NEW DIRECTIONS IN PIANO PEDAGOGY

A Project submitted in partial satisfaction of the requirements for the degree of Master of Arts in Music

by

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PREFACE

This project was undertaken in response to a specific need, one which has long been recognized by many within the field of piano pedagogy. The need is one of closing the gap that exists between what is presently being taught by many piano teachers and what is being written by composers of the "New Music". Although for many decades now these composers for the most part no longer write in a style characteristic of the "Common Practice Period", most teachers tend to remain almost entirely within this stylistic mode. This is often carried to the point where some students, even after years of study, are hardly aware that music has evolved beyond the style of Beethoven, Chopin, or the latest popular hit recording.

The question addressed by this project, then, is: What can be done to effectively acquaint students with some of the sounds and techniques of contemporary art music, thereby broadening their musical horizon and placing the varied periods of music in proper perspective? To help answer this question, two types of research were undertaken.
First, pedagogical sources were examined: existing data was sought within the fields of piano and general music pedagogy, as well as that of music education. Secondly, the author conducted research within the piano classroom and studio itself. The author's experience in dealing with contemporary materials and techniques extends over a number of years, and has included experimentation with new approaches, concepts, and ideas, many of which derive from the written sources just mentioned. Although this applied research was by no means purely "scientific" in scope or character, many helpful insights were gained. The most successful and useful results of much of this experimentation are described and outlined within this thesis. The combined results of both types of research contributed to the realization that contemporary music, particularly that music incorporating the "New Sound" and the "New Freedom", can indeed be taught and utilized effectively in the piano classroom.

The contemporary materials and techniques described here were employed mostly in group settings. The author personally dealt with groups varying in size from two to as many as twenty four members. Student ages within these groups ranged from between five to adult, and although all students responded well to the same innovations, the most successful results were usually obtained with the groups of younger students (ages five to eighteen).
Despite the repeated references to group and class piano settings in this thesis, almost all that is said here can pertain to the private studio as well. The author has worked successfully with these ideas in private settings, but it should be noted here that greater initiative, input, and imagination may be required from one who teaches privately.

This project is of course not meant to be an exhaustive or conclusive study. It is hoped that what is presented here will spark additional ideas and induce further research into these "New Directions" in piano pedagogy.

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ABSTRACT

NEW DIRECTIONS IN PIANO PEDAGOGY

by

Robert Augustine Rios

Master of Arts in Music

This project consists of a solo piano recital and a written thesis. The recital exhibits the varied musical styles of seven different contemporary composers: Olivier Messiaen, Anton Webern, Dane Rudhyar, Alexander Skryabin, John Cage, Morton Subotnick, and Barton Mclean. The thesis consists of two chapters, each discussing pedagogical applications of certain contemporary musical elements presented in the recital.

Chapter One discusses three types of new musical sound, each type presenting unique pedagogical challenges. Non-tonal music is discussed first. Its attendant difficulties of appreciation, technique, and reading can often be alleviated by initially exploring easy contemporary music, and by using non-tonal music at the beginning of
study. Four ways are suggested to help make non-tonal music appealing at the start of study: the use of electronic music, creativity, effective beginning materials, and the imagination. The teaching and performance of prepared piano and inside piano music (of which four types are delineated) is discussed next. Both types of music present difficulties of a more technical nature, and have the advantages of being effective sound exploring agents, and of fostering creativity. Also discussed in this chapter are varied pedagogical resources related to non-tonal, prepared, and inside piano music which are currently available to the teacher.

Chapter Two discusses the new freedom of contemporary music: improvisation, indeterminacy, and chance. Definitions and illustrations of these three problematical creative procedures are first given. Following this is a survey of ideas, techniques, and materials used in piano and general music pedagogy, relating to the specific use of improvisation and indeterminacy. A section on chance music follows, in which both compositional and environmental chance techniques are discussed and illustrated. An explanation and summary of concrete ways in which improvisation, indeterminacy, and chance can be used in the piano studio or classroom is then given. Solo and group improvisation, indeterminate activity, and composition is recommended, along with chance activities and projects. Fi-
nally, a program of creative study is outlined and discussed; students follow a five-step weekly plan involving the activities of improvisation, indeterminacy, analysis, and composition.
INTRODUCTION

This project is divided into two parts. The first is a performance of contemporary music, in a formal concert setting (see the accompanying program and tape). Each composition on the program was selected not only on the basis of its inherent musical worth, but also because each represents or exhibits a different contemporary musical style, technique, or procedure. The second part of this project, the written thesis, describes and discusses some of these contemporary musical advances and applies them to the discipline of piano pedagogy. The recital, then, can be viewed not only as a musical performance, but as a demonstration of contemporary musical concepts; the paper's principal intent is to apply these concepts to the practical setting of the piano classroom.

Two basic aspects of contemporary music have been chosen for demonstration and discussion; each is significant from both a musical and a pedagogical perspective. The first involves the "New Sound" of contemporary music. Three types of new sound are explored: non-tonal music, prepared
piano music, and music produced by playing inside the piano. The second aspect concerns the "New Freedom" of contemporary music. The three types of new freedom examined are improvisation, indeterminacy, and chance.

The procedure used in this thesis will be to divide each chapter into two parts. The first will present and discuss the basic concepts involving the new sound and the new freedom, and will apply and relate these to the recital program. The second part will deal with the pedagogical applications of these concepts, and will be concerned with practical questions related to the effective use of these sounds or procedures in the classroom.

Through a presentation, exploration, and pedagogical utilization of some important aspects of contemporary music, it is the author's intention in this project to point towards and to affirm some significant "New Directions" in piano pedagogy.
CHAPTER I

THE NEW SOUND: NON-TONAL, PREPARED, AND INSIDE PIANO MUSIC

The sound of music has radically changed in our century. New harmonic, melodic, and textural ideas have resulted in a newly sounding musical language. Many sounds, previously looked upon as "noise" or as otherwise musically unacceptable, are now aesthetically justified. This chapter will be concerned with several of these new ideas in sound, each of them a significant contemporary musical development: non-tonal, prepared, and inside piano music.

Concepts and Program Applications

Non-tonal music refers to that type of music which provides no tonal center, in a traditional sense. That is, there is no harmonic structure involving traditional (major or minor) keys or scales. This category of music includes, amongst others, the twelve-tone (or "atonic") style of composition, as well as that of "free atonality", in which no
particular harmonic organizational structure is used.¹

All of the works presented in the recital fit into this general category of non-tonal music. And, each representative composer expresses a different variety or style of non-tonal music. With the music of Webern the twelve-tone Viennese School is represented; Subotnick's music exhibits the style of free atonality. In the two selections by Messiaen, the "theme of God", centering around the triad of F sharp major, is inserted amidst non-tonal bird-song and varied non-tonal bass and treble accompaniments. Skryabin expresses his non-tonal style with quartal harmonies, while Rudhyar uses resonant harmonies built on fourths and fifths. Mclean employs a free non-tonal sound, and Cage, indifferent to the end result, welcomes both tonal and non-tonal sound in the chance outcome of his pieces.

The prepared piano refers to one in which the sound has been altered. Sound of the prepared piano results from the insertion of objects between the strings. Differences in sound can vary greatly, depending on what the object is and where and between what strings it is placed. The program application of this concept is found in Cage's "Sonata XIV" (from his Sonatas and Interludes). In this particular composition, bolts, screws, and pieces of wood, rubber, and plastic are used to create clangs, thuds, and other sound

effects.

The third type of contemporary sound under consideration is one we have labeled "inside piano music". By this is meant those sounds resulting from some different use (other than the usual striking of the strings by the hammers) of the interior of the piano. We can identify four different categories of non-electronic inside piano sound, in addition to the prepared piano, which we have already considered as a separate type of new music.

First, there are those sounds produced by playing inside the piano with one or both hands. These sounds vary subtly from each other, and result from techniques such as plucking, hitting, or scraping the strings, or by striking the interior construction of the piano (the wood, braces, pins, and so on). This latter technique, with the pedal down, also induces resonance.

Second, there are the sounds resulting from muting or stopping the strings. These singular sounds range from dull to ringing; in the case of stopping, the harmonics of the string are heard. The technique used is to touch (firmly or lightly, depending on the effect desired) a string with one hand while playing its key with the other. Harmonics can also be induced by silently depressing one or more keys (held by the hand, the sostenuto pedal, or rubber wedges inserted between the keys and the fallboard), while playing other keys in the normal manner.
A third category consists of those sounds resulting from striking, scraping, or plucking the strings with implements such as percussion mallets, pencil erasers, plectrums, and so on. The hardness and texture of the implement make a big difference on the quality of the sound being produced. Hard rubber mallets, for example, produce a twangy sound; soft woolen mallets produce sound which is of a more mellow quality. This category also includes sounds which can be produced by striking or scraping the interior construction of the piano with similar and appropriate implements. Sounds such as these, produced with the pedal down, are richly resonant.

Finally, there is a large category of sounds which results from the placing of objects onto the strings. Ping-pong balls, tin cans, milk bottles, sheets of paper, and so on, are placed on the strings of the piano (alone or in combination), while the keys are played in the normal manner. Sounds in this category, needless to say, vary greatly, depending on the quality and quantity of the object or objects used.

In the recital, only the first two categories of inside piano sound were represented. The improvisation played during Cage's Variations IV incorporated much inside sound of the first category, especially that of scraping the bass strings, melodic and harmonic plucking, and creating glissandos by brushing the nails and flesh over the strings. Contrasting and varied sounds were sought during the impro-
visation, and differing touches and dynamic levels were used.

Inside piano sound of the second category was used in Mclean's *Dimensions II*. In this piece, the performer is called on to mute certain strings by damping them with the flesh of the finger. Mclean is explicit about the quality of sound he desires. In his introduction to the work he states "The quality (of the muted string) should be a beautiful ring, not a thud", (the latter being a particularly easy effect to achieve). The performer is thus urged to experiment until the desired quality is achieved. The muted sound is indicated in the score by a notehead with a curved stem (\(\text{\textbullet}\)). At times Mclean also calls for the repeated playing of a key, in which the string is at first muted, and then "un-muted" by gradually releasing the pressure of the finger. This effect is indicated in the score as follows:

\(\text{\textbullet}\text{\textbullet}\text{\textbullet}\text{\textbullet}\).

