, the scientific model for music education tends to stress the acquisition of rules. Music educators believe that in order for students to learn music they had to acquire an implicit knowledge of the rules. The rules for combining notes to form musical phrases based on such things as functional harmony, voice-leading, counterpoint and so on. This gave rise to the notion of pre-packaged segments of learning in the form of simple lessons. Essentially, pre-

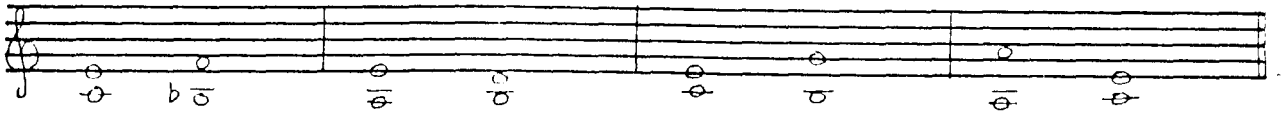
Figure 2.7 Fux's First Rule of Counterpoint:

"From one perfect consonance to another perfect consonance one must proceed in contrary or oblique motion."

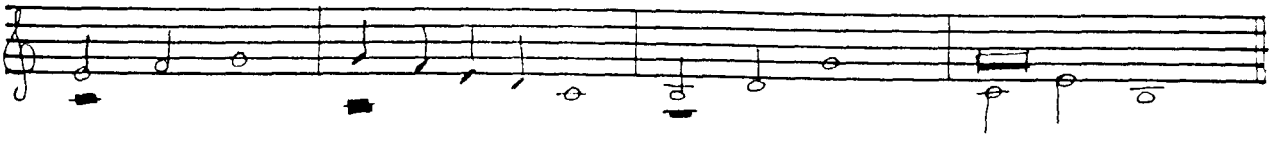
Perfect Consonances



Contrary Motion results when one part ascends by step or skip and the other descends – OR vice versa; e.g.:



Oblique Motion results when one part moves by step or skip while the other remains stationary, as seen in the examples:



packaged music lessons are designed to be simple and factual because it is believed children should not learn music and musical concepts which are beyond the level of their musical and intellectual abilities. Rather, children should learn such things as simple abstract musical symbols before they learn difficult ones. This helped perpetuate the notion that public school students should be skill-trained to read and notate simple music.

Music educators such as Gertrud Meyer-Denkmann (1977) argue, it "...is a widespread myth that children can only 'understand' music if they have been given theoretical grounding." (quoted in Walker, 1984, p.129). In other words, methodologies which stress the teaching of musical rules or abstract musical symbols to children before they learn musical concepts and develop an understanding of music are flawed. As Walker (1984) argues:

> Common sense, let alone the work of many eminent investigators (Piaget for example), should tell us that the use of abstract symbols before concepts are experienced and understood is pointless.(p.50)

Walker (1984) adds:

> How many adults with no more than grade 8 mathematics could cope with calculus by going straight to the abstract symbols without adequate preparation? In fact, how many adults can go straight to the abstract symbols of music in this way? (p.50)

The main problem with Bloom's *Taxonomy* is that it creates a hierarchy which is exclusive. In other words, it provides hurdles as it is believed students should only

progress from simple skills to those that are more difficult in a step-wise manner. Moving only to the next skill level once mastery of the previous has taken place. This creates problems in terms of musical performance as students can only participate if their skill level matches that of the music, the result is exclusivity.

Methodologies, such as the Orff and Kodaly which offer step-wise training in musical skills, simple games, simple songs, and the playing of simple rhythms on such things as percussion instruments may be hindering the child's learning. As Meyer-Denkmann (1977) argues:

> Too much emphasis on singing and musical games can mean that the child's learning is impeded. To offer him only an educational experience which is labelled 'suitable for children' underestimates his aptitude. (quoted in Walker, 1984, p.129)

As a result of approaches such as these, is it little wonder that some students find classroom music neither musically nor intellectually challenging?

A History of Reticence to Change

Public school music has a history of remaining somewhat elusive, conservative and reticent to change. This tradition prevents music from staying abreast of new musical and educational developments. For example, as was noted, there remained an emphasis on vocal music in the public school classrooms of British Columbia up until the end of the nineteenth century even though instrumental music had always been performed in public. It took public performances, the

development of the radio and phonograph, as well as public and private pressure to eventually get instrumental music added as a regular subject of study in the public school.

There have always been those in the public school who have been reluctant to add new styles of music to classroom repertoire. For example, in Canada "...the most popular recorded music of the first decades of the century was a mixture of classics, ballads, and military band music." (McGee, 1985, p.84). Yet, much of this music was not heard or performed in the public school classrooms of British Columbia. By the 1940s, other styles of music including gospel, ragtime and jazz were being heard with continuing frequency on the airwaves. In response to the continued diversification of public musical interests, public schools were eventually forced to add these and other styles to classroom repertoires.

After the 1940s, due to an increase in affordable technology and public demand, there was a growth in the amount and style of public music available for private consumption. Music became readily available due to such developments as radio and was listened to in the privacy of one's own home. People of all ages had increased access to music and were offered more styles of music and musical performers than in the past. For example:

> Both radio and phonograph gave impetus to popular music performed by professional ensembles-the so-called 'dance bands' or 'swing bands' that played for listening and dancing. (McGee, 1985, p.85)

Listeners were drawn with increasing frequency to new styles such as these.

After the 1950s, rock 'n' roll and other styles of music became available to the Canadian public through a proliferation of radio, phonograph, magnetic tape, theatre and film. More and more young people searched, found and were receptive to a particular artist, musical group, style of music, or sound which they believed best represented their beliefs and lifestyle. Groups of people gave rise to particular styles of music and the music and ideas of particular artists dictated the beliefs and lifestyles of groups of people. For example, the folk and protest songs of singers such as Woody Guthrie and Pete Seeger were accredited with spurring union organizing in the early and middle parts of this century. (Dunaway, 1987, p.44).

Not only did the public have increased access to music due to such developments as radio and recording but they also had influence over output. Outside of the public school many students were listening to their own music twenty four hours a day if they so desired. As a result, the music created became dependent on the buying preference of the public. The increase in consumer population and demand meant that the public had an influence in the production of music. Among other things, the public influenced the amount and style of music produced. Take for example, the music of Elvis Presley:

> His commercial potential was first realized by his local independent label, Sun, but once his potential was realized (and his television appearances proved to the doubters that he could, indeed, be a national youth star) then he was quickly used as a way of selling records, cinema seats, magazines, merchandise, and advertising time on radio... (Frith, 1987, p.66)

Due to the growth of popular music, its accessibility and the burgeoning youth market, trends such as dance crazes were created. As well, music became tied to other industries such as television and fashion. As a result, youth came to desire certain styles of music and ideas. It was not that they had became sophisticated listeners but rather they were more informed, aware and influential consumers of music.

After the 1950s and '60s, many music teachers of the public school decided not to update their classroom repertoire with the new popular music of youth. This was because much of this music was frowned upon by society. For example, music such as jazz, rock 'n' roll and rock music was perceived by many of the older generation to be threatening to social order. Music, such as that mentioned, especially rhythms and text, were labelled many things including: simplistic, banal, overtly sexual, offensive, and confrontational. The older generation believed that this music was morally wrong and there was fear that it would corrupt the minds of youth. On the other hand, young people believed it either questioned traditional notions and values or was simply irreverent. Either way, classroom teachers were reluctant to include it in the curriculum of the public

school. Most music teachers in the public school continued on with the old repertoires avoiding the new music of youth altogether in the hope that if they ignored it it would go away. But many students were no longer interested in simply learning the old classics. Instead, they wanted to be involved in the music and ideas of their own generation.

After the 1950s and '60s other forms of music and musical beliefs emerged which were also not readily accepted in public school music classrooms. These included Western art or new music and included the music and ideas of composers such as Arnold Schoenberg, Alban Berg, Anton Webern, Igor Stravinsky, Yannis Xenakis, Krzysztof Penderecki, Edgard Varese, Pierre Boulez, Karlheinz Stockhausen, Milton Babbit, Henry Cowell and John Cage, to name but a few. Composers such as these should have been included in music classrooms as they played pivotal roles in the "...progressive breakup of the system of music which had prevailed over the preceding two hundred years..."(Grout, 1973, pp.714-715). Consequently, it may have been that these composers were not included in public school music as a result of their actions.

Many of the composers mentioned questioned, or did away with, traditional musical convention altogether. For example, Schoenberg "...with his twelve tone rows, had introduced a new conception of musical structure ...(and)... abolished the traditional distinction between consonance and

dissonance." (Grout, 1973, p.715). It is quite possible that public school teachers did not appreciate Schoenberg's movement towards dissonance and away from traditional musical structure and form. The dissonance and unconventional structure of Schoenberg's dodecophony may have produced sounds which teachers neither understood nor appreciated and as a result, many public school educators avoided teaching the techniques or ideas of composers such as Schoenberg in the public school. It is also quite possible that many public school music teachers simply did not understand the music and ideas of the new music composers. Such concepts as serialism, the search for new timbres, electronic music and indeterminacy were perhaps alien and foreign to music teachers in the public school. As a result, most teachers ignored the new music and instead stuck with the older repertoires from the eighteenth and nineteenth centuries as well as popular music.

The influence of conservative and reluctant music teachers is still evident today in terms of the absence of much of twentieth-century art music and ideas from the public school classroom. Teachers frequently claim that they do not include the music and ideas of composers such as Karlheinz Stockhausen and John Cage because they find the ideas unusual and the music unmusical. This type of thinking is ill-informed and misses the point. These composers were concerned with breaking down traditional notions and

conventions of music. In other words, they were critical of traditional thought and convention. The link between contemporary music and critical thought (which is an aim of education) lies here, in that, these composers were critical of convention. This knowledge is crucial in understanding twentieth-century music. Any attempt, inadvertently or advertently, by music teachers to ignore the ideas and music of contemporary composers does great injustice to the scope of music education in the public school.

Skill-Training and Teacher Education

One of the main reasons teachers do not teach the full scope of music and musical ideas in public school classrooms is because the focus of much of teacher training in music centers on the development of musical skills. In fact, the development of musical skills in teacher training is emphasized often to the exclusion of developing a knowledge and understanding of music.

Teacher training tends to focus on promoting such traditional skills as competence on the teacher's instrument of choice. Prospective music teachers are also expected to learn such skills as conducting and ear-training. As well, they must learn to be able to identify the sound of musical intervals, the quality of chords, the inversion of chords and the movement of chord progressions. Once a teacher has completed this type of training it is only natural that they reciprocate this in the public school.

As the focus of much of teacher training centers on the development of traditional musical skills, many teachers in training have neither time nor opportunity to develop a knowledge and understanding of music and yet, as we have seen, understanding music is one of the goals of music education in the public schools of British Columbia. If teachers do not know such things as the beliefs behind music, then they are not transmitting the full scope of educational information on to students. This inadequacy has negative connotations for public education as students are, therefore, limited in the amount of information they come into contact with. Such a practice which prevents students from exploring all vital educational aspects of music cannot be seen as educationally justifiable.

The Danger of a Technical Prerequisite

Musical skills are used as a prerequisite to the public school music class and as a result, students who have developed musical skills prior to the music class often become dissatisfied or bored once in the class. For example, there may be students enrolled in secondary band who have developed technical competency as a result of earlier or ongoing musical training. At the same time, the musical competency or skill level of the other students in the class, or even the teacher, may be inferior to that of the trained student. Therefore, the experienced student can come to feel that he or she is being held back. An experience

which can lead to boredom and dissatisfaction for the student.

On the other hand, students without prior musical training may come to believe that they are slower and not as intelligent as their skilled classmates. Try as they might, these untrained students are often unable to catch up to the technical level of the other students. As unskilled pupils may not be able to develop the technical expertise and experience required to become competent and confident during the school term, they may become unhappy with themselves and just as their skilled classmates, dissatisfied with the subject in general.

Musical skills are used as a prerequisite to classes such as band and as a result, only those students and teachers with prior musical training tend to become involved. This limits teacher and student involvement in these classes. Teacher involvement is limited because the majority of teachers in the public school are generalist and do not have an extensive musical background. Student involvement is limited because most students in the public school have not received prior musical training. As a result, students may come to feel that public school music is irrelevant simply because of the skill prerequisite. They may feel that public school music is of no concern or interest to them because they have no prior musical training.

Limiting enrollment and involvement in music in the public school can result in music becoming exclusive and isolated from the general population of the school. If only those with prior musical training become involved and they are limited in number, music can become exclusive unto itself. At best, this can result in the musical training of a small number of students but the training of an elite few is not the aim of public education rather, it is to provide the entire population of the public school with a general education.

According to Broudy (1990), "If artistic talent is to be a prerequisite, then (music) education cannot become general, for such talent is very unevenly distributed." (p.25). Music education cannot be considered general if it chooses to limit itself only to those who have developed skills prior to the music class. As Broudy (1990) warns:

> If one chooses to ground the need for arts education in a highly esoteric faculty or talent, it becomes a dubious candidate for a position in the curriculum of the common school. (p.24)

Once music isolates itself from the general population of the public school and its enrollment numbers decline it can be forced to undergo criticism and scrutiny. Justification for music in the curriculum may be called into question. The question being, is music education a necessary aspect of public education? This could be a particularly difficult question to answer especially in times of financial restraint.

Chapter Three

Some Twentieth-Century Composers and their Musical Techniques

Music education based on the inclusion of twentieth-century musical techniques is the premise of this paper but use of these techniques in the classroom without knowledge of their musical context would prove educationally ineffective. Music teachers must know the theory behind the techniques or why the composers did the things they did. Some composers of twentieth-century music, such as John Cage, believed that the ideas behind the music were often more important than the music itself. As a result, music in the twentieth-century music moved from a skill-based discipline to one which was conceptually based. Also, the basic principles of dominant-tonic music changed in the twentieth century and composers explored other means of constructing music. For example, the notion of designing sound based on principles other than functional harmony. In terms of education, this means music education should change to keep pace. Music education in the public school should move from a skill-based discipline to one which is conceptually based. At the same time, educators will have to provide justification or have reasons for bringing twentieth-century music into the classroom. Reasons such as, twentieth-century composers incorporated many elements of new knowledge which, in turn, is relevant to students of modern schools.

A discussion of the theories and beliefs which form the basis of twentieth-century music would be incomplete without some insight into those composers who were integral in creating or nurturing them. What follows, then, is a look at those composers who have proven influential in terms of twentieth-century music. This list includes: Schoenberg, Webern, Varese, Stravinsky, Messiaen, Bartok, Berio, Ligeti, Boulez and Cage. It is by no means a complete list as it is impossible to include everyone and composers such as Debussy and Stockhausen were discussed in the previous chapter but it does give some insight into those who have been key figures in the movement of twentieth-century music from a skill-based tradition to that of a conceptual one.

Arnold Schoenberg

Arnold Schoenberg (1874-1951) was born in Vienna, Austria into an artistic family. His father and mother loved poetry, painting and music and in turn, they played and sang at home as well as went regularly to the opera. In terms of music education, Schoenberg was largely self-taught but as a child he did study violin, viola and cello. He also learned to play the classical repertoire of chamber music as well as compose in the style of Brahms; often composing songs without the aid of an instrument. Not only was Schoenberg a musician, he was also a writer, painter and serious intellectual, as well as friends with Wassily Kandinsky the non-objective painter and Stefan George the German symbolist

and humanist poet.

In Schoenberg's words, "There is only one goal toward which the artist strives, to express himself."(quoted in Rossi and Choate, 1969, p. 28). This statement links Schoenberg with Expressionism: the visual art movement inspired by Wassily Kandinsky, Oscar Kokoshka, Paul Klee and Franz Marc, among others, as well as the poets Stefan George and Richard Dehmel; artists such as these drew from the work of Sigmund Freud, the father of psychoanalysis. According to Rossi and Choate (1969):

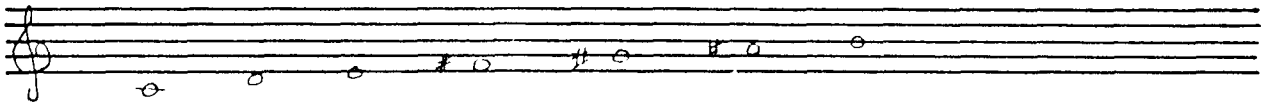
> it was his search into the subconscious that inspired the expressionistic school to try to represent on canvas, to *express*, the inner experience as the only reality... (p.29)

In order to express this inner experience, Schoenberg pulled away from nineteenth-century concepts of tonality and harmony.

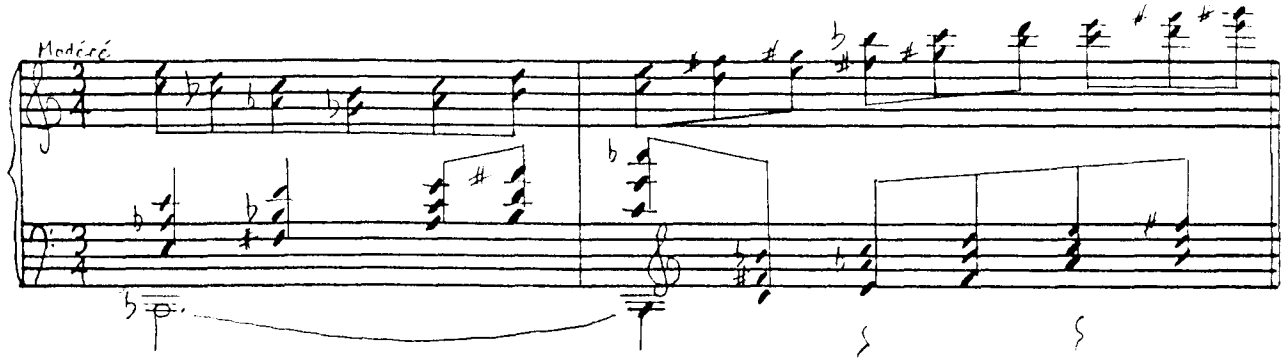
Schoenberg was influential in contemporary music and thought, in that, he further exploited musical techniques as well as introduced radical new concepts. For instance, Schoenberg was familiar with the music of both Wagner and Debussy including Debussy's usage of whole-tone scales and fourth chords. For an example of Debussy's usage of a whole-tone scale, see Figure 3.1. In terms of adding to tradition, Schoenberg made use of techniques such as *Sprechstimme* in his composition *Pierrot Lunaire* (Moonstruck Pierrot, 1912). In fact, *Pierrot Lunaire* is almost entirely made up of spoken words, cries and whispers. Although, *Sprechstimme* was

Figure 3.1 Debussy's Use of the Whole-Tone Scale

The Whole-Tone Scale



Debussy: Pelléas et Mélisande (third act)



Machlis, 1961 pp. 117+118.

not invented by Schoenberg as it had been by used composers from Rousseau to Richard Strauss, Schoenberg did exploit it to its fullest. In some sections of *Pierrot Lunaire*, for example, "...the pitches are left entirely to the discretion of the performer."(Austin, 1966, p. 201).

Schoenberg also stretched the notion of music notation. In *Pierrot Lunaire*, for example:

> the note-heads... (are sometimes) ... replaced by small circles, or left out altogether, or left in their normal shape with a cross on the stem... (Austin, 1966, p.197)

In works such as *Moses und Aron* (1930-32), *Ode to Napoleon* (1942) and *A Survivor from Warsaw* (1947), Schoenberg dispensed with the staff altogether and made use of a single line with notes on, above, and below it, with occasional accidentals.

Due to influences such as Debussy and symbolist poetry, Schoenberg was interested in the concept of sound colors. Schoenberg believed melody arose from sound color which he termed *Klangfarbenmelodie*. (Walker, 1990, p.33). He perceived melody to be a result of colors and pitch one of its parts. As a result, he set out to make melody out of sound color often, though, without changing pitch. As Walker (1990) argues, Schoenberg

> elevated color above melody in a number of his works during the period before the First World War, particularly in the third movement of Variations for Orchestra, opus 16 (19090), in which....Schoenberg requires single chords to be played continuously by successive groups of instruments, thus giving the listener a

continuously changing tone color. (p.33)

Schoenberg also worked with text which had no linear narrative. For example, he based his *Pierrot Lunaire* on a cycle of twenty-one lyrics written by Albert Giraud (1860-1929) and Austin (1966) argues that "There is no coherent narrative or argument, and no evident design in the sequence of the poems..."(p.196). As a way of matching the text to the music, Schoenberg made use of contrasting sections with different instrumentation, tempo and the like.

Of all Schoenberg's accomplishments, though, it was his harmony that was by far the most radical. In what Machlis (1961) terms, Schoenberg's second period, his atonal-expressionist period, beginning sometime around 1909, Schoenberg set about emancipating the dissonance. As was noted in chapter two, Schoenberg wanted to freely use dissonance as a way to move beyond Wagner's use of chromaticism and dissonance. Schoenberg believed that there should be no difference between dissonance and consonance; each should have equal value. At the same time, he wanted to escape the doctrine of traditional harmony and create a music based upon feeling and logic which he termed: "the logic of intuition." What follows are some of Schoenberg's musical rules according to Austin (1966) as deduced from Schoenberg's writings in *Harmonielehre* (1911):

> 1) Avoid octaves, whether as melodic leaps or as intervals between simultaneous notes.
> 2) Avoid major and minor triads and dominant seventh chords, either broken or sounding together

> without some other note.
> 3) When a melodic phrase exceeds an octave in range, avoid exposing equivalent pitches in both octaves. Rarely use phrases of smaller range.
> 4) Rarely use more than three notes in succession belonging to any one major scale. Never compose a whole phrase of notes from one major scale. After a series of notes from one major scale, avoid returning soon to the same scale. (Austin, 1966, pp.204-205).

This is a list of things to avoid when writing music and as a result, Schoenberg had, in fact, created rules which steered the composer away from the use of anything remotely resembling traditional harmony and melody.

Schoenberg wanted to escape from such traditional notions as melody, chords, harmony, chromaticism, dissonance and tonality and at the same time, he wanted to steer clear of such things as the fourth chords used in the music of Debussy. To avoid all things familiar, Schoenberg emancipated "...the twelve notes of the chromatic scale from dependence on the diatonic norm."(Austin, 1966, p.205). No longer were scales to be based upon the church modes or modes to be based upon the 12 notes of the chromatic scale, as found in the music of Wagner but rather, each note was to be considered equal. When combined, the traditional notion of chords and harmonic structure was nonexistent and atonality was the result. For example, see *Three Piano Pieces* Opus 11 (1909).

In order to emancipate the dissonance, Schoenberg began working with the twelve-tone method. This technique can be found in Schoenberg's *Variations for Orchestra,* Opus 31

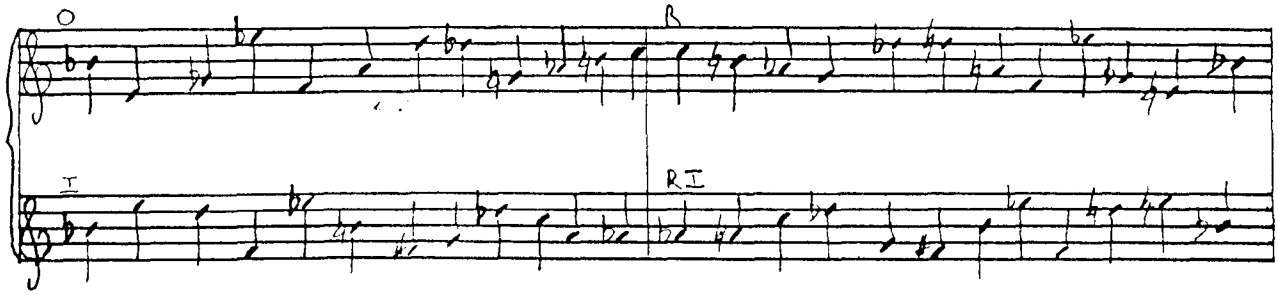
(1927-28). For an example of the twelve-tcne row in Schoenberg's *Variations for Orchestra* see Figure 3.2. The twelve-tone or dodecaphonic technique can be also be found in Schoenberg's *Five Piano Pieces*, Opus 23 (1923), as well as his Serenade for seven instruments and bass voice, Opus 24 (1923), of which the third and fourth movements, the *Variationen and Sonett*, are based on tone rows.

As a result of things such as Schoenberg's treatment of rhythm and his use of vocal effects, his music has often been perceived as difficult to perform. For example, Schoenberg wanted *Pierrot Lunaire* performed without a conductor but the complicated rhythms often cause the piece to disintegrate. Some singers have had trouble interpreting his demanding vocal effects and nuances. The singer Maggie Teyte, for example, gave up on *Pierrot Lunaire* completely calling it "incomprehensible." As well, there were reportedly two hundred rehearsals in order to navigate the incredibly demanding dynamic shifts, etc., and to prepare for a recording of this work. Schoenberg further complicated things by asking that instrumentalists shift from one instrument to another during sections, i.e., from a Bb clarinet to an A clarinet.

Many musicians have criticized Schoenberg for being overly demanding, as well, many critics have taken exception to his radical ideas, techniques and sounds. At the same time, though, others have found his work to be challenging

Figure 3.2 Schoenberg's Twelve-Tone Rows

"The following example gives the tone row on which Variations for Orchestra is based. The original version of the row is labelled O, the backward or retrograde form R, the inversion I, and the retrograde of the inversion RI."



Machlis, 1961, p. 358

and delight in overcoming the difficulties. Still, Schoenberg has been a major influence on twentieth-century music and musicians including Ravel and Stravinsky as well as the conductor and composer Pierre Boulez who once said he found *Pierrot Lunaire* "...continually rewarding, theatrically effective, intellectually stimulating and altogether convincing..."(quoted in Austin, 1966, p.196).

Anton Webern

Anton Von Webern (1883-1945) was born in Vienna, Austria and as a youth, Webern studied the piano, cello and music theory. The young Webern decided to be a composer upon hearing the music of Wagner. Webern later studied musicology, harmony and counterpoint at the University of Vienna where he received his doctorate. Sometime around 1904, Webern began to study, as did Alban Berg, with Arnold Schoenberg and consequently, Webern and Schoenberg became life-long friends. Webern began his professional career as a conductor and composer and as well as giving private lessons. He conducted orchestras and choruses in such places as Vienna, Teplitz, Danzig, Stettin, and Prague. As with Schoenberg, many critics see Webern's music as unconventional and unmusical, yet many of Webern's ideas were later adopted by composers such as Stravinsky.

While Webern is known principally for being a serialist or twelve-tone composer, his early works were in the harmonic style of the time. Generally, this meant functional

harmony with an emphasis on chromaticism. His early works included: *Passacaglia for Orchestra* (1908), songs and choruses (from 1908-1926), music for string quartet (1909 and 1913), *Six Pieces for Large Orchestra* (1910) and *Five Pieces for Orchestra* (1911-13). What was unusual about these, as with later works, was their length. For example, *Five Pieces for Orchestra* is five movements long and yet it barely lasts six minutes in its entirety. In fact, only one of Webern's 31 compositions is actually longer than 10 minutes.

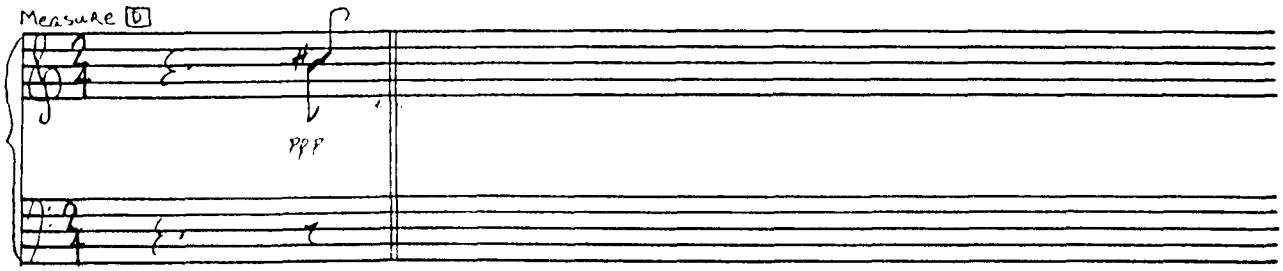
Webern, as did Schoenberg, ascribed to the atonal, expressionistic school and his composition, *Five Pieces for Orchestra* (Opus 10) is a good example of this. This work makes use of atonalism but not based on the twelve-tone style. Instead, atonalism is achieved by using the twelve tones of the chromatic scale and dissonances occur as a result of minor second and major seventh intervals. For example, see Figure 3.3.

Webern breaks up the melody in *Five Pieces for Orchestra* into single tones to be played amongst the different instruments. This ties in with his belief that just as nature is in a state of perpetual variation, music should model itself after the laws of nature. As Webern said, "Once started, the theme expresses all it has to say. It must be followed by something fresh." (quoted in Machlis, 1961, p.385). The notion of variety exists, in that, chords

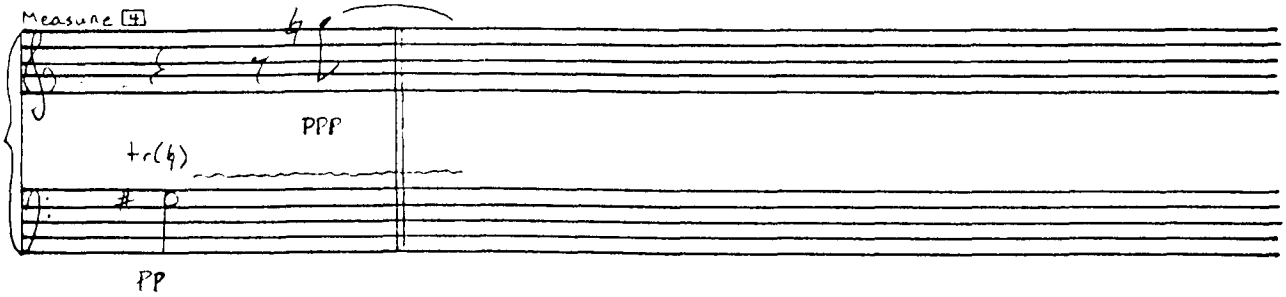
Figure 3.3 Examples of Webern's Use of Dissonance

Two excerpts from: WEBERN; Five Pieces for Orchestra (opus 10)

Minor Second Interval



Major Seventh Interval (outside the octave)



Rossi and Choate, 1969, p. 73.

are broken down into constituent tones and spread out amongst the entire orchestra, in many registers, and the 17 soloists never all play at once.

Webern believed that the same laws of nature that govern the plant and animal kingdoms also affect music. In a lecture he once said:

> Just as a researcher in nature strives to discover the rules of order that are the basis of nature, we must strive to discover the laws according to which nature, in its particular form 'man' is productive. And this leads us to the view that the things treated by art in general, with which art has to do, are not 'aesthetic,'but it is a matter of natural laws, that all discussion of music can only take place among these lines...(therefore,) ...Music is natural law as related to the sense of hearing. (quoted in Rossi and Choate, 1969, pp.69-70)

As a result of his beliefs, Webern was eventually drawn to the twelve-tone technique. One the one hand, as Rossi and Choate (1969) argue:

> Webern felt that the 12-tone Method would enable a composer to have that 'greatest possible unity,' one of the fundamental concepts of music in his mind. 'Unity is surely the indispensable thing if meaning is to exist. Unity...is the establishment of the utmost relatedness between all the component parts'. (p.69)

On the other hand, according to Brindle (1975):

> Serialism, particularly in Germany where it had for so long been banned, became a symbol in the post-war years of spiritual and intellectual freedom and renewal. (p.8)

Webern had learned of the twelve-tone technique from Schoenberg but unlike Schoenberg, who reverted to tonality from time to time, Webern, beginning with his *String Trio*

in 1927, used this technique exclusively.

Webern's *Symphony for Small Orchestra* (Opus 21) contains a good example of his serial technique. This work is based on a twelve-tone row but there are differences between Webern's use of a twelve-tone row and that of Schoenberg. For instance, Webern derives his values from the row in original and retrograde forms. He does not, however, as Schoenberg did, use inversion and retrograde inversion forms. See Figure 3.4. Webern was interested in limiting his musical elements so that an entire piece could be constructed out of a minimum of materials. In order to create variety within this, Webern made multiple use of the row at the same time. (Figure 3.4). Also, whereas Schoenberg's serial organization was only based upon pitch, (Figure 3.2), Webern included timbre and rhythm. (Figure 3.4). Webern's disciples in serialism include Boulez and Stockhausen both of whom developed serialism to include pitches, rhythms, timbres, dynamics and densities.

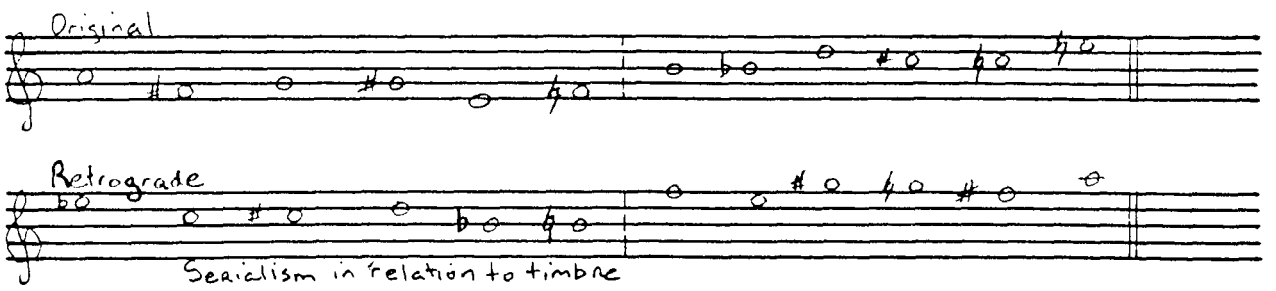
Igor Stravinsky

Igor Stravinsky (1882-1971) was a product of many cultures and influences. Born in Russia, Stravinsky was taught to play the piano as a child and his father was the leading bass at the Imperial Opera. As a result of Stravinsky's musical education in Russia he quickly absorbed many influences including the music of Mussorgsky and Rimsky-Korsakov. According to Machlis (1961), Stravinsky's

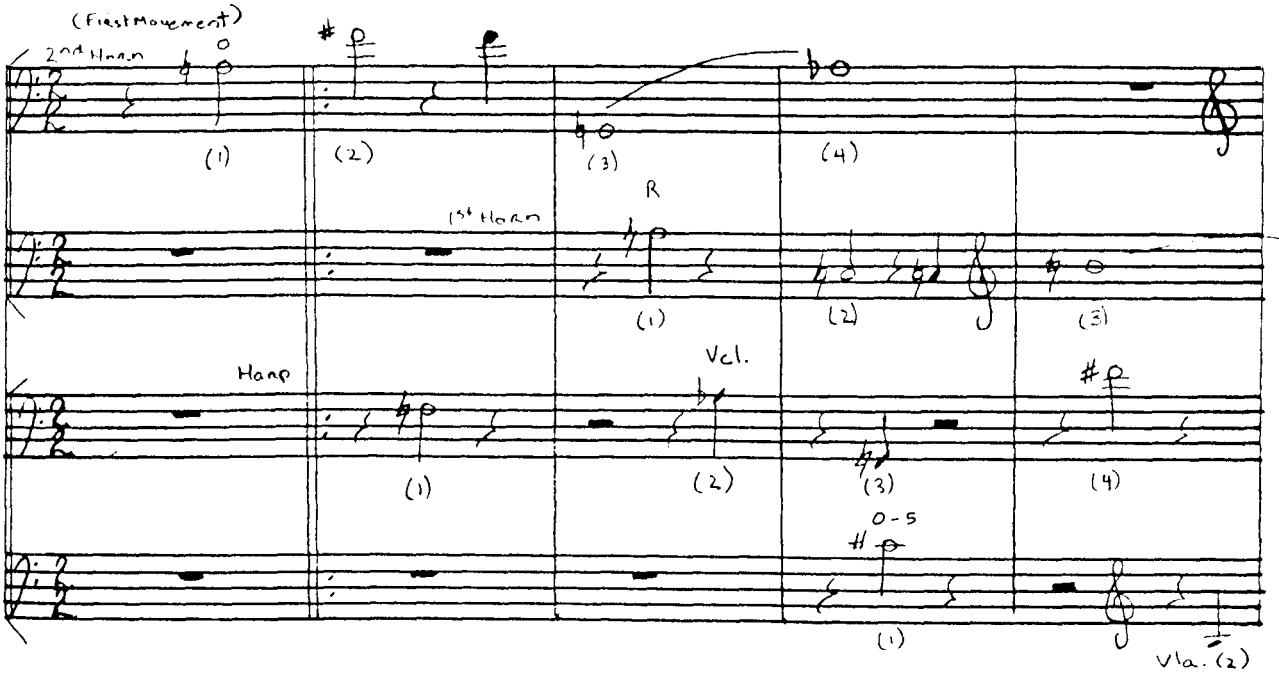
Figure 3.4 Examples of Webern's Serial Techniques

From: Webern; Symphony for Small Orchestra, Opus 21

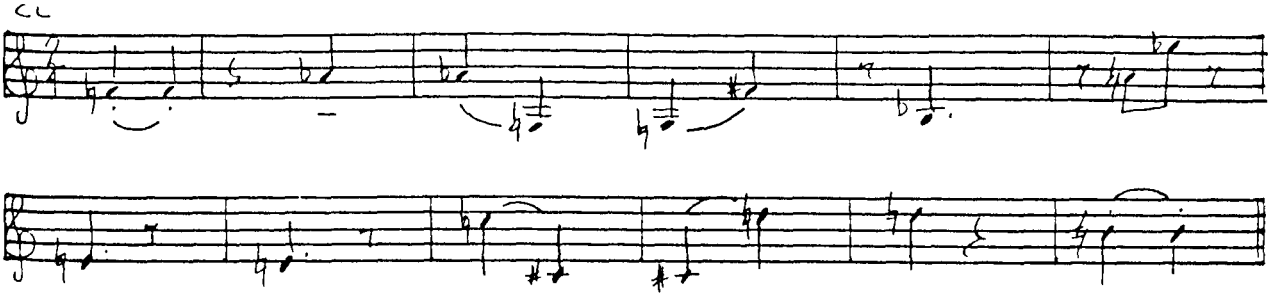
Symphony is based on the following rows



Serialism in relation to timbre



Serialism in relation to rhythm (second movement, Theme)



Machlis, 1961, pp. 391-395.

composition "*The Firebird* displays all the shimmer of Rimsky-Korsakov's orchestra..."(p.169). At the same time, Stravinsky drew from elements of Russian folklore including popular song and dance.

While in Paris from 1911 to 1914, Stravinsky wrote his three great ballets: *The Firebird* (1910), *Petrushka* (1911), and *Le Sacre du printemps* (*The Rite of Spring*, subtitled *Pictures of Pagan Russia;* 1913). Stravinsky then moved to Switzerland where he wrote, among others, *Ragtime for Eleven Instruments* (1918) and *Piano-Rag Music* (1919). Both of which paid respect to the American jazz tradition. Back in France, in 1920 Stravinsky wrote *Symphonies of Wind Instruments* as an hommage to Claude Debussy. He then went on to perform throughout Europe as a pianist and conductor. As a result, Stravinsky's music pays respect to many composers including: Bach, Haydn, Mozart, Tchaikovsky, Weber and Mendelssohn. After two trips to the United States, Stravinsky eventually settled there permanently in 1939. Along the way he collaborated with the choreographer George Balanchine in *Persephone* (1934) and *Orpheus* (1947).

Stravinsky was an important composer because "...he tackled new problems and pressed for new solutions." (Machlis, 1961, p.169) and in doing, he contributed to contemporary music. One of his main contributions was rhythmic complexity. According to Copland (1968):

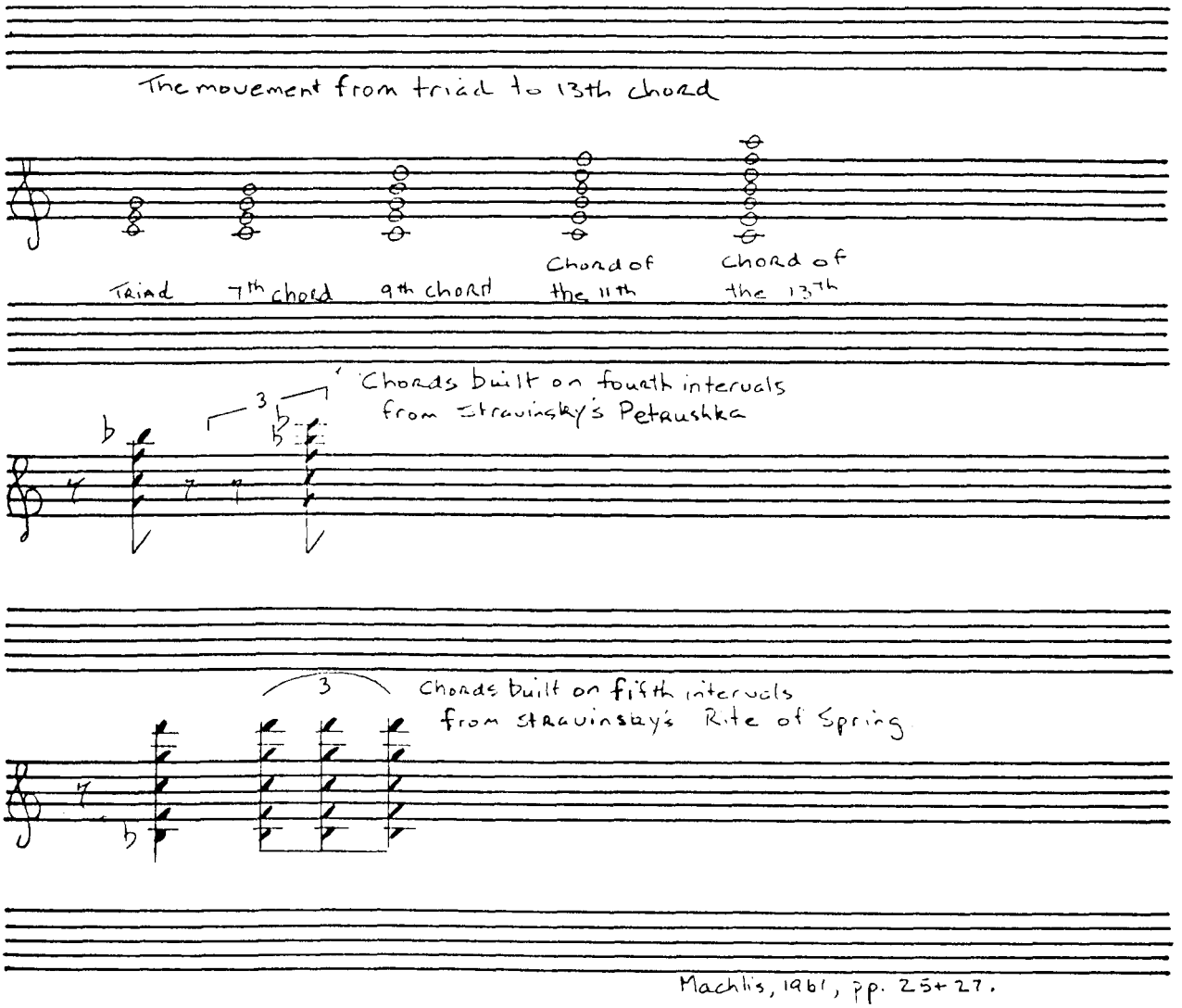
> Stravinsky's rhythmic innovations were principally of two kinds: either he played on the repetition

> of certain definite rhythms with...insistence... producing in the listener a kind of intoxicated rhythmic trance, or instead of confining himself to the more conventional metrical units of 2, 4, or 6, he exploited unusual rhythms of 5, 7, or 11. Even when retaining the normal 2, 4, or 6 units, he alternated these abruptly. 'Such a procedure looks something like this: ONE-two, ONE-two-three, ONE-two-three, ONE-two, ONE-two-three-four, ONE-two-three, ONE-two, etc'. (quoted in Copland, 1968, p.46) For examples of his rhythmic complexity, see Stravinsky's *Petrushka* or the *Sacre*.

As with Schoenberg and Webern, Stravinsky also "...reacted strongly against the restless chromaticism of the postromantic era."(Machlis, 1961, p.169). In the early part of his career, instead of using a lot of chromatic devices he made use of extended harmonic techniques such as chords larger than triads (i.e., 7th, 9th, 11th and 13th chords), polyharmony or polychords (more than one harmony per chord), chords built on fourth and fifth intervals as well as polytonality i.e., "...the combining of two or more independent tonalities at the same time."(Copland, 1968, p.47). For examples, see Figures 3.5 and 3.6.