Cage's *Seven Haiku* also employed muted sound, but it was used in only several instances, and the keys were played in a manner identical to that used in *Dimensions II*. Unlike Mclean, Cage does not call for a specific quality of muted sound. Therefore, the performer is free to experiment and use any suitable sound quality. The sounds are notated by Cage in one of two ways. A note is written in the normal manner with an indication that it is to be "finger-muted"; or, the same indication is used over two staves containing
the same note. The upper staff uses an "x" note (\(\text{\textbullet} \)) to indicate the string to be muted with the right hand. The lower staff contains the usual notation, indicating the key to be played in the normal manner.

**Seven Haiku**, in only one instance, also called for the playing of inside sound of the first category. The performer is asked to play a "glissando" on the strings, using the fingertips. The notation used in this instance is a simple diagonal line, preceded by an "x" marking the string which begins the glissando, and ending with an asterisk indicating the stopping point. Duration is indicated by an attached stem and flag:

\[\text{x} \xrightarrow{\text{\textbullet}} \]

**Pedagogical Applications**

There are unique problems and difficulties encountered in the teaching of non-tonal, prepared, and inside piano music. The problems are basically of two types: aesthetic and technical-theoretical. Under the latter term we include technique, reading, ear training, theoretical concerns, and skills such as preparing a piano and playing interior piano sounds. The aesthetic problems are primarily concerned with the understanding and appreciation of the new music.

With non-tonal music, and particularly with the more extreme forms such as atonality, the aesthetic problems are specially difficult. Although the technical problems are important and sometimes demanding, it is the aesthetic ones
which seem to cause the greatest difficulty for both students and teachers. This is undoubtedly due to the sometimes radical difference in sound, as compared with tonal music, as well as the time it takes to develop an appreciation and understanding of the new music.

With prepared piano and inside piano music, the problems are mostly technical, and not aesthetic. Students and teachers, for the most part, seem to readily accept this new music, and, perhaps because of the intriguing sounds, and the novel techniques employed to produce them, have no difficulty approaching and assimilating it. The mechanical techniques involved here, however, being so different from the usual manner of playing, frequently present obstacles of one sort or another.

With these points in mind, we divide the following pedagogical discussion into two parts. The first concerns non-tonal music and the corresponding problem of appreciation. Although the difficulties of technique and reading will also be alluded to, the emphasis will be on the aesthetic aspect of appreciation: how can non-tonal music be presented as a welcome addition to the student's store of musical knowledge and experience? This discussion will center around two types of students: those with a traditional piano background, and those who are new to the study of piano.

In this part we deliberately leave out any discussion of other technical-theoretical problems related to non-tonal music. Ideas such as the formulation and presentation of
serial music, asymmetrical meters and complex rhythms, non-periodic phrase structure, and the teaching of unusual hand positions and stretches, have been eliminated, despite their importance. Pedagogical problems such as these relate to much of the music of the twentieth century, but they are not, as we have stated, the central problem in the teaching of non-tonal music. For a good, comprehensive treatment of these and other similar problems, we refer the reader to Ellen Thompson's recent book, in which guidelines and insights are offered to both performers and teachers.\(^2\) Her book also includes lists of materials and a series of suggested assignments.

The second part of this section on pedagogy will deal with some of the problems related to the teaching and performance of prepared piano and inside piano music. Here, we will concentrate primarily on technical concerns.

Non-tonal Music

The teaching of most of the styles of non-tonal music poses many problems, when compared to the teaching of traditional styles. Most of the problems seem to center around three areas of pedagogical importance: appreciation, technique, and reading. The first equally concerns both beginning and experienced pianists; the problems of technique and reading are of particular importance for those experienced

pianists who have been exposed only to traditional musical styles.

Appreciation is certainly of fundamental concern in the teaching and understanding of non-tonal music, and indeed of contemporary music in general. If most teachers and students fully appreciated and accepted the non-tonal sound, certainly this music would by now have pervaded the numerous pedagogical materials available today. As it now stands, however, the vast bulk of teaching materials consist of a very dated and worn style, solidly built on the sounds and concepts of pre-contemporary eras.

The problem of technique, of course, relates to the new vocabulary required to learn and assimilate the varied styles of non-tonal music. If a student has been accustomed only to tonal scale and chordal patterns, to playing within specific key areas, and in general to learning the traditional language of tonal music, then certainly non-tonal music could present formidable technical problems.

The reading of non-tonal music can present similar obstacles. Without a background in the new music and some familiarity with its language, the reading of such music often proves laborious and time consuming. And, in the case of some of the new notation, the reading can be especially confusing and difficult to decipher. (Often, however, the latter problem is assuaged by directives presented at the beginning of compositions containing problematic notation.)
These two problem areas of technique and reading center around this question: how can non-tonal music be made more accessible and prove to be a less formidable barrier for students of piano? In answer to both this and the aesthetic question raised earlier, two general guidelines are hereby suggested: explore easy contemporary music, and place an early emphasis on non-tonal musical styles. Each suggestion points to ideas which a teacher can use to help ensure a broad understanding and appreciation of non-tonal music. We shall examine each guideline in turn.

**Exploration of easy contemporary music**

The best way for those who have had a traditional musical upbringing to acquire an appreciation and understanding of contemporary music, as well as improved technical and reading skills, is by exploring the easier twentieth century piano repertoire. This should be done until the new vocabulary and sound have become "part" of the performer. Through a steady diet of easier non-tonal literature of varied styles, technical configurations, such as clusters or combinations of dissonant intervals, are thereby gradually mastered. Familiarity with the new language steadily improves. Above all, the ear grows accustomed to the expanded sound of non-tonal music.

This exploration can be an enjoyable experience if one simply stays with pieces which range below the reader's level of proficiency. Choosing too difficult a piece only
serves to frustrate the reader who, confronted with a new language, new technical problems, and often a startling new sound, can hardly be expected to continue. There are basically two types of "easy" contemporary piano materials: those easier, less complex compositions written by established composers, and those pieces written especially for pedagogical purposes. (Of course, one cannot always discern a difference between the two types.)

Concerning the first type, nearly every established composer of any merit has written easier pieces. To use examples from composers represented in the recital, the style of Messiaen can be explored in selections from his Preludes ("La Colombe", "Plainte Calme"). Rudhyar's style is easily represented in his Second Pentagram (all five movements). Skryabin's late non-tonal style can easily be assimilated in some of his late Preludes, such as Op. 67 #1, and the Five Preludes, Op. 74. For further information on easier pieces of established contemporary composers, the helpful listing by Robert P. Morgan can be consulted.\(^3\) Morgan discusses composers extending from Bartok to Cage and selects representative examples from their easier works.

Concerning those contemporary materials written expressly for pedagogical purposes, the literature is slowly accruing, even though the new music remains in the smallest

minority when compared with the bulk of pedagogical materials. Alice Canaday gives a recent listing of much of the available contemporary pedagogical materials in her comprehensive guidebook. Here, she not only lists compositions according to difficulty, but provides excerpts and gives helpful information on much of the new music. To keep up-to-date on current materials appearing on the market, relating to both types of contemporary compositions, surveys and reviews, such as those appearing in *Clavier* magazine, can be consulted.

We should point out that some of the pieces compiled in the aforementioned listings of contemporary music are of a "transitional" nature. That is, they can be placed between the traditional and the completely non-tonal styles of composition. Some of the works of Bartók, Hindemith, and certain neo-classical composers, for example, all fit into this category. This is not to deny their value for the study of the non-tonal pianistic styles, however. In addition to having value in their own right, such works can serve as a helpful link between traditionalism and non-tonal music; here, the continuity of tradition is more easily recognized. Such aspects as form, lyricism, and dynamic intensity can easily be perceived and felt, while the ear at the same time gradually acquires a taste for a more open,

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free sound. When a more radically sounding piece is finally pursued, the initial (otherwise often negative) impact is lessened, and the study of non-tonal styles can proceed.

Of course, one can also choose to delve directly into non-tonal compositions, without the aid of transitional works. Whatever the approach taken, the same prescription holds: one must play the easier music, and not merely theorize or speculate about it. Only by giving non-tonal music a fair, open, and repeated hearing, pursued over the course of time, can its merits be perceived and its difficulties surmounted.

**Initial emphasis on non-tonal music**

For new students of the piano, many of the pedagogical problems of appreciation, technique, and reading can often be solved by a simple shift in emphasis. Normally, the music of the contemporary era is the last to be studied. This is particularly true of the more radical contemporary trends. It is only after years of traditional, tonally based piano study that non-tonal music of any style is finally introduced, if it is given to the student at all. What is being suggested here is a reversal of this process: present the new music first, and then gradually supplement this with the music of the past.

This shift in emphasis is recommended for two reasons. First, such a procedure opens the ears of the students to the new music, from the very beginning of study. Tradition-
al training, as we have noted, has the students spend years on tonal styles, with the result that when confronted with non-tonal sound, their ears have a difficult time accepting and adjusting to it. By concentrating on the free sound of varied non-tonal styles at the beginning of study, however, students are less biased in favor of tonal idioms, and are thereby more likely to accept the new music as part of their musical vocabulary. In addition, with this approach, students are assured of acquiring, during their course of instruction, the technique and reading ability necessary for the new music. Finally, this approach assures that those students who may eventually drop out of their piano study (and, unfortunately, there is often a high percentage of such students) are at least exposed to the music of their own time.

The importance of this latter point is clearly brought out by educator Eunice Boardman. In a discussion of the relevance of instructing the young in electronic and other contemporary music idioms, she states:

As teachers, our task is to guide students toward 'further awareness of patterns of sound as an aesthetic component in the world of experience.' The purpose of music education must be to increase the availability of aesthetic choices that might otherwise go undiscovered. The children in elementary schools today were born into an electronic world; to them the explosion of the atomic bomb, the first flight into space, and the development of computer technology are accepted facts. To limit the study of music to an art based on eighteenth-century aesthetic premises would be no more logical than to suggest that the study of physics by these same students should be confined to Newtonian concepts. Neither study would provide the individual with the necessary
alternatives for dealing with all eventualities within his own environment.5

Thus, exposing students early to contemporary music assures an awareness of "aesthetic choices"; from the outset of study, music is viewed in a far more expansive and inclusive way than that offered by the exclusive study of tonal styles and idioms.

The second reason for this shift in emphasis is that the assimilation of tonality, after an initial emphasis placed on the new music, is easily achieved. (This is not the case, as we have seen, when the process is reversed.) Students have no problem appreciating and understanding tonal music, even after extended exposure to non-tonal styles. The reason for this seems to lie in the fact that students are almost constantly immersed in the tonal sounds of their environment. Surrounded by the sound of popular and commercialized music of all types, conveyed over radio, television, recordings, tape, and film, most students, by the time they begin their piano study, are already familiar with tonal idioms. Therefore, a delay in the actual playing of these idioms is certainly not harmful. Indeed, by initially focusing their concentration on the new music, one could even say that students were thereby receiving a "balanced" musical diet: tonality from the environment, and non-tonal-

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ty from the classroom!

However, this guideline of initially focusing on non-tonal music raises a serious question, especially for the older beginner: how can piano study, which centers around such a new and different musical language, be made appealing? Students naturally prefer to learn the music of their environment which is esteemed so highly by both themselves and their peer group, rather than learn a "foreign" musical language which no one may understand.

In response to this central question and key problem, we can suggest four ways to make non-tonal music appealing to piano students at the beginning levels: the use of electronic music, creativity, effective beginning materials, and the imagination. Each idea will now be described and discussed.

The use of electronic music

If there is any link between the new music of our time and the beginning piano student, it is the electronic media. Sounds of electronic instruments, synthesized sound, and the sounds of electronically processed stereo and tape recordings have all pervaded our lives. "Electronic music" is defined here by Robert Moog, one of the chief innovators in this field:

Electronic music consists of electronically generated sounds and natural sounds that are modified electronically, assembled into music by magnetic tape manipulation, or performed alive. Electronic music is a medium of expression, not a specific type of music. In fact, electronic music includes music as diverse as
Carlos and Folkman's 'Switched-on-Bach', the newest Coca-Cola commercial, some of the currently popular rock 'n' roll, and representative material from all camps of the musical avant-garde.6

The recital part of this project exhibited both "electronically generated sounds" (sounds created by means of a music synthesizer), and "natural sounds that are modified electronically" (often called "musique concrète"). The former type of electronic sound was found in Subotnick's Prelude No. 4, and the latter type, in Mclean's Dimensions II. In both pieces, the pre-recorded tapes containing the electronic sound were played continuously with the piano part.

There is no doubt that electronic sounds, such as those heard in the recital, are of enormous appeal to the young. Recent research into the music preferences of junior high school students has in fact indicated a definite preference for electronic music, over that of the classics or even jazz.7 Undoubtedly, much of this interest is due to the very novelty of the sound, and to the fact that nearly every successful rock group today uses synthesized sound of one type or another.

There are additional features to attract students when electronic media is brought into the classroom. Students

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are fascinated by the gadgetry of a synthesizer or even of a tape machine, and they rejoice in the fact that many sounds, even some quite complex and alluring ones, can be produced so easily. On the other hand, many students feel challenged by the fact that real skill is required to effectively manipulate those sounds in creative activities. Students, indeed, enjoy the extensive freedom available to create their own sounds, projects, and compositions. Evidence of this student interest in electronic music and its creative aspects can be seen in the work of Virginia Hagemann and Anne Modugno. Both taught electronic music to secondary school students, with a high degree of success, and encouraged the creation of many compositions, some displaying extraordinary innovation and complexity.

From a pedagogical point of view, electronic music provides many advantages. Creativity, as we have seen, is fostered and encouraged. In the creating of a finished electronic composition, discipline is also fostered, as is pointed out by Jerome Margolis. Above all, with electronic music students are actively involved in all parameters of sound: duration, timbre, intensity, and so on. Each parameter can be explored to its fullest, and an amazing, seem-


ingly limitless array of sounds and patterns of sound are available, waiting to be discovered by the student.

It is this last point, that of sound exploration and discovery, that is of particular interest to the teacher of non-tonal music. Electronic music, as composer Wayne Barlow points out, is a "sound-oriented" art form, as opposed to the more thematic musical forms of the past:

It thus becomes possible, I think, to identify a kind of music that is basically sound-oriented, in contrast to that which is more conventionally theme-oriented. In one, the sound itself is the significant element, while in the other, the sound is only a vehicle for projecting a thematic element, which itself is the dominant significant element.10

By contrast, we could say that the piano, because of its rich, cultural past, is normally viewed as a more "theme-oriented" medium. Students, therefore, when they approach the piano, expect to play music with a recognizable theme and musical structure. This is particularly true for the older beginner, who is more culturally conditioned to this idea than is the younger student. With the electronic media, however, there are no listening habits restricting the student's appreciation and awareness of sound.

Therefore, if students can begin their study of piano in conjunction with an exposure to and utilization of electronic sound, the aesthetic awareness of the piano as an additional and effective sound-producing medium is better

assured. The piano, then, can be viewed as an instrument capable of producing tonal, non-tonal, and other types of sound (some of which we shall examine in the next section of this paper), and not limited merely to the expression of "melody", "harmony", and "rhythm", as they are traditionally understood.

This utilization of electronic sound in the piano classroom could result in many innovative projects and activities. Students could create piano and tape compositions, explore concrete electronic music, where students alter piano and other sound through tape manipulation, or work with tape delay techniques, as suggested by J. B. Floyd. 11 Numerous other activities are possible, and the future potential for all music educators in this field appears vast indeed. A selected bibliography has been provided at the end of this paper to point out additional avenues for the educator to take in exploring this innovative area of electronic music.

The use of creativity

Students enjoy making their own music (a point we have seen in the discussion on electronic music), and the sounds and techniques of non-tonal music encourage much creative music-making. By involving themselves in the creative act, students also tend to be more tolerant of the sounds they

are producing; they place greater emphasis on imaginative, formal, and dynamic characteristics of the music. Therefore, their ears gradually become accustomed to the new sound, and non-tonal idioms quite naturally find a place in their musical vocabulary. Pedagogical concerns relating to aspects of creativity will be discussed in Chapter II.

The use of effective beginning materials

In order to adequately work with non-tonal music from the start of study, some effective beginning materials are necessary. We will now briefly examine a few examples of the more effective contemporary pedagogical materials currently available. This is of course a purposefully restricted listing; many fine resources are available in addition to those mentioned.

Considering the great number of piano method books available today, nearly all of them based on more or less restricted tonal and idiomatically conservative styles, it is refreshing to know of two methods dealing to a large extent with non-tonal sound. We are speaking here of the methods by Stephen Covello and Guy Duckworth. Both methods are for the younger beginner (unfortunately, there


is as yet nothing available for the older beginner in the strictly contemporary mode), and both place a great emphasis on indeterminate creative activities (we will discuss these two methods further in Chapter II). For a student following either text, it is safe to assume that roughly one year would be spent with non-tonal sound. (This is not to say, of course, that other activities and literature, involving other idioms, could not also be included within this time span.)

Contemporary piano collections, for students at the beginning levels, can fortunately be found in greater abundance. For the younger beginner, there are, for example, collections by Kraft\textsuperscript{14} and Bittner.\textsuperscript{15,16} The pieces by Kraft are highly descriptive, and easily play on the student's imagination. Bittner's two collections are written along the same vein, containing descriptive pieces with colorful titles, serving to arouse student imagination. Both of Bittner's books possess an additional pedagogical advantage: dynamics are "free", permitting the student to determine the mood and "content" of each piece, and enabling him to write in the dynamic markings as he sees fit.


Examples of effective collections for the older beginner can be seen in the works by Finney\textsuperscript{17} and Bartók.\textsuperscript{18}

The pieces in Finney's collection are somewhat descriptive, containing titles, and written in varied non-tonal idioms. A significant feature of this set is that it contains a number of pieces (roughly half) which are written in new notation. Instructions are given to explain the notation for techniques such as cluster playing, repeated notes, and indeterminate passages. Bartók's well-known collection, the first book in a graded series of six volumes, provides experience with both tonal and non-tonal styles, consisting of pieces written in various modes and scales.

The use of imagination

The student's imaginative faculties can and should be stimulated when he or she is learning non-tonal music, particularly at the beginning stages of study. The reason for this is simply that added meaning, besides the purely musical, is given to a particular piece, thereby creating an increased interest in the music itself. In addition, a student's expressive abilities are heightened when the piece has illustrative meaning. This increased incentive is especially needed in the study of non-tonal music since the


student is usually on such unfamiliar aural ground. Until he or she becomes more accustomed to the sound, non-tonal music without any "meaning" is usually not enough to interest the student.

The fostering of imagination depends a great deal on two factors. First, the music must lend itself to illustration, mood, or description of some sort. Non-tonal music of a totally abstract nature is often unappealing to the student, whereas that which is conducive to graphic description is usually the most successful teaching piece.

Secondly, the student should put his own imagination to work by freely describing the music he is playing, and by creating his own music, sounds, and descriptions (that is, the "story" or "mood" behind the piece). This will help foster an awareness of the musical relationship between sound and description, and give his imaginative and creative powers full expression.

Thus, descriptive titles, stories relating to the music, atmospheric settings, settings of mood, and so on, are important for a full appreciation and comprehension of non-tonal music. Eventually, of course, the student may not need such imaginative stimulation, relying simply on the inherent beauty and merits of the music itself. However, in the beginning stages of learning, when the initial problem relating to contemporary music is often one of appreciation, there is no doubt that the use of imagination helps one eli-
minate that problem, enabling one to eventually accept non-tonal music solely for its inherent musical rewards.

To conclude this section concerning the initial emphasis on non-tonal music, we should point out that going from a contemporary emphasis to a more traditional one in the music learning process, rather than vice-versa, can help teachers develop truly well-rounded pianists who are sympathetic to all periods and styles of music. It should be emphasized that with this approach, the music of the past is not neglected, it is merely placed in its proper perspective. Students, from the start of their study, become aware of the fact that the "classical music" of our time has in most cases evolved beyond the triadic harmonies and tonal sound with which their ears are probably all too familiar.