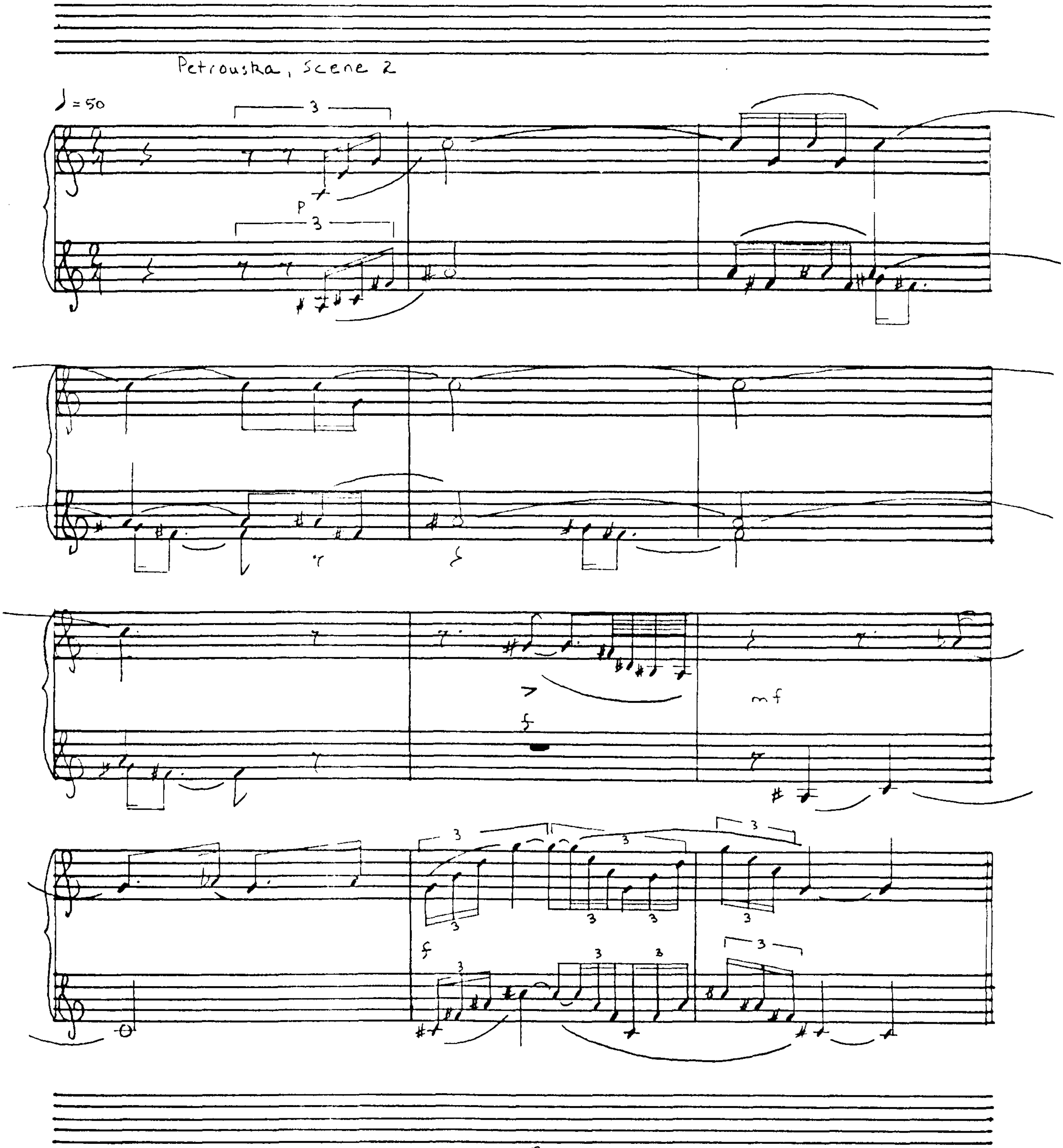
As a composer, Stravinsky was a part of the vanguard. In terms of melodic and rhythmic development, he adhered to the principle of "continuous expansion" as opposed to the "working out" of forms. As well, his opera-oratorio *Oedipus Rex* (1927) demonstrated his movement away from literal meaning in text. As Stravinsky stated, "...One no longer feels dominated by the phrase, the literal meaning of the words." (quoted in Machlis, 1961, p.171). Eventually,

Figure 3.5 Examples of Extended Harmonic Techniques in the Twentieth Century



Machlis, 1961, pp. 25+27.

Figure 3.6 Examples of Polytonality in the Music of Stravinsky



Benjamin, Horvit and Nelson, 1984, p 358.

Stravinsky took up serial writing and as a result of this and other musical devices, he was openly criticized. The public reacted adversely to the opening night of *The Rite of Spring* and one critic called it a "...blasphemous attempt to destroy music as art." (quoted in Machlis, 1961, p.168).

Stravinsky was well aware that his listeners wanted him to turn back from twelve-tone techniques and return to the classicism of his earlier periods but he refused. To his detractors he said:

> Their attitude certainly cannot make me deviate from my path. I shall assuredly not sacrifice my predelictions and my aspirations to the demands of those who, in their blindness, do not realize that they are asking me to go backwards. It should be obvious that what they wish for has become obsolete for me. (quoted in Machlis, 1961, p. 173)

In short, Stravinsky believed that the composers had "...a duty to music, namely, to invent it." (quoted in Machlis, 1961, p.173).

Bela Bartok

Bela Bartok (1881-1945) was born in Hungary and as a boy, he received piano instruction from his mother. Bartok began writing music by age nine and by ten, he had made his public debut as pianist. He went on to study the piano with other teachers, as well as studying piano and composition at the academy and wrote his first symphony at age twenty-two. Bartok made his living teaching, playing the piano, and transcribing and became professor of the piano at the academy in 1907. He played the piano across Europe and into

the United States and it was there that he eventually moved during World War II. In the United States, Bartok performed his piano concertos and taught at Columbia University.

The music of Bartok developed as a result of his many influences. For one, he was highly educated and was aware of the music that flowed out of such European centers as Paris and Vienna. His early musical influences included Liszt, Richard Strauss, Brahms and Debussy. At the same time, Bartok wanted to take the best of Bach's counterpoint, the progressive forms of Beethoven and the chordal style of Debussy and combine them to come up with a contemporary style all his own.

To compliment his contemporary style, Bartok would add his love of folk music. Particularly the folk music of his native Hungary but also the folk music of the Slovak, Romanian and Arabic regions. Bartok combined this with his knowledge of such contemporary musical techniques as chromaticism and twelve-tone, as well as the search for new timbres which included increased usage of percussion instruments and the piano tone-clusters of Henry Cowell. Add to this, Bartok's association with avant-garde painters in Budapest as early as 1913 and the result was a very complex list of resources from which he could draw.

One of the reasons Bartok made use of folk material from a variety of different cultures and sources was because he believed in the concept of universal brotherhood. He

wrote, "My real idea is the brotherhood of nations....I try to serve this idea in my music...and that is why I do not shut myself from any influence..." (quoted in Griffiths, 1978, p. 60). Bartok also made use of folk material so that he could contribute to a National style. He said, This folk material was "...destined to serve as the foundation for a renaissance of Hungarian art music."(quoted in Ewen, 1962, p. 165).

There are other reasons Bartok was interested in including folk material. For one, he wanted to move beyond the confinements of traditional harmony. In Bartok's words:

> The study of this peasant music was for me of decisive importance, for the reason that it revealed to me the possibility of total emancipation from the hegemony of the major-minor system. (quoted in Griffiths, 1978, p.60)

Bartok's study of folk music was not so that he could quote it verbatim but rather, so that he could assimilate its characteristics. Bartok knew that these characteristics, when combined with other musical techniques, would offer him a new and unique voice. A voice which was different from that of any other contemporary composers.

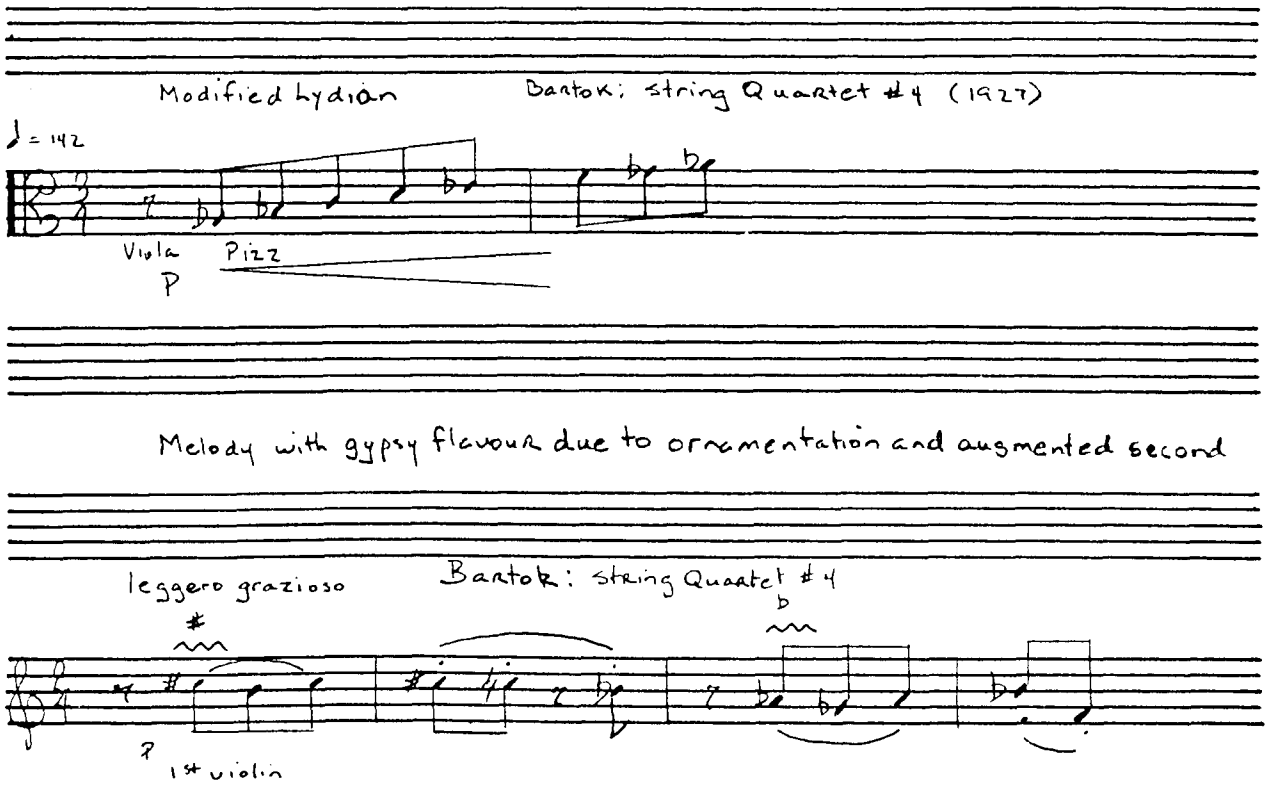
To research some of the various styles of folk music, Bartok travelled to many towns and villages all over his native Hungary. At one point he collaborated with, among others, Zoltan Kodaly to obtain folk music and as a result, Bartok edited and published around six thousand Hungarian folk songs and dances. Bartok also travelled beyond Hungary

to neighbouring countries and those that were further afield. During travels to countries such as Turkey, Egypt and North Africa, he transcribed and recorded folk songs and dances by way of the pen and grammophone.

In the folk music of Hungary, Bartok heard many things including prominent use of church modes and pentatonic scales as well as other scales. For examples of church modes see Figure 3.7. For examples of pentatonic scales see Figure 2.3. Bartok incorporated many of these scales and modes into his own music although modified for his own use. According to Hansen (1967), Bartok made use of pentatonic scales as well as a modified Lydian mode in his String Quartet # 4. In other words, rather than use the Lydian mode Ab, Bb, C, D, Eb, F and G, Bartok constructed the scale to read Ab, Bb, C, D, Eb, F, Gb. See Figure 3.7. Essentially, Bartok lowered the G to a Gb. (note: this scale can also be called an Ab Lydian flat 7 scale or an Eb melodic minor ascending.

Bartok also modified scales for his own use. For example, his String Quartet # 4 makes use of the following scale: C#, D#, F, Gb, Ab, Bb, B natural and C natural which, according to Hansen (1967), has a "gypsy flavour" due to "...ornamentation and prominent use of the augmented second." (p.241). The ornamentation consists of trills, legato and staccato markings and augmented seconds (major seconds) occur between Ab and Bb, Bb and C, C and D, Eb and F and Gb and Ab. For example, see Figure 3.7.

Figure 3.7 Bartok's Use of Modified Church Modes and Other Exotic Scales



Melody with gypsy flavour due to ornamentation and augmented second

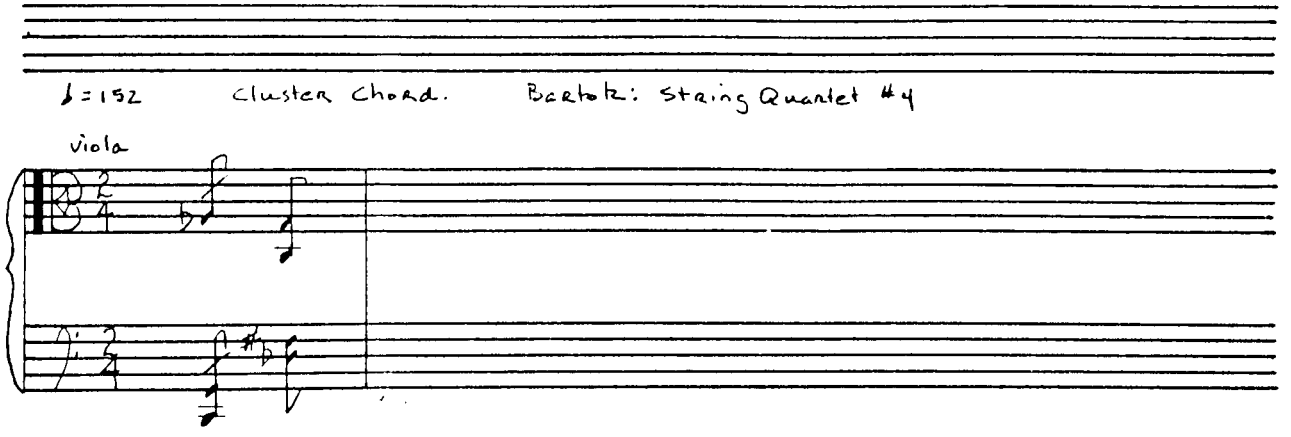
Hansen, 1967, pp. 240-241.

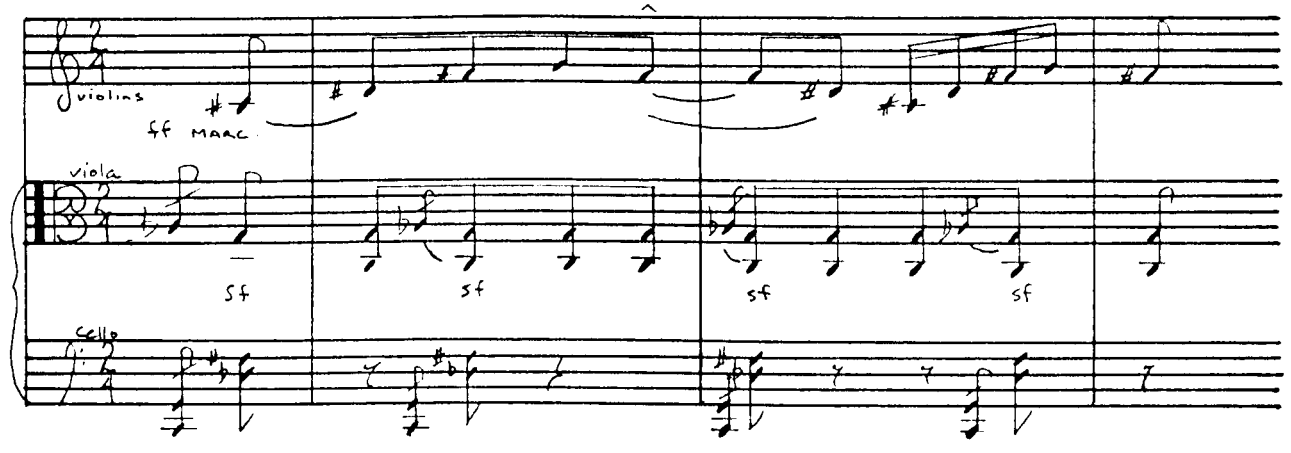
In his movement away from diatonic harmony, Bartok made use of many of the techniques of contemporary composers. For example, he wrote in a chromatic style and this way he was able to blur tonality. Although, as Hansen (1967) notes, "...Bartok...never entirely lost sight of tonality."(p.247). On the other hand, Bartok was able, to disguise tonality by the use of such things as melodies doubled in sevenths and cluster chords, that is, chords based on second and seventh intervals. His String Quartet # 4, for example, contains frequent use of melody and chords based on second and seventh intervals. A cluster chord can be found in the last movement where the cello plays a Db and F# and the viola plays a C and G with minor second intervals occurring between C and Db and between F# and G. See Figure 3.8. As well, cluster chords can also be found in Bartok's composition *Allegro Barbaro* (1911).

Bartok was also able to blur tonality by the use of polymodality, that is, more than one modal key occurring at the same time. An example of this can be found in his String Quartet # 4 where the cello and viola play a cluster chord based on the key of C. At the same time, the violins begin a melody above it on a C#. For example, see Figure 3.8. This usage of music progressing in two or more keys simultaneously occurs frequently in Bartok's music.

Bartok did not write compositions based exclusively on twelve-tone rows but he did occasionally incorporate

Figure 3.8 Bartok's use of Cluster Chords and Polymodality





Hansen, 1967, p. 240

dodecaphony within his compositions for special artistic effect. According to Hansen (1967), Bartok's composition, *Music for Strings, Percussion, and Celesta* (1937), makes use of voices entering "not in the usual tonic and dominant relationships" but according to the following "double series of fifths": A, E, D, B, G, F#, C, C#, F, G#, Bb, D# and Eb.(p.242). The pattern for the top voice moves in fifths from A, to E, to B, to F#, to C#, to G# and to D# or Eb. The pattern for the bottom voice moves in fourths from A, to D, to G, to C, to F, to Bb and to Eb.(Hansen, 1967, p.242).

Bartok largely ignored symmetry and incorporated things such as irregular rhythms, accents and meters into his music. For example, the first movement of his *Music for Strings, Percussion, and Celesta* contains constantly changing time signatures; moving from 6/8, to 12/8, to 8/8, to 7/8. Changing signatures, as well as abrupt and shifting accents and intricate rhythms, can also be found in Bartok's Sonata for Violin and Piano # 1 (1921) and his Sonata for Violin and Piano # 2 (1922), as well as his String Quartet # 4.

Bartok consistently attempted to create unusual sounds. He made use of cluster chords and particular intervals to produce dissonance, found in such highly discordant compositions as *Allegro Barbaro*. At the same time, Bartok also used instruments in uncommon ways to create unusual effects. For example, in *Allegro Barbaro* Bartok treats the

piano like a percussion instrument, in that, he asks that it be struck and hammered. His String Quartet # 4 makes use of such things as harmonics, glissandi, ponticello (bowed near the bridge), alterations of pizzicato and bowed passages as well as col legno (with the back of the bow) and multiple stops. Bartok also includes such effects as rasping twelve-note clusters played fortissimo and without vibrato. In his *Music for Strings Piano and Celesta*, Bartok asks for sounds which suggest bird-calls and insects buzzing.

Bartok was interested in having children learn about contemporary music and as a result from 1926 to 1927 he wrote *Mikrokosmos* meaning "Little World." It consisted of 157 piano exercises published in six volumes, designed to teach children about, among other things, polytonality, polyrhythm, the five-tone scale and dissonance, etc. Due to Bartok's interest in new sounds, he included such extra-musical sounds as "Buzzing" and "Clashing Sounds" in some of the scores.

Edgard Varese

Edgard Varese (1883-1965) was a child prodigy. Born and raised in France, Varese studied mathematics and science in school and by the age of twelve he had composed an opera after Jules Verne. At nineteen, he chose a career in music over engineering although he would continue to pursue science and technology for the rest of his life. Varese studied music with, among others, Vincent d'Indy (1851-1931)

and as a result, Varese became familiar with most historical styles and techniques. In 1909, Varese went to Berlin to work with Ferruccio Busoni (1866-1924) who, according to Goldbeck (1968), "...anticipated electronic music..." (p.29). For example, Busoni supported, among other things, Dr. Thadeus Cahill's 1906 invention the Dynamophone. Busoni also advocated the use of quarter tones and other divisions of the whole tone but in many ways, as Walker (1990) argues, Busoni was a traditionalist.

In Berlin, as in Paris, Varese founded and led choruses devoted to old music and he began work on an opera. In 1915, Varese went to New York where he organized an orchestra devoted to contemporary works. Back to Paris for a short while, he then returned to the States where he taught music and influenced those such as John Cage. According to Austin (1966), Varese's teaching suggested an "...eager imagination of future possibilities." (p.377).

During his travels, Varese met Debussy and became aware of the music and ideas of many composers including Schoenberg, Webern, Berg and Stravinsky, the Futurists, Charles Ives and Henry Cowell. Historians such as Machlis (1961) suggest Varese had

> the desire to root out private feelings from art and to achieve a completely objective style; the spirit of urbanism, and the attempt to evoke the imagery of a machine civilization; the rejection of tonal harmony; the interest in primitivism, with its revitalization of rhythm and its attendant emphasis on the percussive instruments; the attempt to return music to its pristine

> sources, and to mold it into architectural forms as pure sound. (p.625)

This, coupled with Varese's knowledge of the noise making machines of the Italian Futurists as well as his interest in mathematics and science, all played a major role in the formation of his music.

According to Austin (1966), "Varese cared no more than Debussy for counterpoint" (p.377) but unlike Debussy, Varese's goals led him away from both the impressionistic as well as the traditional use of melody and harmony to pure sonority and rhythm. In such pretechnological compositions as *Amerigues* (1917-1922), *Hyperism* (1922), *Octandre* (1924) and *Arcana* (1927), for chamber or large orchestra, for example, Varese made use of winds and brass along with percussion. Vertical harmony consists of all the notes of the chromatic scale voiced in highly dissonant intervals such as minor seconds, minor ninths and major sevenths. These, when coupled with percussion instruments, create complex and rich timbres.