The Prepared Piano and Inside Piano Music

The next two parts of this chapter deal with two of the more intriguing and oddly neglected areas of piano performance. The sounds of a prepared piano never fail to arouse interest, and playing inside the piano is an experience eagerly welcomed by many students. And yet, the literature pertaining to both of these areas is surprisingly scarce, and the number of pianists and teachers who actively use these techniques are also few. For the remainder of this chapter we therefore direct our attention to these two areas, pointing out some pedagogical resources, problems, and advantages pertaining to both.
The prepared piano

Resources

For the neophyte in the field of prepared piano there is fortunately available a complete guide to this medium, the book by Richard Bunger. It is a thorough presentation of the subject, giving mechanical advice on preparations, qualities of materials, and other related points. This book should definitely be consulted by anyone seriously interested in the prepared piano.

The prepared piano literature is scarce, and the wonders of this medium have by no means been explored by the bulk of composers. Perhaps the only pedagogical collection of short piano pieces now available is the book by Arthur Greene. This fortunately is a very good set, containing pieces for the late beginning to intermediate level student. The pieces call for simple preparations, and some interesting and captivating sound-rhythm combinations result from performing the pieces. An illustrated introduction describes and explains the preparations.

Much of the prepared piano literature consists of the music of John Cage. Recommended are A Valentine out of

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Season 21 and *Music for Marcel Duchamp*. Both are rather short works, and easily accessible to the early intermediate student. Cage's preparations here are somewhat more complex than in the Greene pieces, involving more variety in timbre. The selection in the recital ("Sonata XIV") was taken from his *Sonatas and Interludes*, a more difficult collection involving a long list of preparations. Cage, incidentally, always prefaxes his prepared pieces with a clear and concise table of preparations.

Problems

The difficulties involved in preparing a piano are actually few in number. Perhaps the biggest problem for students is that a grand piano is necessary. Preparing an upright or similar piano is not recommended since most objects do not remain secure in a vertical alignment of the strings. Therefore, since most students do not have a grand piano, most of the preparing, experience, and practice with the medium will have to be done in class.

Screws and bolts are probably the most frequently used materials for preparation. One must insert them carefully, using a narrow wooden wedge or similar instrument to twist the strings slightly as the object is placed between them.

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The string's sound will vary, depending on how far down the object is inserted, how far from the damper it is, and how long the screw or bolt is. The thickness of the object should be carefully chosen to match the particular register in which it is to be placed. Bunger gives a helpful chart showing suitable screw and bolt diameters to fit specific registers.\(^\text{23}\)

For the three-string-per-unison registers, different objects can be placed between the first and second, and second and third strings, thereby creating a conglomerate sound. Or the \textit{una corda} pedal can be used to move the action to the right, thereby "selecting" the sound from the preparation on the right side. Conglomerate sounds can also be composed of more than two objects, as is the case with some pitches in Cage's \textit{Sonatas and Interludes}, where different materials are placed at varied distances from the damper.

A word should be said about performance readiness. In order to prepare adequately for a performance of prepared piano music, two things are necessary. First, one should spend an adequate amount of time practicing the music \textit{with} the preparations in place. The sound one hears is of course different from what one sees (the standard notation). Therefore, the ear must get used to this discrepancy. Second, one must not only prepare by learning the piece it-  

\(^{23}\)Bunger, \textit{op. cit.}, p.12.
self, but one should also be adept at preparing the piano beforehand. One should practice the latter procedure until it can be accomplished quickly, since time could be short before a performance. A good aid is to use chalk to mark the strings for exact locations of the prepared objects; the preparation chart can then quickly be referred to for other necessary information.

Advantages

There are at least two pedagogical advantages in working with the prepared piano. First is its value as an exploratory sound device. Students can be encouraged to explore the numerous sound possibilities inherent in the medium. Their musical horizons are expanded by discovering sounds of all types and timbres. With some experimentation, a student discovers the limits and possibilities of using certain objects. For example, a bolt placed so many inches from the damper could sound entirely different when moved only slightly, or when combined with other objects.

Students should be given the freedom to discover not only the better-known prepared sounds, but to discover new sounds of their own. This, of course, involves not only the use of all types of materials, but an imaginative use of materials as well. Students can keep a "Book of Preparations", in which they put pertinent information relating to their discoveries. The usual information can be kept and organized in manner similar to that used by Cage, in which
different columns refer to the tone and strings to be prepared, the material to be used, and the distance from the damper where the object is to be placed. Students, in addition, can keep a written description of the quality of the discovered sounds (whether bell-like, metallic, etc.), and grade them according to effectiveness. They could even record their sounds on tape, thereby having them permanently "on file".

The second advantage follows from the first. Armed with an arsenal of prepared sounds, students can then put their creativity to work by improvising and composing. Creativity seems to come easy when dealing with such a sonorously rich field. Inhibitions usually give way to fruitful creative activity. Activities can include those in which different students improvise using some of the group's favorite prepared sound "discoveries", which can be used either one at a time or in interesting combinations. Student compositions can include not only the usual non-prepared piano sound, but prepared piano sound as well. Of course, during this time, prepared piano works of other composers could be studied and played, to provide input for ideas and interesting sound-rhythm combinations.

Inside piano music

Resources

As is the case with prepared piano music, there is unfortunately little student piano literature available con-
taining inside piano sound. We will here give a few examples of some effective teaching materials which are currently available.

One of the few collections of pieces containing sounds of this sort, and perhaps the finest available, is one by Paul Cooper. In *Cycles*, the performer is called upon to mute, use implements, (pencil erasers), and play in the normal manner. The pieces are simple and yet very expressive, and can be played by students in the late beginning or early intermediate grades.

Alan Hovhaness has written an effective, intermediate level piece where he occasionally calls for the striking of strings with marimba sticks. A soft plectrum is also used at times, to gently "play" the strings. Such passages, using either implement, are monophonic and use conventional notation.

Henry Cowell, one of the originators of inside piano effects, contributed most notably to the literature with his compositions "The Banshee" and "Aeolian Harp". Both pieces are of intermediate-level difficulty. "The Banshee" is played solely on the open strings, and numerous footnotes explain how to scrape, pluck, or damp the strings, either

with the flesh or the nail. In "Aeolian Harp", one hand depresses the keys silently while the other hand sweeps the strings with the flesh of the fingers or the thumbnail. A "pizzicato" is also used, where the strings are plucked with the flesh of the finger.

George Crumb has written compositions representing the fourth category of inside piano sound, where objects are placed on the strings. In the first selection from his Makrokosmos, Volume I, for example, a light metal chain is placed over the bass strings throughout the piece, thus producing an ominous rattling effect.\(^2\) Crumb's music is usually written at a more advanced level, and calls for many imaginative and sonorous effects.

Problems

This section will deal with four problem areas relating to inside piano music: the type of piano which is used, the performance of the sounds, the preparation, and the notation. Each will be examined in turn.

The type of piano. Only the categories of inside piano sound involving the playing of the strings with the hands, the muting and stopping of the strings, and that involving the use of implements, can be played on an upright or similar-type piano. In such cases, of course, the front of the piano must be removed in order to gain easy access to

the strings. Even upon doing so, it may be found that some implements, such as large mallets, cannot comfortably or adequately be used. In such a case, a grand piano is clearly necessary. With a grand piano, the other category of inside sound is also made accessible (that involving the placing of objects on the strings). Students must have access to a grand piano, then, if all four types of sound are to be fully discovered and explored.

**Performance of the sounds.** The performance of inside piano sound can be problematic with regard to the muting and stopping of the strings, and the playing of the strings with implements. The first and last categories of sound, inside playing and the placing of objects, are simply a matter of following directions at a specified time either before or during a piece. The performer, for example, might be called on to pluck a string, or hit the strings with the knuckles, or produce a glissando across the strings, using the nail or the flesh of the finger, whenever a specific type of notation is perceived. Or, the performer could be asked to place a specific object on the strings, before the piece begins or during the course of the piece, and to either leave it there throughout, or remove it at a specified time.

Muting and stopping, however, can result in a variety of rather subtle sounds, and problems arise when a composer fails to specify the general quality of sound desired. The possibilities inherent in the sound-producing techniques of
muting and stopping should be fully investigated, therefore, so as to ascertain the limits of sound within which one is able to operate. This will aid in the making of artistic decisions, should the intentions of the composer be unclear.

With regard to the striking of the strings with implements, the problems are mostly technical. The principal one involves the tremolo, on one or several strings, with percussion sticks or similar types of mallets in each hand. The swift back and forth movement of the mallets may take some amount of practice, especially if a smooth tremolo is required or desired.

The general type of implement to be used is of course specified by the composer, but often certain details are left up to the performer. If that is so, investigation by the performer is again recommended. For example, experimentation should be done with different types of mallets, if the composer fails to specify the type, hardness, or texture of the mallet. In such a case, artistic and technical decisions by the performer are clearly called for.

**Performance preparation.** The preparation involved in the playing of inside piano music mainly involves body position, the marking of the strings, and proper placement of the music. Some inside sound can best be played from a standing position, while others can be performed equally well standing or sitting. In the recital, for example, the mutings in "Dimensions II" were able to be played from a
sitting position, with the arms fully outstretched. In the improvisation played during "Variations IV", however, standing was a necessity, since the entire range and much of the length of the strings were used. While in this position, the right foot was extended under the piano so as to reach the damper pedal.

Performance preparation, then, means a recognition of suitable body positions for every part of the composition, and this should be investigated and rehearsed accordingly. Important also is the marking of the strings for identification purposes. When facing the piano interior, identification of pitch is difficult, so certain specific markings are helpful. Chalk or self-adhesive labels can be placed on the dampers or pins, or even on the strings themselves, in order to identify certain pitches or groups of pitches. Nodal points, where a string's harmonics can be heard, can also be marked with chalk, in order to insure quick accessibility.

Since with most inside piano sounds the performer must have easy access to the open strings, the music rack must be kept down, for all or part of the composition. Therefore, the performer must place the music on top of the rack, or, if the rack is best removed, on the steel bracing or pins. The student will probably need to prop himself up on the bench, or perhaps even to stand, in order to view the music adequately. If this proves unsatisfactory, a new rack could be devised, which would set on the pins over to the side, or even, with the use of a large rubber brace, be made to
hang down from the piano lid.

Notation. Composers have not as yet devised a standard system of notation to represent the wide gamut of new piano sounds. However, there are serious international attempts being made, as Kurt Stone points out, to devise a common system of contemporary musical notation. Until such a system becomes widespread, however, pianists will have to resort to the instructions given by composers to explain their often innovative musical symbology. Such instructions, given in the preface or during the course of a piece, are usually clear and made as simple as possible.

Not all symbols are unique to each individual composer, however. Some symbols, representing inside piano sound as well as other sounds and parameters of the new music, are used rather frequently by some composers. For a good explanation and discussion of some of this new notation, the reader should consult the article by Marjory Irvin, which contains ample and detailed illustrations.

Advantages

The chief pedagogical advantages in working with inside piano music are, just as we saw with prepared piano music, sound exploration and creativity. All that was said in re-


lation to the advantages of the prepared piano can be applied to inside piano music. Students should be encouraged to explore the rich varieties of inside sound, be free to discover and invent sounds of their own, and be allowed to use their newly discovered sounds in creative activities.

The unique aspects of each category of inside sound can be discovered easily and enjoyably by students. Playing inside the piano, by plucking, strumming, or hitting, each technique requiring no advanced training or ingenuity, are only some of the possible ways of producing sound by the hand. Students can find more; in addition, original notation can be devised to represent their new sounds.

Muted and stopped sounds are more subtle and challenging. However, with some experimentation, students can easily distinguish and produce the different types of muted sounds, and can discover exactly where and how to produce harmonics on the strings. Those subtle, resonant sounds resulting from silently depressing some keys while others are struck are also easily produced, and provide an excellent listening exercise for students.

The challenge with the last two categories of inside piano sound, those involving the use of implements and objects placed on the strings, lies not in discovering how to produce the sounds, but in discovering what materials to use and how to use them. A seemingly endless variety of items, both musical and household, can be utilized by students to
produce sound within the piano, (care, of course, being ex­
erted so as not to harm the strings or the piano interior). An enjoy­
able and stimulating discovery exercise, then, would be to have students come up with as many different types of imple­
ments to use on the piano strings or piano interior, and to discover different ways of using such implements. A mallet, for example, can be used with either end, by strik­
ing the strings or braces, by playing glissandos on the strings, or by using it in combination with other types of implements.

An equally stimulating discovery exercise involving ob­
jects to be placed on the piano strings could be one in which students are asked to find a specific number of ob­
jects or combinations of objects which could be inserted on­
to the strings, bring the objects to the class or studio, and then try out their ideas on the room's grand piano.

As was the case with prepared piano sounds, students should permanently file away their inside sound-discoveries for later use, whether that use be for impro­
vising, composing, or merely as reference material. This recording of in­
formation can, like the prepared piano, involve a number of procedures. Students can keep a "Book of Inside Piano Sounds", in which all pertinent data is kept: category of sound, manner in which it is produced, register in which it is produced, the dynamic range of the sound, the character and quality of the sound, and so on. In addition, sounds can again be graded according to effectiveness and accord-
ing to the student's likes and dislikes. Finally, a tape recording of inside sounds can be made, each student being careful to label each sound, possibly referring on the tape to the sound's location in the student's reference book.

With regard to creativity, inside sound, like the prepared piano, has an advantage over other piano music: its new and intriguing aspects serve to break down a student's inhibitions, especially those of an older beginner or transfer student. Such students become less afraid to create and perform their own improvisations and compositions, since there is no standard by which they can be judged "good" or "bad". Standards, however, are not lacking or neglected; they are simply different from those to which the student is accustomed.

The particular creative exercises which involve inside sound include the use of a student's or group's preferred sounds in solo, ensemble, or group compositions. Students can also improvise and compose using the combined resources of non-tonal, prepared, and inside piano sounds, with or without the use of electronic sound.
CHAPTER II

THE NEW FREEDOM: IMPROVISATION, INDETERMINACY, AND CHANCE

One of the most significant developments in contemporary music has been the widespread use of freedom with regard to virtually all parameters of sound. Unfortunately, there is no one term to describe this general process of musical freedom. "Improvisation" is a term often used to describe creative musical freedom, but this label is tinged with a more traditional musical meaning: operation within a given set of conventions, usually of a harmonic or melodic nature. Improvisation, according to conventional usage, is a term which fails to include the random procedures of the varied types of "aleatoric" music. This latter term, along with "indeterminacy", is often used to label the procedures of the "New Freedom", which, by whatever name they are called, are certainly an important and integral facet of the new music.
Roger Reynolds is one who has attempted to distinguish between three types of creative musical freedom: improvisation, indeterminacy, and chance. According to Reynolds, each type is a progressively less restricted musical device:

I see improvisation, indeterminacy, and chance as progressive degrees of a tendency to leave detail unspecified. The latter two are distinct from improvisation in that the notion of a 'common practice' is excluded a priori. If one wants the stylized freedom of improvisation, an appropriately framed set of conventions is necessary. If, on the other hand, a composer wants an indeterminate situation, there can be no preferred solutions - and, ultimately, in the case of chance, virtually no 'rules'.

Improvisation, therefore, implies patterns, idioms, and similar stylistic musical aspects, which, by definition, need not be of a traditional nature. Indeterminacy implies a breakdown of restrictions: one allows the outcome, within a specified framework (for example, a given set of pitches), to be totally free, and not within any specific style or "common practice". With chance, all restrictions are absent; the outcome is totally outside the reach of the performer. However, an important point to be made here is that, although the outcome is totally unexpected, the idea behind the chance event is not. That which inspires the chance event is often a carefully thought-out plan, one which, to be effective, requires as much creative imagina-

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1 Roger Reynolds, "Indeterminacy: Some Considerations," Perspectives of New Music, 4 (Fall, Winter, 1965), 136.
tion and energy as improvisation and indeterminacy. This breakdown of improvisation, indeterminacy, and chance will be adopted for use throughout this chapter.

The recital exhibited each of these three creative situations. Improvisation was employed during Cage's Variations IV and in Mclean's Dimensions II. Indeterminacy was used in the same two pieces, and chance procedures were utilized in Cage's Seven Haiku and, again, in Variations IV.

During the course of Variations IV, a stream-of-consciousness type of improvisation was created at the piano. The improvisation was actually an activity independent of the Cage piece and yet appeared as an integral part of the entire work. The stylistic framework of the improvisation was distinctly contemporary: use of primarily dissonant intervals, clusters, and inside piano sound. Ideas for the improvisation were influenced not only by the piece itself as it spontaneously evolved, but also by the varied indeterminate sound sources occurring throughout the room. What resulted, then, was a fully self-determined improvisation, influenced in part by totally indeterminate conditions, conditions which were also, as we shall see, partly chance-originated.

Variations IV, as Cage states in his introduction to the work, calls for "any number of players, (and) any sounds or combinations of sounds produced by any means, with or without other activities." Seven different sounds, or sound
"events," were chosen for this performance: an audio film, a reading, three different radio broadcasts, a slide projection, and a television viewing. Although the last two events listed here were silent, Cage allowed for "sound in movement". Six different "players" were required to perform the seven events (the film and slides were handled by one individual). The "other activity" performed with these seven events was, as we have mentioned, the live piano improvisation, played by the author.

Chance operations were used, for the most part, to determine the location, order, and duration of each event. The chance procedures to be used to determine location are described by Cage in his introduction. Seven dots and two circles, each drawn on transparent plastic, are randomly tossed onto or outside of a floor-plan of the auditorium space in which the work is to be performed. One of the circles is then used as a starting point from which lines are extended to each of the seven dots. The seven sound events are then produced at any point on the line outside the theatre space (lines are extended where necessary). When a line intersects with the second circle, a sound event is produced within the theatre space at any point along that line. ("Theatre space" was defined as the seating and stage area; the doorways and backstage area were designated as outside of this space.) For this performance, the author himself pre-determined which event would be in which chance-originated location. The decisions were based on the
predicted impact and effectiveness of each event, as well as certain practical problems (radio sounds, for example, could only be heard in certain parts of the room).

Although not stipulated by Cage, chance operations, for the sake of consistency, were also used to determine the order and duration of each activity. However, not all was left to chance in this regard. The order of presentation of six of the events was determined by throws of the dice (each number arbitrarily represented a different activity); the other event (the television viewing) was purposefully reserved for last. The duration of each activity was then determined by the flip of a coin in the following manner: "heads" was arbitrarily taken to represent thirty seconds, and "tails", one minute. The coin was tossed seven times to ascertain when each activity was to begin after the start of the piano improvisation. For example, the film event, the first activity to be presented, given a toss of heads, entered thirty seconds after beginning the improvisation; the second event, the reading, given a toss of tails, was presented one minute and thirty seconds after the start, etc.. Each activity lasted until the end of the piece, the time of which was purposefully set at eight minutes. A ringing alarm clock, situated backstage, signaled the end of the piece for all the players.

In addition to the chance origination of place, order, and duration, the seven events in themselves contained defi-
nate indeterminate elements. Each activity was bound by only one "rule", namely, that it fall within its own prescribed category of "sound". Other than that particular restriction there were indeed no "preferred solutions" for any of the seven different categories. In addition to the unique indeterminate elements of each event, which are described below, all six players were free to perform their events in any manner (within certain practical limitations).

The first sound category, film, was represented by one never before viewed by the author, or, more than likely, by the audience: a documentary film depicting desert life. Even the content and theme were unknown beforehand to both the author and audience. The second event, the reading, was performed in the following manner: pages were randomly selected by the narrator, who moved from passage to passage as he felt inclined. The book chosen for this event was the I Ching, the ancient and sacred Chinese book of divination, and one used by Cage in the creation of many of his "chance" compositions.