In his work *Ionisation* (1931), Varese began to include such noise-making devices as sirens, piano-clusters and bells to his orchestra. Instead of melodic lines, he used groupings of either single notes or two and three note cells. Single sounds coalesced to form blocks of sound at certain points. Blocks, which Varese termed, "organized sound." These sounds recalled many things including: the sounds of the city, the rhythms of African and Asian music,

the geometric blocks of the Cubist painters as well as providing an analogy between blocks of sound colliding and the intermingling of atoms. According to Salzman (1974), Varese was

> perhaps the first composer to conceive of sounds as objects with sculptural, spatial configurations held together by rhythmic energy. The traditional idea of developmental process and variation plays virtually no role in his music, which is composed of planes and volumes. (p.134)

Along with anticipating the new percussion music, Varese played a key role in combining sound with new technology. For example, he was involved in a Symphony of the Masses which was to include simultaneous performances throughout the world linked by way of radio hookup. As well, he promoted the use of electronic instruments in *Equatorial* (1930s) which was first scored for the Theremin and later the Ondes Martenot; these were some of the first attempts at musical synthesis. On the advent of electronic instruments Varese had this to say:

> I have been waiting a long time for electronics to free music from the tempered scale and the limitations of musical instruments. Electronic instruments are the portentous first step towards the liberation of music. (quoted in Machlis, 1961, p.628)

According to Salzman, Varese played a key role in developing "...new resources based on technology." (p.134). For example, he worked with audio tape and electronic equipment in his composition *Deserts* (1954). *Deserts* is Musique Concrete, in that, it is scored for winds, brass,

percussion and tape. The percussion sounds are processed i.e., filtered, transposed, and mixed by means of electronic devices.

Varese's composition *Poeme electronique*, commissioned for the Le Corbusier designed Philips Pavilion at the 1958 Brussels Worlds Fair, was conceived to make full use of the 360 degree sound spectrum. A tape piece, it employed 400-odd loudspeakers to send sound spinning round the room. Electronics were used, in that, some of the drum sounds were created with a pulse generator and a girl's voice was treated electronically. These sounds were then "organized", in that, they were recorded, altered, juxtaposed and intercut with the idea being, aural images colliding together in space. This work also combined colored lights with the music.

Olivier Messiaen

Olivier Messiaen was born in France in 1908. His father and mother were artistically inclined and as a result, the young Messiaen was composing music by age eight. At eleven, he entered the Paris Conservatory where he studied ancient, classic and modern music. Messiaen was a devote Catholic who worked as a church organist. He was also a music teacher until he was captured by the Germans in the second World War. After his release he returned to the Paris Conservatoire where he taught classes in music analysis, aesthetics and rhythm. Messiaen was influenced by, among

others, Debussy, Stravinsky, Alban Berg, Bartok, Mussorgsky and Rimsky-Korsakov. Messiaen held classes in Paris in the late 1940s; composers such as Pierre Boulez, Luigi Nono and Karlheinz Stockhausen studied with him. Messiaen promoted many things including: bird-songs, Gregorian chant, Asian music, Balinese Music, Hindu music, African music and the use of such electronic instruments as the Ondes Martenot.

Messiaen was influential because he incorporated both new and old beliefs into his music. In terms of old beliefs, Messiaen, as did the ancient Greeks, believed music capable of expressing noble feelings. In his treatise, *Technique de Mon Langage Musical* (1944), Messiaen said, "....music must be able to express noble sentiments..."(quoted in Collaer, 1961, p.279). Messiaen also believed that music should promote religious feelings and beliefs. In his words, it should express "...the noblest sentiment of all: the religious sentiments exalted by the theology and verities of our Catholic faith."(quoted in Collaer, 1961, p.279). Beliefs such as these were coupled with the notion that music was to give pleasure. As Messiaen said, "We are trying to create chatoyant music to give the auditory sense voluptuous and delicate pleasure." (quoted in Collaer, 1961, p.279).

Messiaen drew from many musical sources to create his music. From the ancient Greeks and the church, he borrowed the modes. For examples of ancient Greek and medieval church

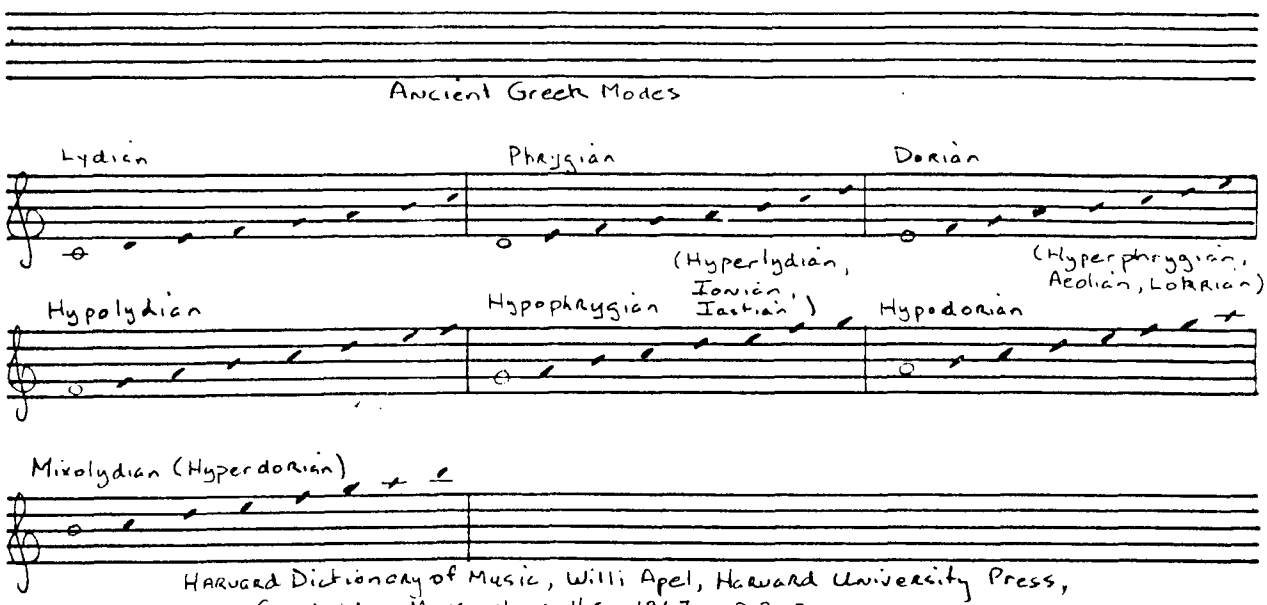
modes see Figure 3.9. These he combined with such scales as the chromatic, whole-tone and synthetic scales or modes; constructed of more than seven tones to the octave, consisting of alternating whole and half steps in various combinations. See Figure 3.9. Examples of these scales can be found in Messiaen's *Quatuor pour la Fin du Temps* (1941).

One of the reasons Messiaen was interested in unusual scales and modes was because they presented limited transpositions. In terms of the synthetic scale of eight tones to the octave in Figure 3.9, it is made up of alternating whole and half steps. Messiaen called this a "mode a transposition limitee," or

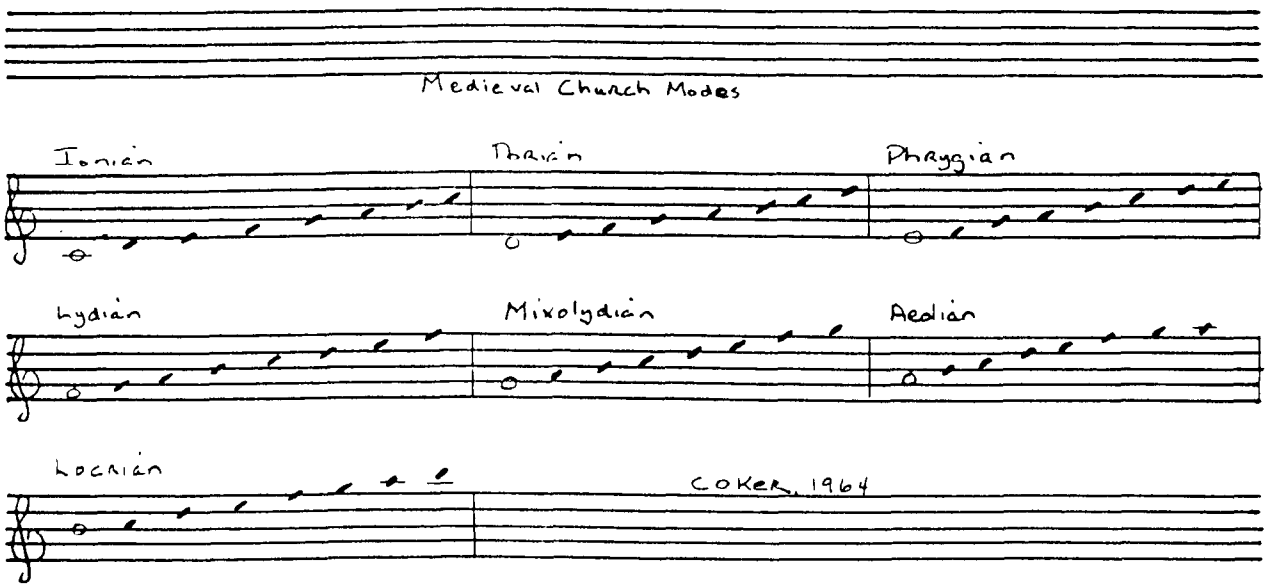
> a scale capable of transposition to a restricted number of points without duplicating by enharmonic equivalence-the whole-tone scale is thus restricted to a single transposition, the eight-tone scale to two... (quoted in Austin, 1966, p.392)

A C whole-tone scale being comprised of C, D, E, F#, G#, A# and C, is capable only of a single transposition because it is constructed of consecutive whole-steps. If one chooses to transpose this pattern of consecutive whole-steps to C# one obtains C#, D#, F, G, A, and B. This is the first transposition of a whole-tone scale beginning on C#. But if one chooses to construct a whole-tone scale on D: D, E, F#, G#, A# and C; one arrives at the same notes as in the first whole-tone scale. Therefore, it is only possible to transpose the pattern of a whole-tone scale, in this way, once.

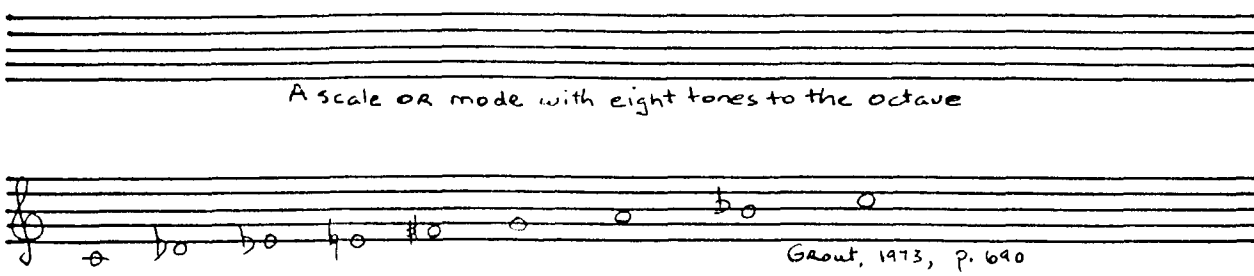
Figure 3.9 Ancient Greek Modes and Medieval Church Modes and A Scale Made Up of Eight Tones To the Octave



Harvard Dictionary of Music, Willi Apel, Harward University Press, Cambridge Massachusetts, 1967, p.303.



COKER, 1964



Grout, 1973, p. 690

In terms of the eight-tone scale: C, Db, Eb, E natural, F#, G, A and Bb, it is constructed of alternating half and whole-tone steps. From C to Db is a half-step, from Db to Eb is a whole-step, from Eb to E natural is a half-step and so on. If one moves to a C# and builds an eight-tone scale based on the pattern of a half-step followed by a whole-step, one arrives at C#, D, E, F, G, G#, A# and B. This is called the first transposition of the pattern. If we move to D to construct the same pattern we get D, Eb, F, F#, G#, A, B and C and this is the second transposition of the pattern. But if we choose to transpose the pattern to Eb we obtain Eb, Fb, Gb, G natural, A, Bb, C and Db and this makes use of the same tones as the first scale; the only difference being they are spelt differently. In other words, E natural in the first scale can be called Fb in the third transposition and F# in the first scale can be called Gb in the third. (Collaer, 1961, p.280). Thus, it is impossible to transpose this pattern more than two times without duplication.

Messiaen was interested in using scales that provide limited choice because they held a certain charm for him. A charm which he termed, "the charm of impossibilities." This resided in the belief that there were "logical limits to the freedom of choice." (quoted in Austin, 1966, p.392). As well as limiting choices, Messiaen was interested in synthetic scales and ancient modes because they presented an alternative to such things as functional harmony. By

combining different scales, such as those mentioned, Messiaen was able to create sounds which were unlike those of the traditionalists, impressionists, atonalists and serialists.

Messiaen's uniqueness came from his ability to draw from many sources. From Medieval music, he derived the concept of "Rhythmic pedals," that is:

> a repeating pattern of rhythm made up of various duration-values, and usually overlapping the melodic-harmonic pattern in a way similar to the overlapping of *talea* and *color* in some medieval isorhythmic motets. (Grout, 1973, p.690). For example, see *Chronochromie* (1960)

Messiaen employed notes of fixed value but when he wanted to avoid regular beats he would use a technique Rostand (1961) terms, "Chromatic duration-mode." According to Rostand, chromatic duration-mode is systematically adding or subtracting note values. Messiaen was able to move

> from a demi-semi-quaver to a dotted crochet, passing through all the intermediate values obtained by adding to each the value of a demi-semi-quaver. In this way one arrives at a series of twelve values separated by what could be described as the 'chromatic interval' of a demi-semi-quaver. (p.178)

The use of chromatic duration-mode can be found in Messiaen's *Quatre Etudes de Rythmes.*

Messiaen employed the technique of chromatic duration-mode largely because it limited his possibilities. In the movement from an eighth-note to a sixteenth, from a quarter-note to a dotted-quarter, and from a quarter-note to a sixteenth to an eight-note, it was possible for Messiaen to

create a palindrome; a rhythmic pattern that reads the same both backwards and forwards. In this way, Messiaen was able to limit his rhythmic choices to what he termed "rythmes non-retrogradables," meaning that the retrograde of the pattern is the same as the original. (Austin, 1966, p.394). Grout (1973) harkens these rhythmic devices to ancient Greek music as well as Hindu talas. Messiaen's composition *Poemes our Mi* (1936) for soprano and orchestra, for example, does away with the bar-measure system altogether and unfolds continuously like a Hindu raga.

Along with musical techniques from various periods and origins, Messiaen also included serial techniques. The chromatic duration-mode used in 'Modes de valeur's et d'intensities' for solo piano (one of the four studies in *Quatre Etudes de Rythmes*) was such a technique. According to Grout (1973):

> Messiaen systematically organized the different elements of musical sound in such a way that every tone of the chromatic scale-now in one, now in another of three different octave registers-was always associated with a certain fixed duration, loudness, and way of playing (legato, staccato, etc.). (p.691)

Messiaen's composition *Messe de Pentecote* for organ makes use of serial combinations of timbres, pitch and intensity as does his *Livre d'Orgue* which illustrates sound texts from the bible using serial techniques. (Rostand, 1968). For examples, of Messiaen's serial techniques see Brindle (1975).

Many of Messiaen's works are incredibly long. His *Quatuor pour la fin du temps* (1941), for example, lasts a full hour and *Vingt Regards sur l'enfant Jesus* (1944) lasts two and a half hours. Along with composing long pieces, Messiaen made use of unusual sound resources such as consonant and vowel vocal effects in *Cinq rechants* (1949). He often transcribed the songs of birds and included them in their original form as in *Le Reveil des Oiseau* or he treated them serially as in *Messe de Pentecote.*

Along with imitating the sounds of nature, Messiaen was attracted to electronic and ethnic instruments. His work *Trois Petites Liturgies de la Presence Divine* (1944) is orchestrated for soprano choir, celesta, vibraphone, maracas, Chinese cymbals, gongs, piano, strings and Ondes Martenot. His interest in ethnic percussion instruments is evident in his choice of Chinese cymbals. In *Turangalila-Symphony* (1948) Messiaen included the glockenspiel, celesta and vibraphone and said:

> The three keyboard instruments...have a special part similar to that of an East Indian *gamelan* as used in the islands of the Sonde (Java and Bali). (quoted in Machlis, 1961, p.330)

Pierre Boulez

Pierre Boulez was born in France in 1925 and as a child, the young Boulez dabbled in music and sang with the church choir. At St. Etiene and Lyon, he majored in mathematics as well as music and in 1944 studied harmony with Oliver Messiaen at the Paris Conservatory. Due to

Messiaen, Boulez learned that music can be made up of many different sounds. Of Messiaen's teachings, Boulez said, "...he has taught us to look around us and to understand that *all* can become music." (quoted in Griffiths, 1978, p.137). Within the first year of his studies with Messiaen, Boulez won a major prize in harmony.

In 1945 Boulez heard the serial music of Arnold Schoenberg and was duly impressed. Of the twelve-tone method Boulez said, "I realized that here was a language of our time. No other language was possible." (quoted in Rossi & Choate, 1969, p.152.). Boulez studied the twelve-tone system at the Conservatory with the Polish composer Rene Leibowitz. According to Rossi and Choate (1969), Boulez's first compositions were not completely serial, more often, "...the highly organized and restrictive *series* referred to only the melodic structure of his works.(p.153). Yet, Boulez would move closer and closer to total serialism.

In 1946 Boulez wrote three compositions: *Sonatina for Flute and Piano, Piano Sonata No.1* and *Le Visage nuptial*. As well as being composed in the same year, these three selections have something in common in that they all contain serialized pitch as well as rhythm. *Sonatina for Flute and Piano* (1946), for example, has serialized pitch in the Schoenberg manner, as well as Boulez's conception of serialized rhythm. Of serialized rhythm, Boulez said:

> The simplest case will consist of taking a series of [rhythm] values and having them undergo a

> number of permutations equal and parallel to that of pitches, by giving each note of the original series a permanent duration. (quoted in Rossi & Choate, 1969, p.154)

Known also as a conductor, Boulez continued composing as a result of his appointment as music director of the Barrault Theatre in 1946. Due to the theatre, he toured Europe, North and South America and the Far East and soon became known as a conductor of both standard as well as modern repertoire. As a result of his travels, Boulez came into contact with and heard many different styles of music. Of his travels he said:

> the discoveries that I made through that were very important for me as a composer, since they allowed me to free myself from European conventions of instrumental usage. (quoted in Griffiths, 1978, pp.137-138)

One of the ways Boulez freed himself from conventional instrumental usage was by incorporating unusual sounds and instruments into his music. His *Le Soleil des eaux* (The Sun on the Waters, 1948), for example, is a "poetic drama for radio" with text by the French surrealist poet Rene Char. In 1959, Boulez reworked the radio drama into a cantata and scored it to include the xylophone, vibraphone, glockenspiel, timpani, gong and cymbals. The music itself is based on a tone-row made up mainly of major thirds to which Boulez has added *Sprechstimme* as well as shifting meters e.g., 2/4 to 3/4 to 5/8, etc. Individual tones are assigned to different instruments with *Klangfarbenmelodie* resulting.

By freeing himself from traditional instrumental usage,

Boulez was free to explore new timbres. Timbres he often found with the aid of percussion instruments. According to Campana (1989), Boulez maintained an interest in percussion instruments largely because of John Cage. Cage was a proponent of percussion instruments and in Paris in 1949, Boulez met and became friends with Cage. After Cage returned to America, the two maintained friendship and correspondence. As was noted, Boulez's *Le Soleil des eaux* of 1959 contains such percussion instruments as the xylophone, vibraphone, glockenspiel, timpani, gong and cymbals.

Griffiths (1978) suggests, Boulez incorporated percussion instruments because he had heard Balinese and African music. After analysis of Boulez's *Le Marteau sans maitre* (1952-5), Griffiths argues, the "...percussion sonorities and rhythmic dynamism owe something to the influence of Balinese and black African music." (p.137). Griffiths goes on to suggest that "...the vibraphone is used as a substitute for the gamelan while xylorimba and percussion suggest the influence of black African music."(p.137). *Le Marteau sans maitre* (The Hammer Without a Master, a setting of poems by Rene Char) is Boulez's most famous work, for in addition to two commercial recordings, performances have been given in Paris, Vienna, Zurich, Munich, London, New York and Los Angeles.

After 1954, Boulez organized many concerts in Paris to introduce the Parisians, among others, to contemporary

music. Although Boulez did not conduct, the first concert consisted of Stravinsky's *Renard*. Later, Stravinsky appeared to conduct his own *Agon* in 1957 and *Threni* in 1958. Boulez eventually performed his own works including *Domaine Musical*, as well as works by Schoenberg, Messiaen, Webern, Varese, Stockhausen, Henri Pousseur, Luigi Nono and Earle Brown.

In terms of the construction of his music, for Boulez "...'structure' was the key word..." (Griffiths, 1978, p.144). In other words, Boulez and the other serialists saw themselves

> concerned primarily with structure and organization, as architects or engineers of sound....there was much talk of 'research', and much mathematics in their technical writings. (Griffiths, 1978, p.144)

Because of Boulez's interest in mathematics and structure, his compositions entered the realm of total serialization or integral serialism. According to Griffiths (1978), Boulez was "...taking the path to total predetermination." (p.147).

In terms of total predetermination:

> At first the highly organized and restrictive *series* referred to only the melodic structure of his works. Gradually Boulez brought the other constituent elements of music under similar control. (Rossi & Choate, 1969. pp.153-154)

He serialized both pitch and rhythm in his cantata *Le Soleil des eaux* and *Piano Sonata No.2* of 1948 and *Polphonie X* of 1951. As well, his Second Piano Sonata (1948) and *Livre pour quator* (Book for string quartet, 1949) contains pitch as

well as rhythmic and dynamic serialism. Boulez's complete breakthrough into total serialism came with his *Structures* for two pianos (1951). According to Griffiths (1978):

> Here Boulez began with twelve-piece scales of durations, dynamics and attacks as well as pitches: each aspect is strictly controlled according to serial principles... (p.143)

Other totally serialized compositions include his *Le Marteau* (1955) and *Two Studies.*

While Cage and Boulez did share an affinity for percussion instruments, their correspondence reveals that they differed widely in their approach to composition. According to Campana (1989), Cage was

> exploring the means toward composing with an 'unaesthetic choice' and Boulez...was attempting to create in his music 'a great architectural complex'. (p.210)

Cage was moving more and more towards chance and indeterminacy while Boulez, on the other hand, towards sound design based on total serialism. After 1948 and possibly due to his correspondence with Cage and knowledge of Stockhausen, Boulez began to soften his views on total serialism.