Three other events were radio broadcasts tuned to three different types of activities: traditional classical music, rock music, and a sports event (a live, professional baseball game). Although the radios were tuned beforehand, the volume of each event was up to the player. Naturally, the specific details of each broadcast were unpredictable and often unexpected. Contemporary art slides comprised a sixth
category of events. The many different slides, although created and chosen beforehand, were displayed by the player in random order and for indeterminate amounts of time. Lastly, the television event was presented. The performer of this activity indiscriminately focused a television camera on the audience, and, with a television monitor on stage, those present had an opportunity to both view and hear their own unplanned, spontaneous reactions to the event, and to the piece in general.

The specific events in Variations IV were chosen by the author for a number of important reasons. In addition to providing as much input as possible to help influence the improvisation, there were four factors influencing the choice of indeterminate events. First, the events were exemplary of the rich variety of sounds and activities in our contemporary environment. These sounds, following Cage's aesthetic, can be viewed as "music", with no value distinction being made between sounds such as those of classical music, a reading, or a baseball game. On the other hand, the events were also exemplary of the multi-dimensionality of life itself. Here, value judgments could be implied: certain activities, depending on one's individual perspective, can be viewed as being meaningful or profound, and others, as being meaningless or superficial.

Third, the seven events were exemplary of the unexpected, indeterminate nature of sounds and activities in
contemporary life. More so now than ever before, the production and control of sounds are often out of our control; we increasingly find ourselves subject to a barrage of chance and indeterminate sound events, derived from every conceivable source: the media, the environment, and, ultimately, from man himself. Finally, the seven events were exemplary of the simultaneity of sounds and activities in our environment. Sounds in our life are rarely heard, or so it seems, separately; we are exposed not to one sound at a time, but to many. Examples of this can be culled from any busy, modern American household.

In short, then, Variations IV was a model of contemporary American life and culture. During a serious artistic creation (the improvisation), the performer (creator) remained exposed to and influenced by the numerous sound events around him. And, like life itself, each event carried its own sounds, its own meaning, its own inherent indeterminacy, and its own simultaneity with the events occurring about it.

The indeterminacy and improvisation used in Mclean's Dimensions II were of a much more limited duration and type. Indeed, the total time allowed by the composer to the performer for his "musical freedom" was roughly ten seconds. Only three free passages are to be found in the work, the first two indeterminate and the third allowing for improvisation: a five second statement of ten F sharps, repeated with random rhythm and dynamics; a three second scale
passage, also repeated exactly with random rhythm and dynamics; and a short climactic section, lasting several seconds, in which the performer is told to "frantically improvise in the general style of music on this page" (page 13 of the score). The style of music found in this latter passage is one using extremely fast scale passages, glissandos, and rapidly accelerating and retarding repetitions of dissonant chords. Since the tape is running throughout the piece, all of the above-named passages are determined with respect to the total amount of time allowed; it is the detailed rhythmic and dynamic work which is left to the discretion of the performer. In the case of the third passage, the performer is allowed to improvise the notes as well, in the specifically given style of the composer.

The final work to discuss with regard to musical freedom is Cage's Seven Haiku. The manner of using chance operations in this piece differs from that found in Variations IV. In Seven Haiku, the performer has no role to play in the outcome of chance. Cage himself, using the I Ching, "composed" the entire piece; the performer has only to reproduce the outcome of the chance operations. Furthermore, the piece is strictly a "chance-composed" type of composition, and leaves no room for chance operations or indeterminate procedures either before or during the course of the performance.
Pedagogical Applications

Within the past fifteen years, piano pedagogy has undergone a remarkable move towards more creative music-making. Students are now encouraged to improvise both at home and in the classroom; creative abilities are expressed and allowed to develop. The freedom of contemporary music has undoubtedly helped to encourage and stimulate this new outburst of creativity, and yet the specific contemporary procedures of improvisation, indeterminacy, and chance, as we have defined them, have had comparatively little impact. That is to say, the creative freedom itself has been accepted and utilized by piano pedagogy, but the contemporary idioms and processes within which this freedom has been expressed have for the most part been rejected or ignored.

In this section, we shall proceed by first surveying three pedagogical areas within which the musical freedom of improvisation and indeterminacy has been expressed in the past: traditional piano, general music, and contemporary piano. Each area will be examined for ideas, techniques, and materials which can be of value for teaching procedures of the New Freedom to students of the piano. Following this will be a discussion on chance music, and another on certain other questions and points relating to this new direction in piano pedagogy.
Traditional piano pedagogy

We here use the word "traditional" with caution, since the techniques mentioned here originated within recent years, and are by no means universally practiced. What we refer to are some of the current and more popular approaches to piano improvisation, involving traditional harmonies and scales.

One of the first approaches to student improvisation, and still perhaps the most widely used one, was that formulated by Robert Pace, entitled the "Question and Answer", in which a musical "question" is given by the teacher, followed by the student's appropriately tonal "answer". The student is free to play his response in any manner, although imitative (parallel or sequential) ones are encouraged; the key element here is that the student must end (and, indeed, feels impelled to end) on the tonic or part of the tonic triad.

"Five-finger" improvisations are a freer type in that the student places fingers in any five-finger position (starting with the white keys), thereby incorporating modal as well as tonal scales. A student is free to begin and end the improvisation on any pitch within the scale; no attempt is made to follow any particular harmonic sequence (although, of course, one could be made).

Another popular form of improvisation for beginners
uses the pentatonic mode. With fingers only on the black keys (or transposed to other positions), the student, playing any keys in any order, is soon confident that he can "never make a mistake". The freest type of improvisation, however, coming closest to some of the forms we have talked about, and actually a form of indeterminacy, is that which depicts a mood or picture. For example, the student is simply asked to improvise a piece depicting his or her predominant feelings experienced the day of the lesson. Or, the student is told to create a piece depicting a scene, activity, or event, as is done in a recent newer course for piano study. 2 For example, in Volume Ia of this series, entitled Discovery, the student is given the title "Upstairs, Downstairs", and asked to create a corresponding piece, using skips and steps. 3 Of course, with free use of the imagination, there are numerous possible realizations of such generalized graphic descriptions.

It should be pointed out, however, that "freedom" is a relative term with respect to these latter forms of improvisation. Musical conventions still bind the student, in most cases, in the improvisations dealing with mood or other representations. However, the binding conventions are largely unconscious to the student. The student thinks he

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3 Ibid., Volume Ia, Discovery, p. 24.
is "free", and yet, musically, the greatest restrictions are placed on oneself due to a lack of knowledge and exposure. These restrictions include, as we have seen in Chapter I, an emphasis on tonality and traditional idioms, and a limited view of the possibilities of non-tonal sound and its use in compositional forms.

General music pedagogy

It is in the field of general music pedagogy that we find a much freer approach to improvisation, and to indeterminate styles and types. Indeed, it is here that contemporary music has made real inroads, comparatively speaking, as Bennett Reimer explains:

Spurred by the Manhattanville Music Curriculum Program, many other newly developed individual and group improvisation techniques, a burgeoning interest in the use of tape recorder and synthesizer composition, and the acceptance of contemporary notations, this generation of American youngsters may be the first of many to be propelled into contemporary music, rather than shielded from it, by their school music education.

There have been several noteworthy developments in general music improvisation and indeterminate procedures within recent years. Group improvisation and indeterminacy has grown in popularity, and has mainly been expressed through instrumental and choral ensemble techniques and freedom through movement and sound. An example of effective instrumental activity is seen in the work of Michael Iatauro. In

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his "chance ensemble", (actually, "indeterminate", by our definition), conventional and non-conventional instruments are used to play whatever sound comes to mind, participants joining in when "they think they have something to add to the piece." Choral groups too can share in similar kinds of creative freedom. There is now available a wide sampling of avant-garde choral works which utilize indeterminate procedures, as is pointed out by James May. In repeated rehearsals and performances, May found that the "door to creativity can be opened for the choral group through this style of music." 

Peter Hamel, Don Kaplan, and Murray Schafer are three principal innovators in the field of group improvisation, particularly that dealing with vocal sound and bodily movement. Hamel, influenced by varied experimental theatre practices, works with groups which undergo "Collective Self-Experience". In this activity, exercises are practiced for the individual and pairs of individuals within the group, as well as for the entire body, involving vowel sounds, bodily postures, and imitative techniques.

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7 Loc. cit.

8 Peter Michael Hamel, Through Music to the Self, (Boulder, Colo.: Shambhala, 1979), pp.197-206.
Don Kaplan, also influenced by experimental theatre, has his groups explore the world of sound through a large variety of indeterminate activity.\footnote{Don Kaplan, "The Joys of Noise," Parts I and II, Music Educators Journal, 62 (February, March, 1976), 36-44, 46-53.} For example, in the following exercise, the group heightens its awareness of a familiar vocal sound:

The entire group sits in a semicircle. Each person, in turn, says "hello" to the student next to him. No substitutions are permitted...and each person must say the word in a different manner. There are many ways to say "hello" by changing quality and expression without altering the word itself. The class then suggests other words...\footnote{Ibid., Part I, p.38.}

In another experiment, word sounds are transformed and made more abstract:

The entire group sits together. Choose one word and repeat it rapidly until it is transformed into a second word, then a third, and so on. Try not to plan ahead or to decide what the word might lead to. Try to evolve words as a group rather than by allowing individuals to force the group to follow them.\footnote{Ibid., Part I, p.40.}

Totally abstract sound can also be used, in conjunction with breathing, to explore the different parameters of sound, also within the context of the group:

As a group, lie down or sit with your eyes closed. Individually, become aware of your own breathing. Try not to alter your breathing...Begin to sustain an "ah" sound on each exhalation. Explore this sound by altering dynamics, intensity, duration, and pitch. Fill your entire body with sound. Become aware of and relate your sounds to the other sounds around you. The improvisation is over when the group evolves an ending.
Murray Schafer, in his essay "When Words Sing", suggests a number of similar creative experiences using vocal sound. In the following experiment, Schafer asks a group of students to create an original piece:

Using only your voices, create a composition based on the sounds of nature. Make your imitations as convincing as possible. Everyone must participate and the piece should have some sense of form. You have fifteen minutes.

Choric textures are employed in other exercises, in which the group as a unit creates varied settings:

Using voices create a choric texture to suggest mist; to suggest rain; to suggest a stream; a waterfall; a river; an ocean. Compose a piece of "Water Music" by looping together this itinerary of water sounds.

In a more difficult experiment, students are given free reign and asked to work with more limited material:

You have one note. Make up a composition with it. All I ask is that you don't bore me.

Of course, in such an exercise, students are forced to explore and utilize all aspects of sound (and silence); they can thereby more easily assimilate both traditional and

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12 Kaplan, op. cit., Part II, p.47.
14 Ibid., p.165.
15 Ibid., p.201.
16 Ibid., p.203.
contemporary musical ideas.

Elsewhere, Schafer suggests other creative projects, also in the context of a group, which use non-tonal sound of all types.\textsuperscript{17} We should note that here, as in the above examples, Schafer often refers to "composition" rather than "improvisation" or "indeterminacy". Schafer, being a composer, prefers to have his students work their ideas out until they are satisfied, rather than limit them to a once-only type of improvised experience. This does not mean, however, that spontaneous ideas are not encouraged; indeed, such ideas become the basis for all of the compositions created by the students.

A good example of a group activity based on non-tonal sounds examined by the students is "Music for Paper and Wood".\textsuperscript{18} In this piece, Schafer first asks the group to freely explore the different ways paper and wood (Japanese wind chimes) can be used as sound-producing mechanisms. Different musical parameters are then examined in relation to this newly-discovered sound. Students then attempt to imitate the varied effects of the chimes: attack and decay; duration; randomness. In ways such as these, students are not only exposed to important musical ideas, but are free to experiment and create their own sounds, improvisations, and compositions.

\footnotesize{\textsuperscript{17}Schafer, \textit{op. cit.}, pp.1-92.}
\footnotesize{\textsuperscript{18}Ibid., pp.81-89.}
Contemporary piano pedagogy

Contemporary improvisation, indeterminacy, and chance procedures have made few inroads into the discipline of piano pedagogy proper. However, we can point out some significant contemporary materials which can be of real help in presenting aspects of the new freedom to students. Stephen Covello’s beginning piano method,\(^1\) mentioned in Chapter I, is based almost entirely, in its beginning stages, on a set procedure of indeterminacy. This approach, largely developed in the 1960’s by George Self,\(^2\) allows the student to choose any pitch above or below a given line, which represents, in Covello’s text, Middle G on the piano. Thus, if the student sees or notates a black dot (or note, depending on the level of advancement) above the line, he or she plays any pitch above Middle C, and so on. No attempt is made by the composer to determine specific pitch (excepting Middle C); only direction, rhythm, and dynamics are given. Students therefore create their own unique pieces, which are built upon the formal content suggested by the composer. In spontaneous performances of such music, due to the very nature of the procedure, the outcome is often non-tonal in sound. Therefore, the freedom usually revolves around newer, rather than more traditional, concepts of sound.

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\(^2\)Schafer, *op. cit.*, p.249.
The tremendous advantage of this approach, then, is that virtually all the essentials of music can be learned by the student, in the context of freedom of sound and creativity.

The Duckworth method, too, allows for a great deal of student creativity. Book 1 of the series follows along the lines of the Covello method, except that here, both the treble clef G line and the bass clef F line comprise the given frame of reference. Books 2 and 3, written by Louise Guhl, provide additional opportunities for creativity, such as having the students choose and determine tempo markings, pitch registers, and dynamics. Students also provide accompaniments and finish pieces begun by the composer. Book 4, written by James Hopkins, is a short collection of pieces in contemporary idioms; several of the compositions leave rhythm or pitch indeterminate.

Aside from these two methods, there are also available some valuable supplementary keyboard materials dealing entirely or largely with the new freedom. Tom Long's collection is one dealing exclusively with varied procedures of indeterminacy. In "Melogic", the student is given a maze in which he is free to travel; each "step" consists of a different pitch. Duration, dynamics, tempo, register, and

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direction are also free. In "Random Density", pitch is indeterminate: three different rows represent high, middle, and low registers; the student follows the note values placed within one or another of these rows, playing single pitches or clusters.24

John Cage wrote a different type of indeterminate piece, one which allows for greater freedom of sound. In TV Koeln,25 a piece which, like all of the ones discussed here, is accessible to students at the early and intermediate levels of study, letters are used to designate the different types of sound to be played. The performer is called on to produce a sound on the interior of the piano, on the exterior structure of the piano, on the keyboard, or else an "auxiliary noise" is called for. Of course, the particular advantage of this piece is that students are able to express their creativity by choosing amongst an almost unlimited variety of sounds.

A good set of indeterminate compositions is the collection by Juliusz Luciuk,26 which is one of many excellent collections of children's pieces written by contemporary Polish composers, originally published in Krakow. Some of

23 Long, op. cit., p. 5.
24 Ibid., p. 15.
the selections in Luciuk's volume have the student choose the order of sections; others require free repetitions of motif material. The volume by Paul Cooper, referred to in Chapter I, is another good collection containing some indeterminate selections. Music containing notes of indeterminate duration and random order are presented, along with detailed explanations.

Finally, we mention two student piano books which encourage and foster contemporary improvising and creativity. Mosaics encourages creativity by discussing contemporary concepts, presenting them in compositions, and asking the reader to improvise and compose pieces using the same concepts. In this excellent text, many different contemporary idioms and ideas are explored and represented. The volume by Edwin Mclean provides for contemporary improvisation in a number of ways. Directions are given for "concept pieces", in which one improvises upon a "single, simple idea". For example, the performer is told to "make up a piece using low tones only", to "make up a chord and create an entire piece using only the notes in the chord", or to make up a piece


\(^{30}\)Ibid., p.7.
Examples of possible realizations are given. Students are also urged to make up their own concepts and improvise on these. In addition, Mclean encourages the reader to discover new sounds at the piano, and gives some examples of improvising, using inside piano sound.

Chance Music

It can be noted that in the preceding section there was virtually no mention of chance procedures, despite the fact that much of the music we have discussed has been described as being of the "chance" or "aleatoric" type. Actually, however, according to the definition given at the outset of this chapter, this music would have to fit into the category of "indeterminacy". As for the question of why chance music is so rare in the world of music pedagogy, we offer two rather obvious reasons. First, chance music is a simple affront to the ego. Few musicians desire to give up their artistic craft or creative abilities in favor of chance operations. As Roger Reynolds states, chance is a "formidable objective", and one which "invades some of the most tender areas of the artistic ego: craft, expressiveness, and individuality." This being the case, it would be hard to encourage a student to create chance music, since

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31 Mclean, op. cit., pp. 7-8.
educational objectives certainly foster the strengthening of individual abilities and personal worth, and not their wholesale elimination!

However, there is still room for the expression of chance procedures, if we accept the second reason for its scarcity, namely, that it is so difficult to "carry off" effectively. This implies that chance music can be effective, (presuming effectiveness is what one is after), if the imagination of the composer provides the right environment and conditions.

The composer of chance music must suggest an environment in which some uniquely circumscribed world of (usually) sound events will regularly occur. The world of possibilities - the environment - must reoccur, not a particular selection. He must achieve a distinctive end without the aid of what is known as craft (systematic prescription of detail).33

Chance compositions can easily be created in the classroom, and could occasionally be undertaken as group or individual creative projects. From a pedagogical standpoint, such projects would serve three purposes. First, they would foster the development of the creative sensitivity and imagination necessary to achieve the "distinctive end" of chance music. Second, they would provide exposure to and experience with this important and serious development of twentieth century aesthetics. Third, and not the least important, chance music, if intelligently handled, results in "ear cleaning", a process in which one becomes aware of the

33 Reynolds, op. cit., p.136.
sounds (or "silence") around him, both in and out of concert halls. Murray Schafer explains the necessity of this process for any serious musician:

Before ear training it should be recognized that we required ear cleaning. Before we train a surgeon to perform delicate operations we first ask him to get into the habit of washing his hands. Ears also perform delicate operations, and therefore ear cleanliness is an important prerequisite for all music listening and music playing. 34

This awareness does not necessarily imply indiscriminate appreciation of all that we hear (assuming we are not attempting to transcend the opposites of likes and dislikes, as in the aesthetic view of John Cage35). We may accept or reject sounds as aesthetically satisfying. The point is that we consciously listen and focus our attention on the expected and unexpected sounds constantly occurring in our lives.

How, then, can chance music be "taught" in the classroom? What kinds of projects and activities can be undertaken in order to serve the three purposes just mentioned? At least two different general types of activities can be recommended, one dealing with the chance content of pieces, and the other with the chance occurrences in the environment. We will now examine each type.

34 Schafer, op. cit., p. 49

Chance content of pieces

Students can experiment with the use of chance procedures in order to determine any number of a composition's musical parameters. Pitch, duration, tempo, timbre, and the like, can all be determined through chance means. The means available are many: the use of dice, coins, cards, and so on. One could even use the I Ching, a means which, as we have mentioned, John Cage has frequently used (Cage describes his use of the I Ching in his book *Silence*\(^{36}\)). Examples of actual procedures which can be used in chance operations, in this case using dice and coins, were given earlier in this chapter, in connection with Cage's Variations IV. Students should be encouraged to devise similar ways in which musical elements can be determined, and to discover other chance means which could be used.

The formulation of different elements of an individual piece, using chance procedures, can eventually be expanded into the formulation of the "theatre piece", one which comprises several different events. The content of each event, manner of presentation, duration, and so on, could be determined by chance, similar to the preparations undertaken for Variations IV. Not all elements need be subject to chance, however. That would depend on the creative imagination of the students, in addition to any special conditions.

or limitations. A key consideration here is the artistic, or even philosophical, purpose or intent of the piece. As was the case with Variations IV, the "message" of the piece, whether musical or otherwise, should be formulated and made clear; students, indeed, should begin their chance project with an initial idea or "spark" which will impel the creation of the entire work.

A worthwhile project for the piano class (one containing acoustic pianos) is to create a theatre-type piece in which each piano is treated differently. For example, one piano could be prepared, another played only on the strings, another altered electronically, and others played in the "normal" manner. Each piano could use different tonal and non-tonal styles and effects. The parameters of each, how they all "fit" together, and even the choice of which exact sounds to use, could be determined by chance operations. In addition, other sound events could be added; the types and categories of sound, as well as how each is modified by chance operations, are all determined by the creative imagination of the class. If electronic pianos are used, the options are of course more limited, and yet, with the addition of electronic, exterior, and environmental sounds, many types of "theatre pieces" are indeed possible.