One of the ways Boulez softened his approach to complete determinacy was by including improvisation or chance in his music. His *Le Soleil des eaux* of 1948 and 1959 makes use of *Sprechstimme,* in that, the soprano is asked to improvise freely where noted. According to Griffiths (1978), Boulez's rejection of total serialism occurred sometime

after his 1951 composition *Structures*. (p.142). Essentially, Boulez wanted to liberate himself from total serialism because he saw it as an aesthetic issue. He said, "...we had to seek beyond a codification of the language and involve ourselves again with aesthetic problems..."(quoted in Griffiths, 1978, p.154). Boulez's answer to aesthetic involvement was to involve the will of the composer. Thus, in his *Le marteau sans maitre* (1952-4), Boulez handles the serial method with more suppleness, in that, he includes formal shape and melodic contour; along with calculations, Boulez adds choice.

In addition to serial structure, Boulez left room for the performer to make choices in works such as *Sonata No. 3 for Piano,* as well as *Improvisations sur Mallarme*. In other words, the performer is to choose what section he or she wishes to play. According to Griffiths (1978), Boulez made use of these chance procedures because of his knowledge of improvisation in music such as Hindu ragas. In terms of other ethnic influences, Griffiths (1978) argues, the harp in *Improvisations sur Mallarme* for soprano and percussion ensemble (1957) "...may owe something to the experience of hearing a Peruvian Indian play the instrument, there is no question of mimicry in terms of material." (p.138).

According to Campana (1989), Boulez's *Piano Sonata No. 3* contains aleatoric principles. She said:

> The work is comprised of five *formants: Antiphone, Trope, Constellation/Miroir, Strophe,* and

> *Sequence.* Each *formant* is subdivided into sections Boulez called *developpants;* the path from one *developpant* to the next was decided by the performer. To Boulez this design was a labryinth and the performer was free to choose direction from its multiple paths. (p.243)

Yet, as Campana suggests, there are not many options actually open for the performer and as a result, Boulez's use of indeterminacy varies greatly from that of John Cage.

Boulez did develop an interest in electronic music. Rossi and Choate (1960) note, Boulez heard the electronic music of Stockhausen and was impressed. Boulez said:

> Rarely in the history of music could one have been witness to a more radical revolution, for one must understand that the musician finds himself facing an unprecedented situation, the creation of sound itself... (quoted in Rossi & Choate, 1969, p.155)

Because of his knowledge of electronic music, Boulez worked in electronic music studios both in Paris as well as Cologne. Although today, his interest lies mainly with acoustic music. As well as becoming conductor and administrator of the Institut de Recherche et Coordination Acoustique/Musique, Boulez composed little after 1965 choosing instead to concentrate on conducting. In 1969 he became the conductor of the New York Philharmonic and from 1971 to '72 he conducted the BBC Symphony Orchestra in England.

Luciano Berio

Luciano Berio was born in Italy in 1925. Both his father and grandfather were church organists and composers. Luciano began his music studies with his father and later

continued at the Conservatory of Milan. In his early years, Berio worked as a coach and an accompanist for opera performers as well as a piano teacher and conductor. Later, he travelled and taught composition in places such as Mills College and Darmstadt. Along the way he was influenced by many composers including: Schoenberg, Stravinsky, Webern, Hindemith, Bartok, Milhaud, Boulez and Stockhausen. As a result, Berio worked both in the acoustic idiom as well as the electronic, often combining the two.

One of Berio's aims was to move beyond the traditional notion of music and orchestras. Berio had this to say about the term "orchestras":

> They have very precise historical connotations. They are still an extension of the polyphonic distribution of acoustical courses based on choral writings. I wish eventually to reconsider the orchestra in terms of what has been done by Schoenberg and Webern; that is, to develop it as a multiplication of the soloistic type of writing, reconstituting it under new acoustical considerations. For me the great line historically of this new development is through Debussy, Stravinsky, Schoenberg, and the new generation of composers. (quoted in Rossi and Choate, 1969, p.165)

Berio was interested in the notion of combining idioms. In his words, "a kind of interdisciplinary approach" to different media. (quoted in Rossi and Choate, 1969. p.164). While he was fond of uniting disciplines such as theatre and music, Berio had an extreme distaste for traditional opera. As a result, he tried to create theatrical works which were new and different. One of the ways Berio achieved this was

by combining styles of music. For example, his *Allez Hop* is "...a kind of semi-opera based on popular song, blues, etc., with scoring of the 'big band' type."(Brindle, 1975, p.138).

The reason Berio wanted to combine idioms and sounds was largely because he was interested in multiple ideas and events occurring at the same time. His hope was that a fusion would result between disparate elements. His *Laborintus II* (1968), for example, makes use of four areas: dance, language (singers and chorus), instruments and lighting. As well, in his *Sinfonia* Berio drew upon such sources as historical literature and historical music and juxtaposed it with the sounds of contemporary life to form a kind of collage or complex of sounds. According to Brindle (1975), Berio's *Sinfonia* for orchestra, singers, speakers, etc.,

> can be likened to a newspaper, with its serious pages, the sports section, foreign news, fashions, the arts, etc.: or to standing on a street corner and hearing radios that play symphony and jazz, Swingle Singers and opera, which is blotted out now and then by people who pass by, speaking in different languages. Berio uses sizeable sections of Mahler's Second Symphony, and makes references to Bach, Schoenberg, Debussy, Ravel, Strauss, Boulez, Pousseur, and others. Readings include passages from Beckett's *The Unnamable* and James Joyce, as well as odds and ends in different languages. (pp.141-142)

Technically, Berio worked atonally using serial techniques while at other times he combined tonal note groupings in a kind of free-twelve note system. Most of Berio's music is highly structured due to adherence to

techniques such as integral serialism; a style of composition also called "pointillism." According to Brindle (1975):

> The term 'pointillism' is derived from an impressionist style of painting initiated by Georges Seurat in the 1880's....the word pointillist...describes his method of painting with dots of primary colours which the eye is able to assemble into colour mixtures and figurative shapes. (p.17)

In the serial music of the fifties, including that of Berio, one finds the

> almost single-note texture, with widely scattered, almost disconnected sounds and uniformly subdued emotive undertones, came to be called the 'pointillistic style'... (Brindle, 1975, p.17)

As was noted, most of Berio's music adhers to techniques of integral serialism whereby every permutation of a note in a score, together with duration, intensity and timbre is determined by number. This technique can be found throughout Berio's music; from his Quartet for wind instruments (1949) to his *Composition for Orchestra* (1959). In terms of the actual serial technique, Berio's computational methods were similar to those employed by Webern and Messiaen due to the fact that "Webern and Messiaen effect(ed) the transition to Boulez and Berio." (Mellers, 1968, p.241).

At the same time, Berio composed music which was not highly structured. He wrote music based upon what Brindle (1975) calls, a "free twelve-note structure." That is, a style of writing which was in vogue with the avant-garde

after the fifties. This movement was seen as a break from the confinements of total serialism but according to Brindle (1975), it was actually a continuation of atonalism.

> In free twelve-note music, the series is abandoned and note-orders are completely free. The total-chromatic of all twelve chromatic notes within the octave is used fairly consistently, but there is no rigid rule, as in serialism, whereby notes cannot be repeated until all the other eleven notes have been used. In fact composers seem to have used successions of notes freely according to the requirements of musical expression. (Brindle, 1975, p.53) See Figure 3.10

Note the complex shifting time signatures in *Serenata I.* From 7/8 to 5/8 to 2/8 to 7/8 to 9/16 to 6/8 to 2/8 to 5/8, etc.

Berio also made use of new and unusual sound sources. For example in *Sequenza V,* Berio asks that the trombonist use a metal plunger to produce a variety of sounds. At the same time, the performer is requested to make fast and continuous movements with the slide. Also, the horn player is asked to produce one sound after another by moving through seven dynamic steps; from as *p* as possible to as *f* as possible. As well, Berio incorporates semi-spoken words in compositions such as *Circles* (1960) and *Sequenza III* (1966). His *Passagio,* for example, contains a speaking choir.

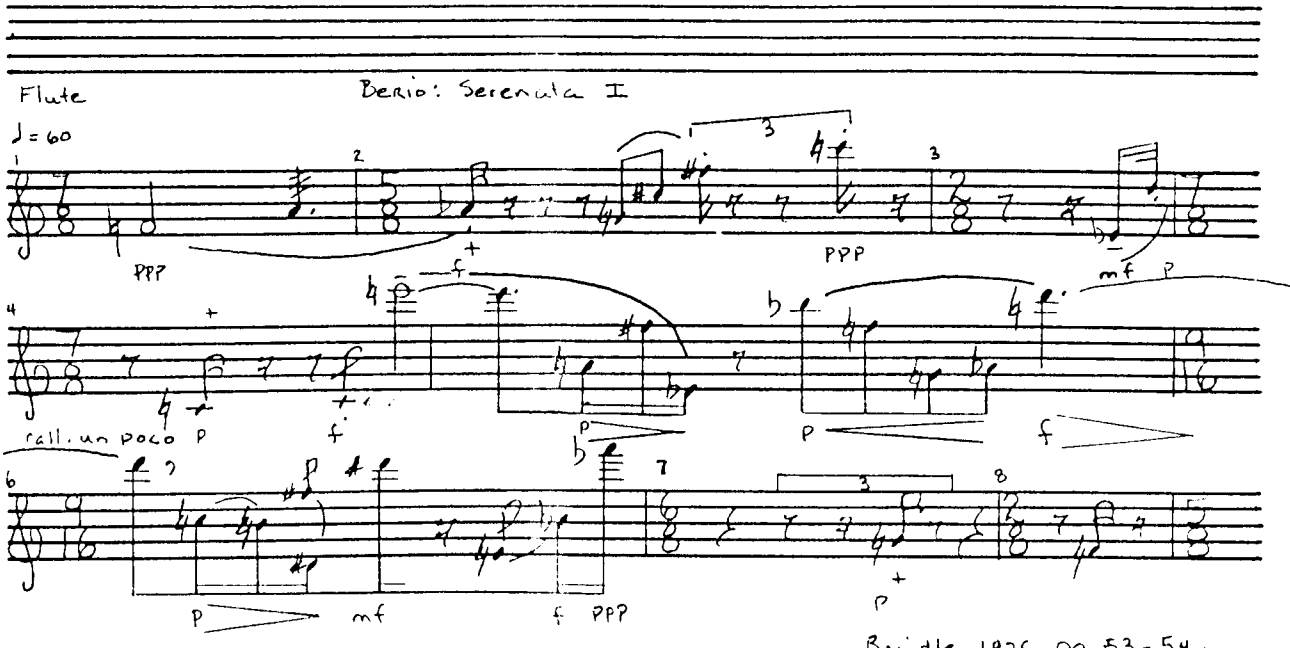
In *Sequenza V,* as well as *Circles* and *Sequenza III,* Berio includes notes of relative pitch. That is, notes which are not written on staff or ledger lines but appear as dots, triangles or lines above, upon, or below the staff. This

means that it is up to the performer to determine their pitch. For example, see Figure 3.10. Berio moved away from the use of time signatures and began to incorporate proportional notation in his scores. Therefore, even with notes of exact pitch, their duration and dynamic is left open to interpretation. In terms of duration, in *Sequenza* (1958) Berio indicates that a space of about 3 cm is equal to 70 M.M. Berio also wrote notes as graphic symbols which means that the performer has input in terms of deciding the kinds of sounds he or she wishes to produce. See Figure 3.10.

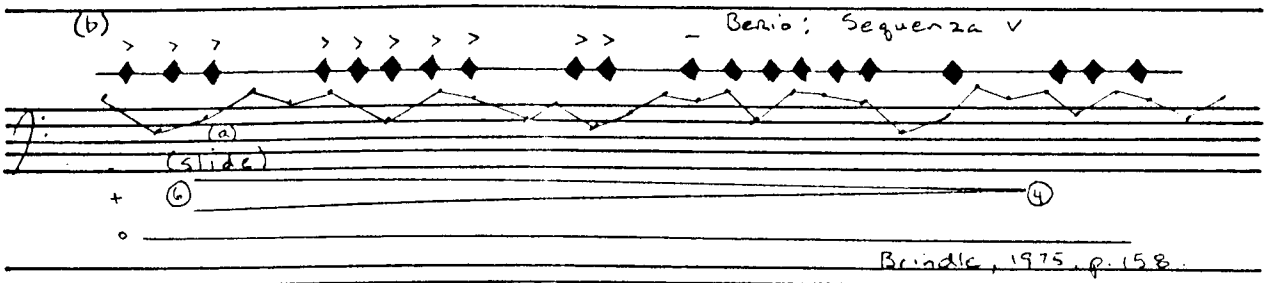
In terms of graphic notation, notes appear as small dots or triangles with lines running through them in Berio's *Sequenza V.* The trombone part consists only of lines with the suggestion that the performer play a long tone with or without mute. See Figure 3.10. In *Sequenza III* Berio also makes use of graphic symbols but this time to represent breathy and whispered sounds. See Figure 3.10. Other instructions include: "laughter", "breathing in gasping", "mouth clicks", "coughing", "hands over the mouth" and with "mouth closed."(quoted in Brindle, 1975, pp.165-166).

As well as being involved in acoustic music, Berio was an active exponent of Musique Concrete. So much so, that he was invited to Paris to work in Pierre Schaeffer's studio. As well, Berio founded his own electronic studio at Studio di Fonolgia in Milan. Berio went on to produce such works as

Figure 3.10 Berio's Use of Free Twelve-Note Music, Shifting Time Signatures and Graphic Notation



Brindle, 1975, pp. 53-54.



Brindle, 1975, p. 158.

Berio: Sequenza III

— — — — ● OR ○—| = breathy tone, almost whispered.

ϕ or ϕ = sung and whispered sounds as short as possible.

Brindle, 1975, p. 165.

Differences (1958) which combined flute, clarinet, viola, cello, and harp with magnetic tape. According to Machlis (1961):

> The players record part of the score before the concert. At certain points in the performance this recording is broadcast in the hall by four loudspeakers. In other words, the musicians stop playing but one continuous to hear them... (p.442)

Berio's *Hommage a Joyce* (1959) is also Musique Concrete, in that, he uses

> a female voice reading a fragment from *Ulysses*, which is then reconstructed electronically to serve as raw material for the composition. (Machlis, 1961, p.442)

At the same time, Berio made use of electronically produced and altered sounds. His *Mutazioni* of 1956, for example, is an electronic work and his *Hommage a Joyce* makes use of octave filtering.

Gyorgi Ligeti

Gyorgi Ligeti was born in Hungary in 1923. The titles of his musical works, *Requiem* and *Lux Aeterna* as well as his affinity for choral music, are proof of his affiliation with the Roman Catholic Church. As well as being influenced by music of the church, Ligeti was also influenced by musical theatre. His composition *Aventures*, for example, is a large-scale theatre piece. At the same time, Ligeti was also a highly trained musician who was familiar with the techniques of old music. This he coupled with his knowledge of the contemporary stylings of composers such as Varese, Xenakis, Webern and Boulez and such modern art styles as dadaism.

Ligeti was familiar with the serialism of Webern and the integral serialism of Boulez. In analysis of Boulez's *Structures* Ligeti said:

> Our perception, which at first only noted the accidental details then penetrates gradually to deeper levels, till it discovers the overall coherence and proportions. It is just these latter that give the piece its artistic value, which can hardly be grasped by listening in a traditional way. (quoted in Hansen, 1867, p.369)

Ligeti referred to the way in which Boulez subjected every aspect of his music to mathematical control and as a result, Ligeti believed that integral serialism presented new obstacles for the listener. (Hansen, 1967, p. 367). Integral serialism was difficult for the listener to interpret or understand because it contained no reference to traditional musical convention and as a result, Ligeti believed "That one must adopt a new way of listening to music..." He said:

> Webern's interval-objects....still contained a trace of the (discreetly) 'expressive,' and although the satisfaction derived from his music is the result of quite different qualities, the traces of 'expression' present at times do provide crutches for the struggling listener. All this has vanished....from Boulez' *Structures*... (quoted in Hansen, 1967, p.369)

The solution, according to Ligeti, lie in the erection and recognition of pure sound structures. He said:

> The 'beauty' of a piece like this (Boulez' *Structures*) lies in quite new qualities....that in Webern already formed the nucleus: beauty in the perfection of pure structures....to compose now takes on an additional character of research into the newly discovered relationships of material....there is no other way for the composer

> of today, if he wants to get any further... (quoted in Hansen, 1967, p.369)

While, Ligeti was attracted to pure sound structures which he believed existed in the serial music of Boulez, he largely ignored serial music and chose to erect them instead using cluster chords.

In terms of cluster chords, Ligeti, as with Xenakis, "...inherited from Varese a concern for volumes and densities of sound...(as well as)...changing color and density."(Salzman, 1974, p.178). These relationships of color and density are to be found in the cluster chords of Ligeti. His *Volumina* for organ, for example, makes use of cluster chords in both the right and left hands, as well, they are graphically notated. These chords, over a sixteen minute interval, move slowly from low to high on the keyboard, eventually ending at a high pitched cluster.

Ligeti's *Lux Aeterna* (1966) for sixteen-part mixed choir also contains cluster chords comprised of minor second intervals. The entrance and exit of each note in these chords is staggered. After analysis Brindle (1975) said:

> the music....seems to be suspended in time, fluctuating tenuously within small areas, the clusters gradually expanding and contracting almost imperceptibly. Note the metrical suspension, created by avoidance of the beat, and subdivision of crochets into three, four, and five parts. The multi-subdivision of voice parts is often designed to eliminate the old concept of 'choral melody on the top line', the prominent notes being so widely spaced and spread between the parts that no melody can emerge. (Brindle, 1975, p.167)

Frequently Ligeti worked with vocals, sometimes even, vocal effects. His *Aventures*, for example, contains vocal sounds as part of the score. "The music is continually punctuated by 'shouts, gulps, gasps, swoops, ahems, moans, laughs, groans'." (Ewen, 1971, p.149). The shouts, gulps, gasps, swoops, ahems, moans, laughs and groans are nonsensical and as a result, as Ewen (1971) argues, *Aventures* is neodadaistic in the way in which Ligeti uses these everyday vocal sounds. Ewen (1971) states, this is similar to dadaism, in that, "Dadaism represents a glorification of nonsense-be it in poetry, art, literature, or music." (p.145). Dadaisim came into existence during World War I, largely conceived as a backlash against totalitarianism by artists such as Tristan Tzara and later supported by those such as Picasso, Apollinaire, Modigliani, Kandinsky, and Marinetti.

Grout (1973) suggests that Ligeti was an influence upon composers of electronic music. He said:

> electronic sounds stimulated the invention of new sound effects to be obtained from voices and conventional instruments; this is especially noticeable in the music of the Hungarian Gyorgi Ligeti... (pp. 719-720)

By staggering exits and entrances and repeating tones, Ligeti was able to produce stunning effects. Upon hearing his *Aventures*, Eric Salzman for the *Stereo Review* wrote:

> The effect is at first comic, then dramatic...The instruments pick up where the voices leave off and both instrumental and vocal interjections take place in a curiously empty universe-as if it were

> more difficult and even more necessary than ever to make art and artistic expression in the void. (quoted in Ewen, 1971, p.149)

Much of Ligeti's music was written using standard staff notation. His *Lux Aeterna*, for example, contains the staff, treble clef, time signatures, as well as specified note values and pitch. Yet, Ligeti also used graphic notation. His *Volumina* makes use of graphic notation to represent time, pitch and volume. The time is the total duration of the work-sixteen minutes. Pitch is represented by line shapes moving from low to high and volume by a dotted crescendo line increasing in volume to triple forte. Ligeti also made use of things such as time duration markings. In *Artikulation* (1958), for example, at the bottom of the score one finds the intervals: 210, 211, 212, 213, 214, 215, 216, 217, etc. (Griffiths, 1978, p.161).

In terms of indeterminacy, it exists in Ligeti's *Volumina* in the realm of time and pitch. According to Brindle (1975):

> the thickness of the clusters (for each hand and the pedals) being shown only approximately. The duration of the passage is not indicated only the total duration of the work is given..., nor is the registration, except that each hand plays on a different manual. There is a general crescendo and the passage ends with the left hand holding a high cluster on the 'great' organ with all couplers on (in this piece an assistant controls all stops and couplers). (pp.69-71)

Ligeti also made use of indeterminacy in his 1958 composition *Artikulation*. According to Griffiths (1978), a recording of Ligeti's *Artikulation* comes with a 'listening

score'. "The shapes and symbols, in various colours, represent what is heard." (p.161).

Ligeti was also involved in writing aleatoric music whereby chance was a major part of the listening experience. According to Griffiths (1978):

> the listening experience itself can become aleatory in music subject to 'aural illusions', such as that of Gyorgi Ligeti...In many of his works, including the orchestral *Atmospheres* (1961) and the large-scale Requiem (1963-5), the textures are so complex and so active that they cannot be perceived in the whole: instead the ear selects, makes its own combinations, even hears things that are not there. (p.178)

While on their own, each part may appear easy but combined with others, they become complex. As a result, Ligeti's music can be difficult to perform. Brindle (1975) argues that Ligeti's *Aventures* is such a piece:

> (written as early as 1926) (it) contains individual soprano, alto, and baritone parts. Though difficult, they are perfectly possible by themselves, but the real problems rear their heads when the three parts and the accompaniment are put together. (p.166)

For example, singers must enter and exit amongst each other but they never really know where they are in relation to each other.

Much of Ligeti's music is not difficult. His *Lux Aeterna* (1966) for sixteen-part mixed choir, for example, is, according to Brindle (1975):

> built on an essentially very sparse musical skeleton. The music begins...with a unison F above middle C. Other sounds are gradually introduced to form clusters, and the note-span spreads almost imperceptibly upwards to cover an octave on the A

> above middle C. from this point the music then spreads downwards until it ends and octave lower than the first F. The whole of this movement occupies eight-and-a-half minutes... (p.167)

John Cage

John Cage (1912-1992) was born in Los Angeles to highly cultured parents; his father was a successful inventor and his mother, an editor with the *Los Angeles Times*. In Los Angeles, Cage studied the piano with various neighbourhood teachers as well as an aunt. Cage was required, as were most students, to play the Classical and Romantic literature which included the works of Bach, Beethoven and Moszkowski. Although Cage never liked this repertoire he did admit to Reynolds (1967) that he was drawn to the music of Grieg.

From 1928 to 1930, Cage attended Pomona College where he studied piano. After leaving college, he continued to study music but this time in Paris with Lazare Levy. In 1933, Cage moved to New York to study harmony and composition with Adolf Weiss who was a former pupil of Schoenberg. A year and a half later, he returned to Los Angeles to study with Schoenberg. As well, Cage studied with Edgard Varese and Henry Cowell. In later life, Cage taught at a variety of music institutions including the Cornish School in Seattle.

Due to his extensive musical background, Cage was able to draw from many musical sources. For example, although he was not interested in exploring functional harmony and melody, some of his early works were tonal. His *Amores* of

1943, for instance, makes use of pentatonic scales. Rather than pursue functional harmony or melody, Cage was interested in the music and ideas of the East as opposed to the West. As a result, one tends to find traces of Chinese theatre music, Indonisian gamelans and Indian ragas in the early music of John Cage.

Cage was not interested in pursuing the techniques of serialism, yet as a result of his studies, he did dabble for a short time. Although, as we shall see, Cage's use of number deviated greatly from that of Schoenberg or Webern. At the same time, though, Cage was influenced by Webern due to the importance Webern placed on serializing silence. This is one of the reasons Cage included the concept of silence in his compositions.

Arnold Schoenberg said, John Cage was "...more of an inventor than a composer."(quoted in Hansen, p.391). Cage was interested in the notion of experimenting with concepts. As Austin (1966) noted, Cage was one of the first composers to accept the term "experimental" as applied to his music. The notion of experimental is evident, for, from the beginning, Cage was always interested in inventing new means of composition rather than simply mastering old ones. As a result of Cage's search for new ways and means, he was involved in everything from percussion ensembles, music for radios, prepared piano, improvisation, random choice, indeterminacy, Musique Concrete, electronic works, graphic

notation, and visual affects akin to new theatre.

Cage began his professional career writing music for dance companies and choreographers such as Merce Cunningham. The music Cage wrote for dance was composed generally with percussion instruments in mind. There are several reasons for this. For one, percussion instruments, like drums or gongs, created complex unpitched sounds and as a result Cage was able to explore such areas as atonality. With his *First Construction in Metal* (1939), Cage had

> exploited the percussion ensemble and shown how fascinating music could be when written without reliance on pitched sounds and the melodies and harmonies that go with them. (Brindle, 1975, p.6)

Cage heard how percussion was used in music of the Far East and Africa and he knew the percussion music of composers such as Edgard Varese and as with Varese, Cage had the desire to explore all sounds. As a result, the standard percussion instruments for which Cage wrote, such as the marimba and vibraphone, began to give way to more unorthodox sound producing devices such as tin cans and sheets of metal. These were used because they were "found objects" and it was believed they produced sounds from the environment. Cage also scored his compositions for unorthodox percussion instruments because they were unusual, inexpensive, readily accessible and mobile in terms of transporting to and from rehearsal or performance.

Another reason Cage wrote for percussion instruments was so that he could explore rhythmic structure. Cage was

not interested in creating music with a steady pulse or even odd metrical combinations. In fact, his music usually bore no relation to the actual dance and visa versa. According to Nyman (1974), in Cage's

> pre-chance compositions for prepared piano and percussion ensembles, Cage showed that his interest lay not in *rhythms* (individual rhythmic patterns) but in *rhythm* as structure, the 'division of actual time by conventional metrical means, meter taken as simply the measurement of quantity'. (Nyman, 1974, p.28)

In other words, rhythm for Cage was the total length of a particular section or the entire composition as a whole.

According to Nyman (1974), Cage's pre-chance compositions were concerned with "ideas of order" as opposed to his later compositions concerned with "ideas of no order" (call it: improvisation, chance, random choice, indeterminacy or aleatory). In other words:

> Cage's ideas of unity...were based on the use of arithmetical proportions as regards structure (the division of the whole into parts, large and small)....Cage based his rhythmic structures on a square root principle: large lengths have the same relation within the whole as the small lengths have within a unit of it. The 'empty structure' would be plotted beforehand and it acted as a pre-formed frame which could then be filled with any sounds or silences according to taste (*4' 33''* is, of course, nothing more than an empty frame). (Nyman, 1974, p.29)

While Cage held no interest in pursuing the path of integral serialism, he did write compositions based upon number. He wrote pieces with elaborate precompositional plans, similar but not identical to serial devices. According to Brindle (1975):

> Between the prewar *Construction in Metal* and *Music of Changes* (1951) the structure of several works is based on a number of measures having a square root, so that the larger lengths have the same relation within the whole as the small lengths have within the larger units. (p.48)

For example, *First Construction in Metal*

> contains sixteen parts each containing sixteen measures. Each of the sixteen measures is divided into five phrases of four measures, three measures, two measures, three measures, and four measures, and the sixteen parts of the whole are grouped in large sections in the same proportion: 4,3,2,3,4. (Hansen, 1967, p.392)

Cage had an interest in Indian music and knowledge of Stockhausen's use of chance operation and as a result, he came to the conclusion that improvisation was an important aspect of music. For Cage, this began as chance operations. As was noted, "Cage's ideas of unity...were based on the use of arithmetical proportions as regards structure (the division of the whole into parts, large and small)." As a result, "This 'formalistic' control left it possible for method (note-to-note procedure), materials (sounds and silences) and form (continuity) to remain uncontrolled... (Nyman, 1974, p.29). Cage then used chance procedure to determine method, materials and form.

Cage was aware that dice were used to determine note durations in serial music. As well, about 1947 Cage became involved in Oriental philosophy and as a result, he used "...dice and 'chance' procedures culled from the Chinese *I-Ching* treatise." (Brindle, 1975, p.75). According to Brindle (1975), a description of Cage's method of composition based

on the *I Ching*, as applied in *Imaginary Landscape No. IV* and *Music of Changes*, is given in the article 'Composition' (1952) included in Cage's book *Silence*. Basically, the system comprises the formation of hexagrams derived from the tossing of coins.

Of chance, Cage (1952) said:

> It is thus possible to make a musical composition the continuity of which is free of individual taste and memory (psychology) and also of literature and 'traditions' of the art. The sounds enter the time-space centered within themselves, unimpeded by service to any abstraction, their 360 degrees of circumference free for an infinite play of interpenetration. Value judgments are not in the nature of this work as regards either composition, performance or listening. The idea of relation (the idea:2) being absent, anything (the idea:1) may happen. A 'mistake' is beside the point, for once anything happens it authentically is. (quoted in Brindle, 1975, p.75)

Yet, as Brindle argues, the idea of freedom as regards the construction or performance of a musical composition is only a concept not a reality. In other words, there is always some element of control or decision making taking place.

As a result of his studies of Zen philosophy, the teachings of Edgard Varese and Cage's love of nature, Cage came to the conclusion that any and all sound could be used as music. Of Varese, Cage said:

> more clearly and actively than anyone else of his generation, he established the present nature of music. This nature does not arise from pitch relations (consonance-dissonance), but arises from an acceptance of all audible phenomena as material proper to music. (quoted in Hansen, 1967, p.385)

By moving away from traditional harmony and melody and

accepting the doctrines of Zen Buddhism, that is, accepting all sound as music, Cage believed that he was "...*freeing* music-or, as he might have put it, freeing sounds of music." (Nyman, 1974, p.28.). In *Silence* Cage explains:

> And what is the purpose of writing music? One is, of course, not dealing with purposes but dealing with sounds....purposeful purposelessness of a purposeless play....not an attempt to bring order out of chaos not to suggest improvements in creation, but simply a way of waking up to the very life we're living, which is so excellent once one gets one's mind and one's desires out of its way and lets it act on its own accord. (quoted in Hansen, 1967, p.392)

Cage believed that chance procedure or indeterminacy was a way of freeing the music by removing the will of the composer from the composition or its performance. It is important to note, though, Cage did differentiate between chance operations and indeterminacy stating:

> In the case of chance operations, one knows more or less the elements of the universe with which one is dealing, whereas in indeterminacy, I like to think (and perhaps I fool myself and pull the wool over my eyes) that I'm outside the circle of a known universe, and dealing with things that I literally don't know anything about. (quoted in Reynolds, 1978, p.337)

As early as 1958, Cage used indeterminacy in terms of time, pitch, form and space but he was not the first to make use of indeterminate time duration as Stockhausen had used it in his 1956 composition *Zeitmasse.* In the score, Stockhausen instructs the oboe to play "as slow as possible", the English horn to play "slow-quickening" and the clarinet to begin "after a pause of imprecise duration."

(quoted in Brindle, 1975, p.63). Cage, in turn, in his *Concert for Piano and Orchestra* includes letter names for the notes to be played but no duration is indicated. According to Cage this is because they are to be performed "any duration." (quoted in Brindle, 1975, p.78).

Pitch indeterminacy exists in the music of John Cage although its usage can be traced back to composers such as Schoenberg, Berio, Morton Feldman, Stockhausen, Penderecki and Ligeti, all of whom employed unpitched percussion instruments and *Sprechstimme*. At the same time, Cage made use of unpitched percussion instruments and *Sprechstimme* but rather than simply leave the pitch of the note up to the performer, Cage would often leave the sound produced up to the performer. For example, his *Music of Changes* (1951) contains noises or what Nyman (1974) calls, "...sounds of indefinite pitch..." (p.52). As well, form indeterminacy in terms of the order or choice of sections occurs in the music of Cage just as it does in the music of Stockhausen, Berio and Boulez. For example, Cage's *Atlas Eclipticalas* has indeterminate form in that it contains 86 instrumental parts "to be played in whole or part, with or without *Winter Music*."(quoted in Brindle, 1975, p.78).

Cage used indeterminacy other than just to govern time, pitch and form. For instance, his *Variations III* is "for one or any number of persons performing any actions." As well, his composition *34' 46.776* is "To be used in whole or part

to provide a solo or ensemble for any combination of pianists, string players, percussionists." Finally, Cage's *Concert for Piano and Orchestra* is

> to be performed in whole or part, any duration, any number of the above performers, as a solo, chamber ensemble, symphony, concert for PF, and Orch., aria. (quoted in Brindle, 1975, p.78)

As with Varese, Cage made use of space indeterminacy. According to Cage:

> players are disposed in various positions round a central audience, or to move to different positions, or even placed in different locations inside and outside a building. In this way, listeners hear instruments differently, depending on whether they are nearby or far off, bringing 'a unique acoustical experience to each pair of ears' (as Cage writes in Composition as Process', *Silence* p.53). In some cases, the audience should preferably move around in order to hear the various effects. Indeed no seating should be provided-ideally performers and audience should be disposed on revolving platforms and moving staircases. (quoted in Brindle, 1975, p.80)

In terms of the prepared piano, Cage began preparing the piano sometime around 1938. He inserted screws, bolts, rubber and wood at various predetermined places for a number of reasons. For one, he had seen Henry Cowell do it and he was intrigued by the unusual sounds that were produced. Secondly, by treating the piano like a percussion instrument, new sonorities and sound qualities were brought into existence, and the old concepts of precise pitch and formal scales were discarded. As well, it was possible to create complex unpitched sounds not at all unlike those of the Indonesian gamelan.

Cage's first piece for prepared piano was *Bacchanale* of 1938. In it, Cage needed percussion sounds and the only available instrument was a piano so he prepared the piano in the manner of Henry Cowell. This meant stuffing all kinds of material between the strings on the soundboard: bolts, screws, nuts, wood, felt, spoons, clothespins and even boxes. Thus, the prepared piano was an ideal instrument to accompany dance as most dance studios owned one. So, for Cage, the "prepared piano" was like a one-instrument percussion ensemble for "a single performer." (Ewen, 1971, p.152).

In his *Concerto* for prepared piano and orchestra (1951), Cage used chance operations to determine the order of material. He used squares on which he set the musical material and then used chance operations to get from square to square. Chance operations were also used to determine the amplitude, duration and content of Cage's *Imaginary Landscapes No. 4*. *Imaginary Landscapes No. 4* (1951) was written for 12 radios which are to be

> manipulated by twenty-four performers, two for each instrument. The performers toy with the dials not only to get snatches of a program, a commercial, or even static, but also to control the volume. (Ewen, 1962, pp.280-281)

According to Nyman (1974), "Chance operations were used to determine the loudness levels, durations and station tunings on the 12 radios." (p.53).

Performance indeterminacy exists in Cage's *Imaginary*

Landscapes No. 4 as Nyman (1974) argues:

> unpredictability is guaranteed by the fact that although the timings, wave-lengths and volume control changes are common to all performances, the piece will never sound the same since the music broadcast on the given wave lengths will differ on each occasion and depend on factors beyond Cage's immediate control. (p.53)

Imaginary Landscapes No. 4 is not only an exercise in chance operation and indeterminacy, it also draws attention to what Griffiths called "The arbitrary nature of broadcast material." (1978, p.165). In other words, the way in which we tend to remain passive in the face of media overkill. As well, Cage was interested in exploring the concept of noise which he was able to produce using 12 radios tuned to different stations. This tied in with his knowledge of the noise making machines of the Futurists.

Cage was also involved in Musique Concrete. In fact, he predated it with his work in disc manipulation. Cage's interest in disc and tape manipulation was due in part to his association with Pierre Schaeffer and Pierre Henri and to the notion of collage or juxtaposition put forward by those such as Picasso, Braque, Charles Ives and Henry Cowell, to name but a few. With tape collage it was possible for Cage to address the notion that sound is all around us. According to Griffiths (1978):

> The recordings of Cage's *Variations IV* (1964) include scraps of music and speech of many different kinds, all willingly admitted in a free-for-all image of what Cage has referred to...as 'Mcluhan's point that nowadays everything happens at once'. (p.198)

Cage's first tape piece was *Williams Mix* of 1952. Cage began by building up a vast library of sounds on tape, based on the concept that any sound can be music. According to Nyman (1974), Cage

> divided the available sounds into six non-exclusive categories: city sounds, country sounds, electronic sounds, manually-produced sounds 'including the literature of music', wind-produced sounds 'including songs' and small sounds requiring amplification to be heard with the others. (p.41)

Cage then used "...chance techniques to dictate how the tape should be cut, spliced together and combined." (Nyman, 1974, p.41).

Cage began working with electronics as early as 1939. His *Imaginary Landscape No. 1*, for example, contains recordings of frequencies used to test audio equipment. According to Brindle (1975), "John Cage's *Imaginary Landscapes No. 1* (1939)-had oscillator frequencies recorded on two 78 r.p.m. grammophone records..." (p.99). Cage asked the musicians to "...perform with frequency recordings on variable speed turntables." (Griffiths, 1978, p.116). Thus, in 1939, Cage had "...created the first composed piece for electrical reproduction apparatus." (Griffiths, 1978, p.116).

As well as writing compositions for audio-frequency oscillators, Cage wrote for "...electric wire coils. (Ewen, 1961, p.281). In fact, Cage wrote many works using electronics. For example, his first tape piece *Williams Mix*

of 1952 is an electronic work, in that, it contains both electronic and amplified sounds. (Nyman, 1974, p.41). As well, in his *Reunion* (1968)

> Cage requires electronics and a chess board to make his chance music. The chess board is electrified. Two people play a game, and the movements they create become magnified sounds by passing through an electronic filter. (Ewen, 1971, pp.140-141)

From amplifying live sound, to projecting it in space, as well as modifying it, Cage used electronics in a number of ways. Once in performance he

> attached contact microphones to instruments and scratched record pick-ups and mike heads, clogging the lines of amplified communication with violent, random electronic 'distortion'; he sent electronic feedback whirling through speaker systems across the thresholds of perception and pain; he smoked cigarettes and swallowed water, contact mike at throat, volume at full blast. (Salzman, 1967, p.155)

Cage was also involved in computer music. According to Brindle (1975), Cage's *HPSCHD* of 1967 was conceived on the Illiac computer at Illinois University.

> This work, based on harpsichord type-sounds, comprises fifty-one tapes each of twenty minutes duration which can be played in any combination, or all at once, together with seven live harpsichords. (p.125)

In performance this was combined with other media including film and slides.

Along with standard notation, Cage also made use of graphic notation. Often his graphic scores cannot be read literally. In Cage's *Concert for Piano and Orchestra*, for example, the staff lines as well as the treble and bass clef

do not denote clefs or pitches, rather, they are interpretations of the use of clefs and staves in a traditional score. The actual notes in Cage's score are represented by note names affixed to circles and lines which intersect. The circles are used to represent note-groupings yet no time duration is indicated, rather, the performer is to move from one note-grouping to the next as each circle comes into view. The performer, therefore, has a choice as to the order of occurrence of each note in each grouping. Thus, according to Brindle (1975), Cage's score "...shows a typical note grouping which gives only an imprecise suggestion of an 'event'."(p.84).

Cage's score for *Water Music* is also graphic, in that, it uses language to instruct the performer. For example, at 5.4525 the performer is asked to "pour water from one receptacle to another"; at 5.25025 the performer is to read standard notation and play a whole note D above the treble clef *ffff*. This D is tied to an eighth note of the same pitch to sound until 5.5525; at 5.5625 the performer is to read the notation and play a run of 16th notes *ffff* ending on a staccato C above the treble clef ; at 6.215 the performer is asked to make a sound on a "siren-whistle" which is represented by a squiggly line broken in the middle; at 6.3025 the performer is asked to read notation and play another ascending 16th note phrase *ffff* ending on a staccato C above the treble clef; and at 6.40 the performer

is instructed to "turn radio off." (Brindle, 1975, p.93).

Largely based on the notion that theatre is all around us, Cage took full advantage of incorporating different media. For example, his composition *4' 33''* (1952) can be seen as pure theatre. As well, his *Theatre Piece* of 1960 combines music with dance and theatre, in that, it includes one to eight performers (musicians, dancers, singers, etc.) whose actions are chosen from a range of twenty nouns or verbs by the performer. Performances such as these demonstrate why Cage's music has been likened to dadaisim in that it can infuriate as well as baffle. In this sense, it is a kind of anti-art, in that, it attempts to break down the distinction between high art and fun.

Nyman (1974) wrote of a "happening" which occurred at Black Mountain College in 1952. It consisted of Cage going up a ladder and delivering

> a lecture which included programmed silences; poets M. C. Richards and Charles Olson went up another ladder at different times and read; at one end of the hall was a movie and at the other slides were projected; Robert Rauschenberg played an old hand-wound grammophone, David Tudor was at the piano and Merce Cunningham and other dancers moved around the audience, while some of Raushenberg's white paintings were suspended above the proceedings. The seating arrangement was special, consisting of a square composed of four triangles whose apexes merged towards the centre but didn't meet; movement took place in the large centre space and in the aisles, although the larger part of the action happened outside the square. (p.60)

This type of activity became commonplace with Cage and from 1952 onwards almost all of Cage's compositions involved some

kind of theatre of mixed-media.

Chapter Four

Music Education Based Upon Twentieth-Century Musical Techniques

Suggestions for a Curriculum

If music is to be considered a necessary aspect of public education, as was argued, it should align itself more with intellectual pursuits. One of the ways to do this is by having students develop a knowledge and understanding of music. This, I argue, is something which can be achieved by using twentieth-century musical techniques in the classroom. These techniques can be used to develop knowledge and understanding because they are conceptual by nature. They are not based upon skills but rather concepts. All students will have an opportunity to learn both the techniques as well as the concepts since the techniques arise out of the concepts.

The incorporation of twentieth-century musical techniques will help keep students abreast of what today's musicians are up to. In so doing, music education will remain immediate and vital for, without knowledge of the present, music education remains rooted only in the past. That is not to say that musical history should not be included in the music class but rather that it should not be at the expense of twentieth-century musical techniques and beliefs.

Another reason twentieth-century musical techniques should be included in the public schools of British Columbia

is because they are within the aims of the Ministry of Education. For example, the 1980 *Secondary Curriculum Guide* states, by the end of music 12 "...the student should have facility in... (particular) ...Learning Outcomes..." (p.173). The guide lists a large number of learning outcomes including such twentieth-century musical techniques as Musique Concrete and graphic notation. As well, the 1985 *Elementary Curriculum Guide* includes twentieth-century music in its curriculum. It suggests that, among other things, students learn of the influence of technology on electronic music.

Walker (1984) notes, traditionally there are three goals in music education: "...composing, performing, and listening." (p.viii). A look at Ministry of Education statements of aims show that these are also the goals of music in the public schools of British Columbia. The 1980 *Secondary Curriculum Guide* states, "Music education provides an opportunity to bring art form to life: to respond, express, perform and create."(p.1). As well, one of the goals contained within the 1985 *Curriculum Guide* for elementary fine arts education is "to develop the child's ability to explore, express, communicate, interpret, and create." (p.3). These aims are in the hopes that students develop "...an appreciation of (and for) the fine arts..."(p.vi). In terms of composing, performing and listening, the following are suggested musical activities

based on twentieth-century musical techniques.

Composition

Standard Notation

Music students in the public school should know something of standard notation. That is, they should learn of such things as treble and bass clefs, key signatures, time signatures, names of lines and spaces on the staff, bar lines to determine time frames, different note and rest values such as the whole note, half-note rest, quarter note and dotted eighth-note rest, etc. They should learn of how some instruments, such as the guitar, sound an octave lower when reading the same note on the staff as that of a piano or other concert instrument. They should also learn something of dynamic markings, accents, ties, etc. Yet, it is not necessary that the public school music student be able to use the symbols of standard notation correctly, only that he or she develop an understanding of the concepts which underlie them.

Students should have an opportunity to experiment with at least some of the symbols of standard staff notation. They could write a piece of music which employs at least some of it. For example, students could be asked to write some music in the treble clef containing a bass line, chords and melody in any time or key signature the student chooses. The teacher, or student, could then play the composition so that the composer and class can hear what it sounds like. It

is not necessary for students, though, to compose their works at the piano, or any other musical instrument; only that they attempt to understand the concepts behind these musical symbols. It is also not important that pupils follow the rules of traditional harmony or counterpoint, only that they have an opportunity to experiment with concepts.

Once students have a basic understanding of the concepts which underlie standard notation, the instructor should teach the class other related concepts, such as, how musicians combine musical tones to form chords. By using the piano, the teacher can demonstrate to the class how notes can be stacked in different ways depending upon the kind of sound one wishes to hear. An example might be, the difference between triads and large cluster chords. As well, students can learn that the movement of notes from one chord to another can be rule-governed i.e., voice-leading and counterpoint, etc. At the same time, students can learn that rules exist to govern such things as bass lines and melodies in relation to chords and their movement.

Graphic Notation

As was noted in chapters two and three, graphic notation consists of many things including bits of conventional staff notation as well as graphic suggestions of melodic curves, dynamic ranges, rhythms, to even more impressionistic and meager directives. As well, there are more "standard" uses of graphic notation in the scores of

many composers from the 1950s onwards; Berio, for example, in his *Sequenza V.* To familiarize students with graphic notation, instructors can look to the works of composers such as Rudolf Komorous and R. Murray Schafer. In *Sladka Kralovna die susse konigin* (the sweet queen, 1965), for example, Komorous makes use of such conventional notation as bass and treble clefs as well as pitched notes and dynamic markings but the length of the notes is wholly dependent upon the clock. In other words, Komorous has drawn in time duration lines i.e., 1 minute, 2 minutes, etc., instead of bar lines.

R. Murray Schafer's score of *Epitaph For Moonlight* (MCMLXlX) for youth choir and percussion, on the other hand, makes no use of standard staff notation whatsoever. Only what Schafer calls "pictographs." These are: drawings of all shapes and sizes used to represent sounds. Some symbolize crescendos (from soft to loud) as well as decrescendos (from loud to soft), while others represent the types of sounds to be obtained. For example, the choir is asked to sing "moo" but the actual pitch of the voice is only approximated. The sounding of voices and percussion is wholly dependent upon time frames, as with the previous piece, in relation to the clock and each section is to be a certain length such as twenty seconds or thirty seconds. (Schafer, 1976, pp.206-211). Scores by R. Murray Schafer, as well as many other Canadian contemporary composers, can be found at many

libraries as well as the Canadian Music Centre in Vancouver, B.C. For more on the Canadian Music Centre see page 230.

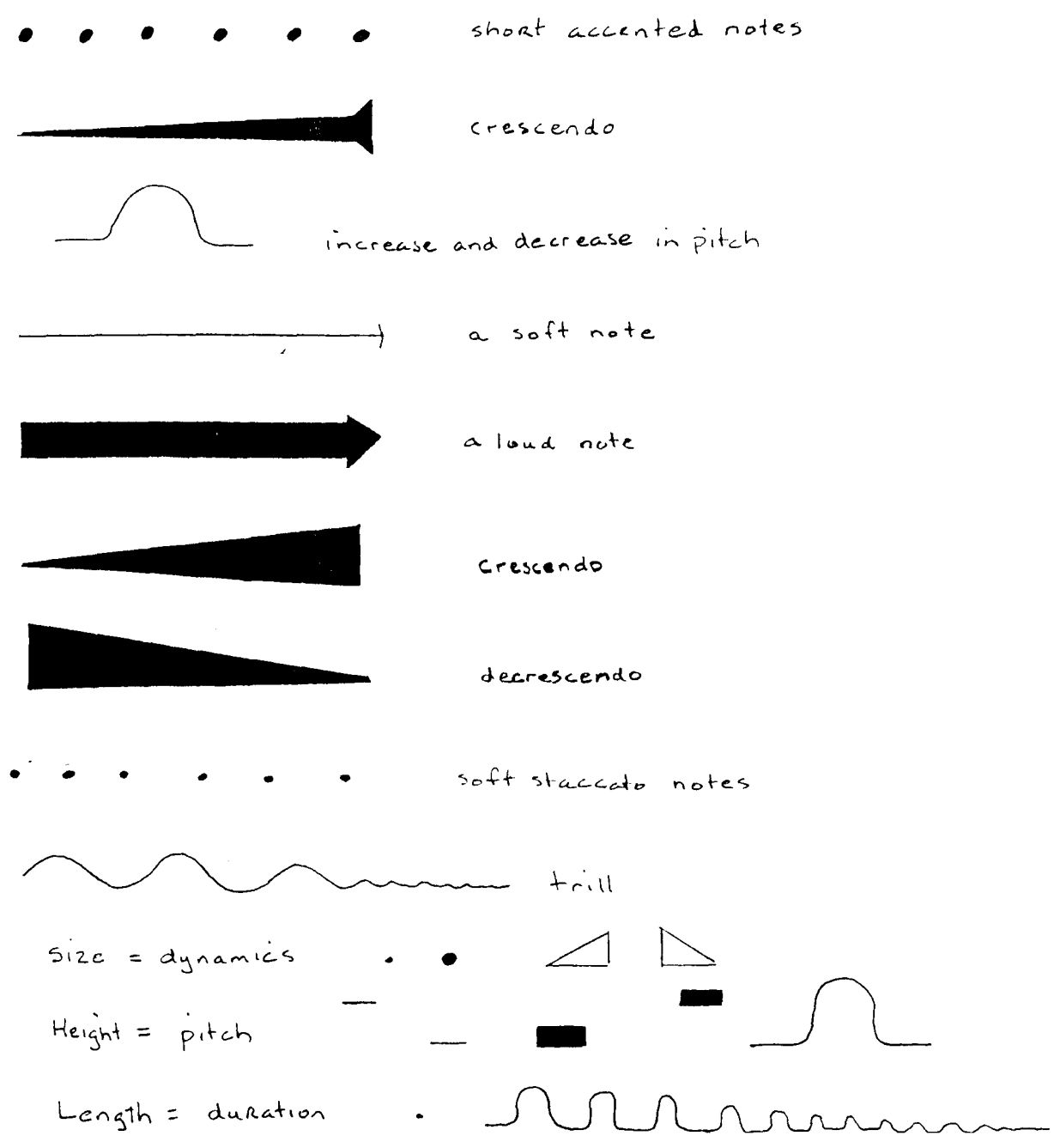
Once students have become familiar with graphic notation, they should learn how to write their own. Concepts which should be addressed include: dynamics, pitch and duration. See Figure 4.1 for examples of how R. Murray Schafer (1976) represents these concepts graphically. Along with dynamics, pitch and duration, students should also attempt to represent such things as organum (parallel movement), oblique or contrary movement, timbre, noise, silence, amplitude, melody, accompaniment, rhythm, text and juxtaposition.

After students have had a chance at representing concepts such as those mentioned, they should be encouraged to create scores which make use of their pictographs. Once these have been completed, students should perform each others works on any instruments available in the class. Discussions can follow as to whether or not the scores were easy to interpret and the pictographs were accurate representations of the types of sounds the composer wished to hear.

Representation

It is important students in the public school learn that composers have always used musical sounds to represent things. From the musical intervals deemed consonant, since the time of the ancient Greeks, used to represent balance,

Figure 4.1 The Graphic Notation of R. Murray Schafer



R. Murray Schafer, "Creative Music Education", 1976.

harmony and proportion, to the leitmotifs of Richard Wagner used to represent characters, situations and emotions. From the nonfunctional harmony of Debussy used to evoke impressions and moods to the twentieth-century music of Varese whereby the process of composition becomes analogous to other processes occurring in the natural sciences and visual arts.

Once the educator has gone over some of the concepts regarding representation, the music class should be allowed to represent their own emotions using graphic notation. The instructor can begin by having students represent such emotions as: love, hate, anger, joy, awe and grief, pictorally. For example love can be represented by small hearts displayed all over the page in bright red or purple colors. The performer can interpret this to mean a delivery of short bursts of sound from his or her wind instrument. As well, notions of anger can be represented by dark clusters of dots on the page to be played by some low sounding instrument such as a deep voice. The play between love and anger can also be examined in terms of the perceived difference between consonance and dissonance in Western musical history. The teacher explaining, how, at different periods in Western musical history, notions of consonance and dissonance change.

The concept of leitmotifs is something that can also be experimented with. Students can create sounds or musical

passages which they think represent the characteristics of a particular student in the room. Once these sounds are played, students can try and guess who it represented and why. Students can also create compositions which relate to events in the news or their everyday lives. Upon performing such works, the class can try and guess what the situation was and what it represented. As well, pupils can create works whereby the process of composition is analogous to another process; falling rain can be represented by sounds. Sounds which move from high to low growing in intensity as it rains harder and stopping finally as the rain ends revealing a rainbow represented by arcs of sound. After a composition such as this, students can be asked if they could guess what it was the sounds represented. Then, the composer could explain to the class what his or her intentions really were.

Nonrepresentation

The instructor should teach students about nonrepresentation in music by discussing with students those composers, such as Varese, Schoenberg, Webern, Berg, and Stockhausen, whose music often did not represent anything at all. In other words, composers such as these were not concerned with representing feelings or events in sound. Rather, they often created sounds simply for their own sake. Students too can create their own nonrepresentational sounds on an any sound producing objects found in the classroom.

They can produce sounds from such objects as the piano or voice with the only criterion being, the student must have an interest in the sound. Be it a loud or a soft sound, abrasive or smooth, it doesn't matter so long as it is a sound the student wishes to hear.

Students can also create sounds over which they have no control such as the dropping of objects, (screw, erasers, pencils, etc.), on to the strings of the piano. In this way, students learn to become more aware of different and unusual sounds. This approach leads well into the notion of environmental sounds or found sounds; sounds which occur in the environment. The sound of traffic, of construction, of birds singing, for example. Students should be encouraged to capture sounds such as these and others on tape and bring them into the classroom so that they can be heard and discussed. Upon playback, classmates, for example, could try to guess what kind of sounds it was that they were hearing.

Determinacy

Students should learn something of the nature of determinacy in music. That is, composition which is exacting by nature, in that its performance is controlled by rules. This concept can be found in such techniques as counterpoint, functional harmony and serialism. The instructor can look to *Gradus Ad Parnassum* (The Study of Counterpoint, Mann, 1965) by Johann Joseph Fux for many of the rules of counterpoint. Fux's work contains a list of the

movement of musical notes in relation to each other in accordance with man-made laws. As was noted, students should know that most of these laws are based on notions of harmony, balance, proportion, consonance and dissonance. In terms of counterpoint, examples can also be found in any of the works of J. S. Bach.

For an overview of functional harmony, the instructor may wish to look to the treatises of Jean Philippe Rameau (1683-1764). As Walker (1990) notes, Rameau put forward the notion of functional harmony, that is, a "...harmonic progression defined in terms of progressions by the root of a chord rather than by the actual bass note."(p.87). While vertical harmony and triads with bass notes had been used before, Rameau was the first to envision bass notes as the fundamental root of the chord. According to Walker, this meant "...harmonic movement could be better codified." (p.87).

Although the rules for functional harmony are detailed, they can be found in most musical theory books. These should be discussed with students in order to give them an indication of the rules of functional harmony which have been used to govern musical construction. According to Walker, most of these theories have been recognized in the music of Liszt, Chopin, Wagner, Schumann, Brahms, Mahler and Richard Strauss. (p.87).

In terms of serial techniques, the 1980 *Secondary*

Curriculum Guide contains a very good sample of a dodecaphonic precis which can be used to demonstrate twelve-tone techniques. This exercise is to be found on page 202 of the secondary curriculum guide. The teacher should do this example on the board so that all students may see what is involved. A basic row or series is written first in its original state then it is expressed in retrograde, inversion and retrograde inversion. The teacher then uses this to create melodic material, as well as metre, rhythm and dynamics.

According to the secondary guide, the rules which govern the construction of a sample dodecaphonic precis are:

> 1. Any tone may be written in any octave. 2. The sequence of tones in each of the four series must be retained. (A note may be repeated out of sequence in the same octave if it is used in trills, tremolos or pedal figures). 3. Each of the four rows may be transposed at any interval. (The original row and its three derivations may be transposed eleven times, allowing twelve positions for each row. We now have forty-eight serial patterns that can be used in our writing, as long as the exact sequence of intervals in any series is preserved.) When composing for two parts, one row may be divided between the voices, or separate rows may be used simultaneously. When composing for multi-voice writing, one row may be arranged vertically, in chord structures, or separate rows may be used simultaneously. (p.202)

Other than simply listening to the sample precis, students should have an opportunity to see and hear scores and recordings by such twelve-tone composers as Schoenberg, Webern, Berg, Stravinsky, Stockhausen and Boulez.

Students should also get a turn at constructing music

according to principles or rules. It is necessary to begin first by creating the rules. For instance, there are four students: one sings, one plays the recorder, one the piano and one a cymbal. The one who sings is not allowed to make a sound until she hears a sound from the recorder or the cymbal. If she hears a high pitched sound from the recorder she is to produce a quiet sound. If she hears a quiet sound from the cymbal, she is to produce a loud sound. As soon as she hears any sound from the piano she is to try to mimic that sound. This, therefore, is a composition in which the rules stipulate the occurrence of sounds but not the actual sounds themselves.

If the intention is to create a composition which is entirely rule governed or controlled, one could dictate such things as the objects to be struck, their amplitude and duration. For example, sound producing objects might consist of a pipe, hubcap and cymbal. Using abbreviations, their row would read P, H, and C. The amplitude (how loudly these objects are struck) might be: quietly, average and loudly or Q, A and L. The duration or length of each sound consisting of short, middle and greatest whereby S = 1 second, M = 3 seconds and G = 6 seconds. The rows could then be arranged so that no occurrence in at least six was ever the same.

For example: P H C P H C
Q A L A Q L
S M G G S M

The performer begins by hitting the pipe quietly and

letting it ring for one second. Then he or she strikes the hubcap after the first second has passed with an average intensity letting it sound for three seconds until the end of the six occurrence whereby the piece ends. This results in a highly structured and rule governed composition with the rule being: no combination in at least six is permitted to repeat.

Indeterminacy

As was noted, composers such as John Cage worked with principles of indeterminacy whereby the occurrence of musical events, their amplitude and duration was determined by such things as number sequences, the choice of the performer or pure chance. To create indeterminate compositions in the classroom we can use our previous model but this time applying principles of chance to it. In the previous example, for instance, the occurrence of events, their volume and duration was determined by patterning but if we leave the order of occurrences up to the choice of the performer, we will have no control over the sequences. For example, P, H and C belong to group 1. Q, A and L belong to group 2 and S, M and G exist in group 3. The instructions to the performer on the score might read: "play any sound from group 1 in combination with group 2 and 3" and as a result, the composer has no control over which combination occurs as it is entirely up to the performer.

If we wish to use numbers to determine patterning we

can turn to such chance number producing devices as dice. Using one die marked with the numbers 1 through 6, we can assign the pattern P, Q and S as number 1, pattern H, A, M as number 2, pattern C, L, G as number 3, pattern P, A, G as number 4, pattern H, Q, S as number 5 and pattern C, L and M as number 6. If we roll the die and come up with a number six we put pattern one sixth in the composition. If on the second roll we rolled a number three we would put pattern number two third in the composition and so on with each roll determining the occurrence of each pattern. In a composition such as this, chance operations such as dice determine the occurrence of patterns.

To produce a composition based entirely on chance is impossible as one must decide on at least some of the parameters but it is possible to create a composition in which chance plays a major role. For example, we can leave the construction and performance of a composition completely up to the performer by letting the performer pick the sound producing objects he or she wishes to hear. We can also let the performer pick and choose how he or she wishes to play them. We can even let the performer decide how long (duration of sound event) he or she wishes to play them. But as soon as we title the piece *Thunder*, we have given the performer some indication of how to interpret the work. In other words, the title, the performers area of expertise, the genre itself, as well as the composers previous

compositions all help to contexualize and give the performer some notion of how to interpret a musical work. Therefore, some element of composition and performance will always be premised.

Exploring Sound

The exploration of sound is integral if one is to develop an understanding of music. Exploring sound can occur on any type of instrument available, be it, acoustic, electronic or a combination of both, depending upon what is available in the classroom. For example, students can be asked to get any sound producing object in the classroom and explore the kind of sound it produces. Sound producing objects might consist of guitars, recorders, pianos, portable video games, *Walkmans*, radios, etc. Remember, any object which produces sound will do. After listening to the sounds objects such as these produce, the teacher should ask such questions as: what kind of sound was it? How would you describe the sound? What happened when sounds from various objects were combined? Explorations such as these will help teach students to listen carefully to sounds in order to determine their make-up.

Not using classroom instruments, such as the piano or recorder, in traditional ways actually frees these instruments up for other uses. For example, students can be asked to play conventional instruments in unorthodox ways in order to explore sound. Such instruments as pianos and

recorders, for instance, have been demonstrated to be quite capable of producing unusual and imaginative sounds. The recorder, for example, can produce sounds which are shrill as well as soft. As well, students should be encouraged to go inside the piano to produce sounds by scraping the strings or preparing the strings with screws. Other techniques might include: unusual vocal sounds, spoken words, cries, whispers, harmonics on stringed instruments, flutter-tongue techniques on wind instruments, glissandos, dense chromatic clusters, tone clusters on the piano and the bowing of cymbals.

If there are tape machines, synthesizers, samplers, drum machines, or computers in the classroom then these too can be used to explore sound. Sequencers, for example, can be used to explore techniques such as serialism. All one has to do is input all twelve-tones and explore them in inverted, retrograde, or retrograde inverted forms as well in transposition. Techniques such as these can also be applied to rests, dynamics and other elements of music as the sequencer is equipped to handle these.

In the music class, drum machines are quite useful, in that, they can be used to demonstrate the difference between note values. For example, the difference between a dotted sixteenth note and a quarter note can be examined. As well, whole compositions or excerpts can be inputted in to drum machines and then played back through other midi instruments

producing novel sonorities. To write a chance piece all one has to do is input data determined randomly, or by using some other principle, into the drum machine. Then, have the drum machine trigger a synthesizer or sampler while choosing an unusual sound with say, a long decay, for effect. The result is an indeterminate electronic composition.

Computers can be used to explore the spectrum of sound. This includes such things as: frequency, amplitude, envelope, attack, decay, sustain, release, wave shapes, harmonic content, noise, phasing, and modulation. For these, all the teacher need do is purchase the software from any music store and obtain a proper midi input device. The computer will scan the sound and represent its constituent parts graphically on the screen. After demonstrating the make-up of musical sounds, the teacher can ask students to compose an electronic piece based on such techniques as Musique Concrete, unusual tunings, or determinate and indeterminate principles. Discussions which follow might center on how modern composers use computers to synchronize music with visual images (film, video, television, etc.). The teacher might also wish to tie this in with how music is used to sell movies, products, ideas and feelings.

It is important that educators include musical composition based on twentieth-century musical techniques in the curriculum of the public school. Not only because composition helps students develop a knowledge and

understanding of music and musical beliefs but also because it fosters creativity and provides students with a sense of ownership and vested interest. It develops student creativity because the act of composition itself is a creative one and as a result, students come to understand the creative process as well as the end result consisting of a final product.

Composition provides students with a sense of ownership and vested interest because students are involved in the making of music; they can be proud of their compositions and ideas. At the same time, they also come to understand the compositions and ideas of others. Students learn to become involved and as a result of investing their time, energy and intellect in composing musical works, they become more receptive to and interested in discussing music and musical beliefs. In terms of general music education, this has much more value than the acquisition of specialized musical skills.

Performance

All students should be given an opportunity to perform their own compositions as well as the compositions of others. At the same time, the works of notable composers should be included in the classroom as this will give students an idea of the context of twentieth-century music and performance. It is also a good idea for teachers to tie the performance of music in with other disciplines such as

dance or video as this helps provide both a variety of expression as well as a broader context for the music. At the same time, teachers should also facilitate performances for their students for the class, parents, school and other schools. Then teachers should encourage music students to talk to the audience about their music before or after a performance so that all will have a chance to understand it. Note: due to the fact that many twentieth-century compositions do not require conventional instrumentation, the music class will no longer continually be at the mercy of the school budget.

The Elements of Music

According to *Elson's Music Dictionary* (MCMlX), Pitch is "the tuning of sound" i.e., how high or how low the sound is. Harmony is "combining sounds (tones) into chords." Melody is "the leading part in a harmonized composition." Rhythm is the value, length, or duration of notes as well as "the division of musical ideas or sentences into metrical portions." Timbre is "the quality of tone or sound" and Dynamics are the "different degrees of power to be applied to the notes. For example *ppp* is very, very soft and quiet while *fff* is very, very loud. For examples of some of the elements of music, see figure 4.2.

Once the teacher has taught pupils some of the elements of music, he or she should introduce the students to musical scores that contain such symbols and concepts. This will

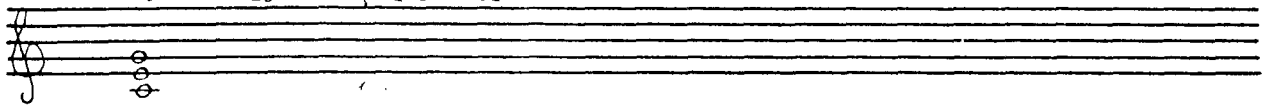
Figure 4.2 The Elements of Music

Pitch

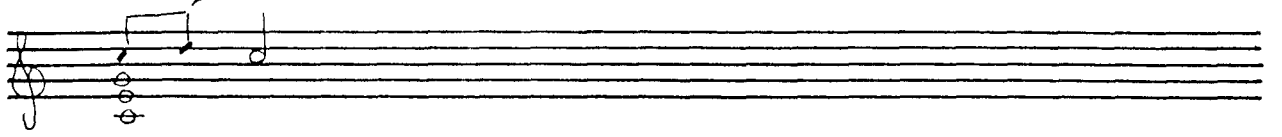
This c is pitched higher than this c.

Harmony

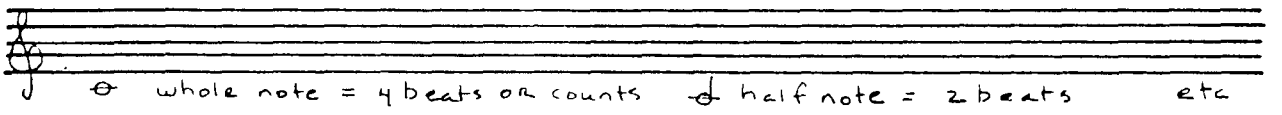
A harmonized C major chord



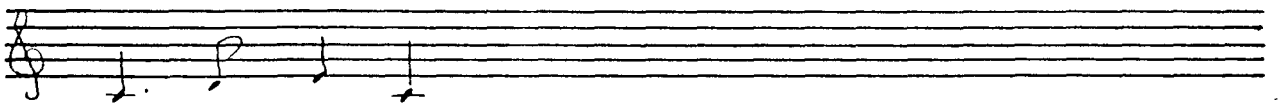
Melody



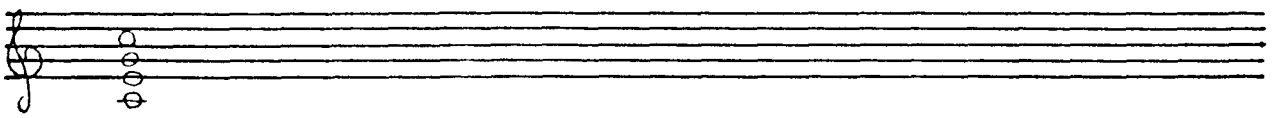
Rhythm (duration of note)



Rhythm of musical phrase



Timbre: using only saxophones to play the following chord produces a reedy quality.



help students tie their usage into a musical context. Afterwards, students should be encouraged to write a bit of music which makes use of these elements. The instructor could ask the class to write a short work using all or some of the elements listed above. Then the teacher could play the examples on the piano. It does not matter that pupils are not skilled in the usage of these elements, only that they have an opportunity to experiment with them. There should be no wrong or right usage, no wrong or right sound, only experimentation.

The Elements of Sound and Related Terms

As well as the elements of music, students should also learn of the elements of sound and other related terms. This will incorporate some of the concepts already covered in the components of music but will also cover new terms which have come about largely due to such things as scientific discoveries regarding the properties of sound, hearing and psychology in the twentieth century. According to the *Handbook for Acoustic Ecology* (Truax, 1978), pitch is similar to frequency in that it is "...the rate of repetition of the CYCLEs of Periodic quantity..."(p.53). Yet, the two differ in that pitch is only "The subjective impression of Frequency." (p.94); in other words, each individual hears and interprets pitch differently.

In terms of rhythm, according to Truax (1978), rhythm is "pattern in space and time. With sound, rhythm describes

the pattern of events in time..." "The speed of rhythm is its TEMPO."(p.105). In this way, rhythm can be regular or it can be syncopated and irregular. Rhythm can also be so slow that its periodicity (repetition rate) is indiscernible as well as so fast that it becomes either a solid tone or inaudible.

There are other concepts which the music student should learn of. These include: additive synthesis, aleatoric, amplitude, amplitude modulation, analog, attack, cycle, decay, digital, discreet, dynamic range, envelope, frequency modulation, fundamental, harmonic, harmonics, human ear, intensity, linear arithmatic synthesis, loudness, m.i.d.i., note-off, note-on, and oscillation. Also; partials, period, periodicity, phase, pink noise, pulse wave, release, resonance, sampling, sawtooth wave, signal processing, sound, spectrum, subtractive synthesis, sustain, transducer, transient, triangle wave, velocity, wave and white noise. There is not enough room here to describe all of these terms but the interested educator can look to Nisbett's *The Technique of the Sound Studio* (1979) as well as the *Handbook for Acoustic Ecology* (1978).

Once the instructor has gone over the elements of sound and other related terms with students, he or she should show and explain to students how composers have used these elements in their compositions. For example, John Cage's composition *Music of Changes* (1951) is based on the

following musical parameters: tempo, superimpositions, duration, sound/silence, and amplitude. In other words, Cage used these as elements of construction. (Campana, 1989, p.229). In turn, students can be asked to compose music which makes use of some of the elements of sound. For example, they can be asked to find three sounds which demonstrate the following parameters: attack, sustain and decay e.g., wood block, gong and cymbal. They could then assemble these sounds in some kind of order so as to construct a musical composition. Afterwards a discussion could center on the differences and similarities between the three sounds.

Suggested Listening

The British Columbia Ministry of Education holds that listening to music is an important aspect of public education. The Ministry contends that students are to learn to listen to music. That is, the elementary and secondary curriculum guides both suggest that students learn to listen attentively to music in order that they recognize, respond to, describe and create it. For students to achieve this goal, they must first learn what to listen for. The following, therefore, is a suggested listening list of twentieth-century music including suggestions on what students should listen for. This list is made up of a number of pioneering composers and their compositions, many of whom moved away from traditional notions of harmony, melody and

other musical conventions:

Bartok, Bela *Movement for Strings, Percussion and Celesta* (1936). Listen for examples of folk influences, pentatonic scales, tone clusters, and polyrhythms. The teacher should point out that Bartok moved away from the major-minor system and was influenced by Primitivism in visual art.

Cowell, Henry *Banshee* (listen for tone clusters) and *Aeolian Harp.* Listen for, discuss and demonstrate the concept of playing inside the piano.

Ives, Charles *Symphonies* (No. 4, 1916). Listen for a variety of thematic material occurring at once but in different keys. Listen also for inclusion/juxtaposition of American folk songs.

Ligeti, Gyorgi *Atmospheres, Lux Aeterna. Requiem* (1960s). Listen for tone clusters.

Messiaen, Olivier *Quatuor pour la fin du temps* (1941), *Trois petites liturgies pour la presence divine* (1944), *Turangalila* (1948), *Cinq rechants* (1949), and *Chronochromie* (1960). Listen and discuss Messiaen's movement away from functional harmony and melody and his search for new rhythms and sounds (i.e., bird songs). Discuss the play between Messiaen's historical musical beliefs (i.e., religion and representation) and his search for new sounds. Messiaen has also been accredited with creating the movement towards

serialism.

Stravinsky, Igor *The Firebird* (1910) and *Rite of Spring* (1913). Listen for rhythmic syncopation. Stravinsky was influenced by, among other things, jazz music. Discuss his belief in nonrepresentational sound. Many of his later works contained examples of twelve-tone writing as well as polyphony.

Varese, Edgard *Ionisation* (1932). Written for percussion instruments and piano. His search for new sonorities finds the orchestra made up entirely of assorted usual and unusual percussion instruments. Also incorporates a piano but it too is played like a percussion instrument.

Wagner, Richard *Tristan und Isolde* (1857-59). Listen for examples of chromaticism. Discuss Wagner's move away from functional harmony and his belief that the role of music is to serve the drama.

Xenaxis, Iannis *Orient-Occident III* (1959-60). A collage of sounds.

Impressionism (influenced by visual art and poetry):

Debussy, Claude *Prelude a l'apres midi d'un faune* (1894). Listen and discuss impressionistic use of harmony and melody, difficult rhythms, use of title to set atmosphere, use of fourth chords. Belief in non-representational sound i.e., sound for sound's sake.

Ravel, Maurice *Pavane pour une Infante defunte* (1899) or his

ballet *Daphnis et Chloe* (1909-11). Use of creative orchestration, folk influences, programmatic and suggestive titles.

Satie, Erik three *Gymnopedies* (1888). Examples of unresolved chords, modal harmonies, parallel fourth chords, surrealistic titles and unusual playing directions to musicians on score.

Expressionism (influenced by such things as visual art and containing examples of serialism, atonality and determinacy):

Berg, Alban *Wozzeck* (1922) and *Lyric Suite* (1925-26). Examples of atonality, *sprechstimme* (spoken song), chromaticism and serial techniques.

Schoenberg, Arnold *Transfigured Night* (1899), *Variations for Orchestra, Opus 16* (1909), *Pierrot Lunaire* (1912) and *Five Piano Pieces* (1923). Demonstrates such things as *Klangfarbenmelodie* (sound color), chromaticism, *Sprechstimme*, serial writing. Belief in the autonomy of musical sound. He influenced, among others, Berg, Webern, Stravinsky and Stockhausen.

Stockhausen, Karlheinz *Kontrapunkte* (1952). Examples of serial and pointillistic techniques.

Webern, Anton *Five Pieces for Orchestra* (1911-13), *Symphony* (1928) and *Cantata No. 1* (1940). Examples of serialism and atonality.

Musique Concrete and electroacoustic music (also ask pupils

to bring in musical examples of their own from sources such as rap, hip hop and metal):

Babbit, Milton *Philomel* (1964) for voice and tape.

The Beatles' *Sgt. Pepper's Lonely Hearts Club Band.* Tape manipulation in rock music.

Berio, Luciano *Omaggio a Joyce* (1958). Listen for random electronics and use of delay effects.

Cage, John *Fontana Mix* (1958) and *Cartridge Music* (1960). Discuss prepared tape (cut and spliced) and discuss indeterminacy. Also discuss Cage's belief that the process is more important than the result (from Zen Buddhism).

Chadabe, Joel *Echoes* (1972). Listen for acoustic strings with synthesizer sounds. Chadabe commissioned the first analog moog synthesizer and developed "Daisy" the computer which contained a random number generator.

Hendrix, Jimi *Are You Experienced?* Listen for tape manipulation and unusual electronic sounds in rock music i.e., distortion, feedback, delay, etc.

LeCaine, Hugh *Dripsody* (1955). Musique Concrete piece containing tape loops of one drop of water.

Lucier, Alvin (1980), *I Am Sitting in a Room.* A process piece in which the work (sound) evolves/transforms slowly over time.

Pink Floyd's *Dark Side of the Moon.* The use of tape manipulation in rock music.

Schaeffer, Pierre and Pierre Henri *Symphonie pour un Homme Seul* (1949). Random tuned sounds. Henri coined the term "Musique Concrete" The idea being, music as collage, as in the paintings of the era (Picasso, Braque, etc.).

Schafer, R. Murray *Threnody* (1960s). Electroacoustic work.

Stockhausen, Karlheinz *Gesang der Junglinge* (1955-56) and *Hymnen* (1966-67) for electroacoustic and *Momente* (1962) for spoken voice. Principles of determinacy and indeterminacy in scores. Pioneer of Musique Concrete using synthesis.

Subotnick, Morton *4 Butterflies* and *Silver Apples.* Use of Ghost electronics (signal processing). Acoustic instruments were miked and passed through a treatment box.

Torn, David *Clouds Over Mercury.* For guitar with effects processing.

Varese, Edgard *Poeme Electronic* (1958). Listen for a mixture of electronic and acoustic sounds. Discuss Varese's notion of the "liberation of sound", as well the influence that science and visual art played upon his work.

Synthesis in various kinds of rock music (also ask students to contribute recordings):

Hassell, Jon *Power Spot.* Listen for various types of synthesis and acoustic instruments. Style is minimalist in an world music setting e.g., hand drums.

Holdsworth, Allan *I.O.U.* and *Roadgames*. Examples of digital guitar synthesis.

Mclaughlin, John *Mahavishnu*. Examples of digital guitar synthesis.

Riley, Terry *A Rainbow in Curved Air*. Keyboard synthesis.

Wakeman, Rick *Six Wives of King Henry Vlll* or *Journey to the Centre of the Earth*. Keyboard synthesis.

The Who *We Won't Get Fooled Again*. Keyboard synthesis.

Minimalism (electroacoustic pulse or phase music):

Adams, John *Harmonium*. Listen for voices and orchestra.

Glass, Philip *Songs from Liquid Days*. Listen and discuss polyrhythms, pulse and phase relationships i.e., rhythm, repetition, predictability, evolution, wave shapes, timbre.

Hassell, Jon *Power Spot*. Electronic and acoustic instruments in a world music setting.

Reich, Steve *Come Out* (1966). Listen for phase relationships. Discuss rhythm, repetition, predictability and phase.

Riley, Terry *A Rainbow in Curved Air, In C.*

Use of synthesis to redo older material:

Carlos, W. *Switched on Bach* and *Orfeo Suite by Monteverdi* (1968). For analog moog synthesizer.

Tomita *Firebird* (Mussorgsky, Debussy, Stravinsky), *Pictures at an Exhibition* (Mussorgsky), *Planets* (Holst), and *Snowflakes are Dancing* (Debussy).

Note: could discuss the ramifications of redoing older works with new sounds e.g., how new technology (instruments) changes the work.

Indeterminacy:

Cage, John *Imaginary Landscapes* ('40s), *Sonatas and Interludes for Prepared Piano* (1958), *Cartridge Music* (1960) and *Variations II* (1961). Unusual sounds. Discuss principles of chance and the I Ching.

Stockhausen, Karlheinz *Klavierstuck* (1956), *Opus 1970.* Use of principles of indeterminacy.

Computer music (discuss how music Musique Concrete enabled composers to collage sounds and how today's composers use electronics instead to do this. For example, synthesizers, samplers and computers can create, store and edit/manipulate both live sounds as well as electronic ones:

Chowning, John *Phone* (1979). This piece demonstrates a vocal quality using f.m. (frequency modulation) digital synthesis. Chowning is responsible for developing f.m. synthesis. Discuss synthesis.

Mathews, Max *Daisy.* Used numbers to affect the timbre of the signal resulting in flanging. Discuss timbre and flanging.

Tenney, James *Three Indigenous Songs, For Ann (Rising)* and *Spectral Canon for Conlon Nancarrow.* Experiments with alternate tuning systems. Discuss tunings and the building of musical instruments.

Truax, Barry *Sonic Landscape No. 2 (1971), Sonic Landscapes No.3* and *Arras* (1980). Discuss Granular Synthesis.

Note: the above is by no means a comprehensive list. In terms of exploring sound, the teacher should feel free to include music from other cultures. For example, North West Indian, Australian Aboriginal, Latin American, African, East Indian, Oriental, etc. Also, encourage pupils to bring in their own ethnic music for the class to listen to and discuss.

After listening to a recording the teacher and students should discuss what it was they heard. The instructor can ask such questions as: what did you hear? Can you describe the sounds that you heard? Did the sound represent something to you or not? Did it sound like anything else you had heard before? Asking questions is an excellent way to involve students and get them to participate in attempting to understand music and musical beliefs.

Once a discussion has taken place regarding the pupil's perception of music, the teacher should introduce students to a more detailed description of the actual elements of music. For example, the instructor might tell students that the piece they just heard made use of sine waves. The teacher could then teach students what a sine wave is i.e., a simple wave with a single frequency and no harmonic content. It is important for students to learn to listen and discuss the components of music and sound including such

elements as noise, silence, tone, timbre, amplitude, melody, texture, rhythm and text in order that they better understand them.

After a discussion concerning the elements of music, the teacher could introduce the concept of a musical score. Questions could center on such things as: why did the composer score it? Was it scored using standard notation or graphic notation? What did the composer intend with the score. Is there a tradition behind this type of scoring? If so. what is it? etc. Once this has been determined the instructor could delve into the intention of the composer asking, why did the composer write this piece? Was he trying to say something? If so, what was it that he was trying to say and did it actually come across? Other interesting avenues to pursue are: attempting to understand the cultural context of the music. In other words, what was or is the composer's role in society? What are his beliefs? How does society view the composer and how does society view his music? etc.

An important resource exists for music educators in The Canadian Music Centre. With offices in Toronto, Montreal, Vancouver and Calgary, The CMC is a non-profit resource centre designed to promote, disseminate and make readily available the music of Canadian composers at home and abroad. Each CMC offers memberships to Canadian composers as well as library services to music educators, students,

journalists and the general public. Every CMC library contains an extensive reference collection of non-circulating sound recordings of Canadian music as well as Canadian contemporary music scores. Each CMC also provides reading rooms, listening facilities, press clippings, concert programmes, programme notes, reviews, photographs, biographical details, promotional materials, performance materials as well as other information on contemporary music in Canada.

In conjunction with the Ontario Arts Council, the North York Board of Education, the Ontario Ministry of Education and the Government of Canada, the Canadian Music Centre offers an educational kit for schools. This kit, called the *ComPoster Teacher's Guide*, written by composer and author Ted Dawson and published by the CMC's Ontario Region, is designed to assist teachers in integrating the work of Canadian composers into the classroom. The *ComPoster* kit consists of a poster; designed for highly visible classroom display, a teacher's guide, an audiocassette and a directory of Associate Composers.

The *ComPoster Teacher's Guide* covers such subject areas as music, related arts, humanities and sciences. The Musical Style section, for example, provides an overview of styles used in the twentieth century. The Guide explains where styles such as impressionism and expressionism originated and which Canadian composers made use of these styles.

Scores and recordings are used so that students get to see as well as hear these techniques in use. Other areas of inquiry include: music as it applies to; native Canadians, musical heritage, cross-cultural influences, visual art, dance, theatre, English literature, history, religion, geography, environment, mathematics, science and technology. Those interested should contact the Canadian Music Centre.

Two Model Lesson Plans for Grades K to 2 and 6 to 7

1. A music lesson for grades K to 2; thirty minutes in length.

Experimenting with Descriptive Sounds

a) give out any available instrument to each child.

b) ask them to create and play any two different sounds which represent or symbolize certain aspects of the weather or seasons. Let each child pick the aspect they wish to represent. Topics to suggest could include: a sunny day, a rainy day, a rainbow, falling snow, or one of the seasons such as Fall or Spring.

c) ask each child to perform their two sounds for the class and then explain what it was they were to represent.

d) ask the class if the two sounds were the same or different. What was similar or different about them? Did they symbolize what the composer intended or did they represent something else? Had another student made sounds which were similar? Had another student tried to symbolize similar ideas?

e) play students a recording of Vivaldi's *Seasons* and explain how composers try to represent aspects of nature either through the actual music or the title of the composition.

2. A music lesson for grades 6 to 7; thirty minutes in length.

Musical Construction and Cultural Beliefs

a) have the class divide into groups of three.

b) ask them to get any instrument or sound producing object available in the class.

c) ask them to invent their own scale or rhythm to be played on their instrument. Ask each group to compose a song. Explain that at least one of the instruments in each group should be used to play the scale while the others can provide rhythmic accompaniment. Ask each group to invent a function for their song, such as, this is a wedding song; this song is used for funerals; this is a festival song; this song is a dance; this is a graduation song, etc.

d) have each group perform their composition for the rest of the class and then ask the class if they can guess the function of the song. Later, have each group explain the intention of their song.

e) explain that cultures assign meaning to musical scales, rhythms, and sounds. Essentially, meaning is assigned by the composer and the culture and these sound constructions are then used to accompany the lives and rituals of people. Explain how our culture uses music, the *Walkman* for example,

for walking and jogging. Or how music is used to accompany movies, television, and video games.

f) explain that other cultures also use music to accompany events in their lives. Explain that it can be hard, deceptive, or impossible to understand the function and meaning of music from another culture if we do not understand the beliefs which influence the music.

g) play the students a recording of Inuit throat singing. Explain that the Inuit women developed this style of vocalization as a way of having fun and passing the time inside over the long cold winters while the men were away hunting.

h) play the black South African song *Skorokoro* and explain that this song contains Mbaqanga rhythms which were banned by the government because it was felt these rhythms were politically subversive. Explain how black culture often uses rhythmic music as a way of celebrating life in the face of hardship or oppression.

Conclusion

The focus of a skill prerequisite in the public schools of British Columbia results in classroom music becoming isolated from the general population of students and teachers. As well, the emphasis on developing a technical faculty in music has meant many teachers and students find the subject unsatisfactory. It can also be concluded, many students and teachers do not have or see the need for

technical skill in music and as a result, there continues to be declining student enrollment as well as a lack of teacher participation in classroom music.

As mechanical music-making is often the result of trying to develop only technical skills, many students and teachers become dissatisfied with the music taught and performed in public school classrooms. If large enough numbers of students or teachers find public school music to be unsatisfactory they will neither take nor teach it. As a result of student and teacher dissatisfaction, music risks becoming ignored and abandoned in the curriculum of the public school. Once abandoned, it will be an easy target for criticism especially in times of economic restraint.

While there may be a few students who enjoy developing musical skills in the public schools of British Columbia, as was noted in the introduction to chapter one, statistically it appears many more do not. One of the reasons students may find classroom music irrelevant is because they do not believe training in music is a necessary aspect of education. As Broudy (1990) notes, "...although the public is persuaded that serious art and the study of it are highly desirable, it is not persuaded that it is necessary..." (p.34). It appears that this view tends to color the student's choice of whether or not to enroll in classroom music.

When the public school is faced with cuts in funding,

the longevity of arts programs, particularly music, can be threatened. Music, most specifically because it is not the focus of the curriculum and has the lowest enrollment numbers, is frequently seen as a luxury and is not always viewed as necessary to a public education. Faced with such adversity, music will have to fight to justify its place in the curriculum of the public school.

Twentieth-century musical techniques are a good way to offer all public school students insight into musical beliefs and practices. Employing these techniques can mean all students will have an opportunity to become involved because they are not based on skills, rather, they are conceptually based. The usage of conceptually based twentieth-century musical techniques will, therefore, help music justify its place in the curriculum of the public school because its emphasis lies in intellectual tasks and development. This emphasis on student intellect will, in turn, make music education consistent with the other subjects in the curriculum. In order to achieve this goal, though, it is necessary for both teachers as well as students to develop a knowledge and understanding of twentieth-century musical techniques.

The Ministry of Education holds that the role of music education in the public schools of British Columbia is "To advance the child's knowledge of the ways in which the arts influence and are influenced by society and the

environment." This is based on the philosophy that "Participation in...music provides a unique mode of experience that stimulates creative and intuitive thought while developing the intellect."(Elementary Curriculum Guide, 1985, p.3). The use of twentieth-century composition, performance and listening coupled with the teaching of musical beliefs can provide students with just these insights. The music class will prove to be stimulating creative thought and developing student intellect and therefore, fulfilling one of the fundamental objectives of public education.

The classroom teacher who chooses to adopt twentieth-century musical techniques and de-emphasize the development of traditional musical skills in the public school is actually freeing up more of his or her teaching time. This means, more time to explore musical beliefs and concepts. Therefore, the teacher is doing much more than merely skill-training, in that, he or she is developing the mind of the student. In this way, music can certainly be viewed as a necessary aspect of the curriculum because it is in line with the goals and aims of public education.

De-emphasis on the technical focus will prove valuable for schools as more generalist teachers will have an opportunity to become involved. Less emphasis on skill-training students to learn traditional music and ready them for public performance may also mean less stress and burnout

amongst teachers. Yet, teacher education will have to change in order to support the emphasis on intellectual development. At the same time, this can hardly be considered a leap of faith as the focus of public school education in British Columbia is development of the intellect. If this is the case, then, it should also be the focus of teacher education.

Essentially, the wording used in the Ministry of Education document *Year 2000* is general and open to interpretation. This means that it is possible for the music curriculum to be teacher designed and driven. In other words, the teacher can decide upon the content and methods used in the music class. As well, the music curriculum guides for both elementary and secondary education are certainly broad enough to encompass a de-emphasis on skill-training and a focus on development of the intellect achieved through twentieth-century musical techniques.

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