**Chance occurrences in the environment**

The second suggestion for the creative presentation of chance procedures in the classroom is that of working with
the environment. Sounds occur around and within us constantly, some of them expected and some of them unexpected, and many of them beyond our control, (thus the label, "chance"). Schafer calls this environment of sounds the "world soundscape". In fact, he treats the sonic environment as one gigantic musical "composition":

My approach...has been to treat the world soundscape as a huge macrocosmic composition which deserves to be listened to as attentively as a Mozart symphony. Only when we have truly learned how to listen can we make effective judgements about the world soundscape. I am especially anxious that musicians should take the initiative in this field, because musicians are the architects of sounds...)

There are many types of listening experiments which could be undertaken by students, both in and out of the classroom. Each involves what might be called "creative listening", in which one's sensitivity is heightened, and new or previously unnoticed sounds and patterns of sound are perceived.

A possible procedure to take could be the following:

As the students enter the class Schafer stands at the door motionless with a pile of paper in his hand and a sign pinned on his jacket reading: "Take paper. Write down the sounds you hear." The students entering take paper and record the sounds within and outside the room. A discussion follows to see how sound sensitive the students have been.38

Another experiment could be the taping of any classroom activity or discussion, unbeknown to the class; the tape

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38 Schafer, Creative Music Education, p.53.
is later used as "evidence" of the sounds simultaneously occurring during the activity, and which might or might not have gone unnoticed by the class.

Students could also examine sounds outside of the classroom, as in the following imaginative study, which is a good way of revealing the unique soundscape of contemporary life:

One day the class was asked to look at a painting by Pieter Brueghel the Elder - "The Battle Between Carnival and Lent" - and to record all the sounds and potential sounds in it...

Secondly, they were asked to go down to the corner, set up a tape recorder and tape ten minutes of contemporary environmental sounds.

Then they were asked to compare the sounds to be heard in the sixteenth century with those to be heard in the twentieth century, for instance, the number of human sounds and the number of mechanical sounds.

The same experiment could be worked with a number of paintings, poems, or dramas from different periods in history or from different civilizations.39

From environmental sound projects such as these, students can easily take the next step and create environmental chance compositions. For example, following the taping of environmental sounds in the project just mentioned, students could play the tape to accompany live improvisations or pieces. Or, the tape could be altered, using "concrète" electronic music techniques, or combined with any other number of sound sources, such as synthesized sound.

Another example of an environmental chance composition is the use of periods of "silence", in which sounds heard

39 Schafer, Creative Music Education, p.91.
during those periods are conceived as part of the piece. The doors and windows of the classroom could be left open, so as to allow for maximum input of sound. Between the periods of silence could be any number of sound events or performance activities, such as group or individual improvisations which "respond" to the chance environmental sounds which have been perceived. Another alternative variation on this idea could be the substitution of media such as radio or television, tuned at random, during the "silent" sections of the piece, so as to provide further unexpected input. Similar to what occurred during the performance of Cage's Variations IV, improvisations could also be performed during the periods of chance sound, in which students could react in any number of ways.

Further Considerations

This section will be concerned with three additional discussions on the practical application of improvisation, indeterminacy, and chance in the piano classroom. First, several generalized practical suggestions will be offered; the last three of these closely parallel those given in Chapter I, in relation to non-tonal music. Second, we will summarize the ways in which procedures of the New Freedom can be utilized in the piano classroom, presenting further concrete examples to demonstrate this use. Finally, we shall outline a weekly "Program of Creative Study" for piano students.
Practical suggestions
Teacher confidence and ability

The teacher should possess the skill and uninhibited confidence which is so necessary for an atmosphere of creative freedom. Students can easily sense a teacher's inhibitions and dislikes; if these are present, it is doubtful that any fruitful creative activity can result. A teacher's skill in improvising, and in the use of indeterminate and chance procedures, need not be on constant display in the classroom. Rather, these should be used to guide the students, and to assist them in making artistic decisions. Often, as Murray Schafer points out, the teacher need only ask the right question, in order to get the class started in a fruitful creative direction, and which hopefully results in an "hour of a thousand discoveries". 40

Exploration of easy creative procedures

It goes without saying that the emphasis at the initial stages of exposure should be on easier improvisations, and on simple indeterminate and chance procedures. A corollary to this recommendation is that at the beginning, almost complete freedom should be allowed. That is to say, students should be free to fully explore, examine, and play the sounds available to them. This idea not only makes it

40 Schafer, Creative Music Education, p. 229.
easier for every student to participate, no matter what his or her capabilities, but also has the advantage of keeping the ear open to non-tonal sound. Gradually, improvisations and indeterminate procedures can become more defined and elaborate; in short, greater restrictions can be placed on the students. And, at an even more mature stage, students can again regain their total freedom, armed with an experiential knowledge of both traditional and contemporary techniques of improvisation, indeterminacy, and chance.

Initial emphasis on creative procedures

Contemporary techniques, like non-tonal music, should be emphasized from the start of piano study. By making these creative techniques a normal part of study from the beginning, the student's acceptance and understanding is assured. More traditional styles of improvisation, it should be noted, are not ignored but placed in proper perspective, as procedures involved with more traditional idioms.

The use of imagination

As was the case with non-tonal music, the use of imagination is helpful for the realization of improvised, indeterminate, and chance music, particularly at the early stages of study. There is no doubt that when students center their improvisations around a story, or evoke imagery with their indeterminate or chance pieces, they are
communicating music relevant both to them and to their audience.

**Utilization of creative procedures in the piano classroom**

Having surveyed, in the last two sections of this chapter, both the piano and general music fields for creative ideas of improvisation, indeterminacy, and chance, let us now present a brief summary and discussion of the ways in which the New Freedom can be used in the piano classroom or studio.

**Solo improvisation and indeterminate activity**

When we refer here to improvisation, we of course mean improvisation using contemporary idioms and styles, although improvisation can, and eventually should, cover the stylistic characteristics of every period of music. From our point of view, the four most significant idiomatic and stylistic expressions of the contemporary era within which improvisations should be created are non-tonal music (as we have defined it), prepared piano sound, inside piano sound, and electronic music.

Earlier in this chapter, in the section on traditional piano pedagogy, we saw examples of creative activities which can be conducted by the student alone or between student and teacher. One could easily transpose some of the tonal exercises into contemporary idioms. For example,
in the "five-finger" improvisations, the hand can be placed in a chromatic or other non-tonal position, thereby freeing the sound from tonal or modal restrictions. Or, improvisations can be conducted with the original diatonic five-finger positions, with the difference that each string is prepared beforehand in a different manner; this could result in a fascinating array of timbres which would sound totally different from the original unprepared sound.

In the indeterminate exercises where students tell a story or depict a mood, also described in the section on traditional piano pedagogy, the addition of the New Music idioms would of course greatly enhance the scope of creative possibilities. In this kind of activity, where no idiom or style is specifically called for, the New Music greatly adds to the number of sounds and ideas from which to choose.

Group improvisation and indeterminate activity

The use of improvisation and indeterminacy within the group is a significant development within contemporary pedagogy, one which can greatly foster creativity. Within the group, a student can "merge" his playing with that of his peers, thereby strengthening his sense of purpose, encouraging his efforts, and making him feel a sense of accomplishment as the group spontaneously evolves an improvisation or other creative outcome. The group or class
arrangement also improves listening skills and results in the sharing and exchange of ideas.

There are basically two types of creative activities which can be conducted within the group. First, there is the simultaneous creative playing of all or some students within the group or class. Second, there is the solo playing which responds to other group members. We shall now examine each type.

**Simultaneous playing.** Earlier, in the section on general music pedagogy, we saw examples of simultaneous creative playing in Iatauro's chance ensemble and in some of Kaplan's work. Students in such group activities can learn to listen and respond to other group members, thereby fostering a healthy exchange of ideas. Students can also learn to supplement their playing with that of their peers; the other student's music becomes an "extension" of their own.

We shall give three examples to illustrate this kind of simultaneous group creative activity within the piano classroom, each involving any reasonable number of students at their own piano, or a small group sharing an instrument:

1. With each student responsible for a different sound (for example, cluster playing, plucking of strings, prepared sounds, single pitches at the keyboard, etc.), create a group indeterminate piece. Each student plays when he or she thinks appropriate, in response to other
group members, or whenever the student feels that a sound
or idea would provide valuable input to the group piece.
A student conductor could also be appointed, who would
serve to control rhythm, tempo, dynamics, or simply to
bring in certain sounds or groups of sounds at different
times, and in general to mold the piece into a specific
form.

(2) The entire group plays an identical phrase or
other passage, and proceeds to improvise in the following
manner: each member enters at different times, playing the
passage in a way different from the rest (for example, dif­
ferent rhythm, tempo, dynamics, etc.). The passage is re­
peated over and over, during which time each student
strives to listen to the unique intermingling of the pas­
sage between all group members. A related alternative to
this improvisation is to have all start by playing the same
passage in the exact same manner; each student then gradu­
ally, almost imperceptibly alters the passage, in any spon­
taneous manner, during the course of the numerous repeti­
tions. Again, the emphasis is on listening: listening to
the varied patterns and unexpected interweaving of ele­
ments. This type of playing is similar to the "process
music" of Terry Riley, Steve Reich, La Monte Young, and
others.

(3) Each student picks a different natural object (for
example, water, birdsong, thunder, etc.) and imitates it
musically. Any type of new musical sound can be utilized (non-tonal, prepared, and inside the piano sound), and students can prepare their imitations separately from the rest of the group. When the group meets, the students improvise a "nature scene", in which each member plays his or her imitation in a way conducive to a group conception of the piece. The imitations should be altered and developed as the piece evolves, and students must be careful to let all the varied sounds be heard and appreciated. Again, a conductor could be appointed if the group feels one is necessary.

Response playing. The other type of improvised or indeterminate activity which can be conducted within the group is one in which each student is placed in a give-and-take situation with other members. Each student plays alone, in response to the preceding group member, and can condition his response in any conceivable manner (similarity, contrast, development, etc.). We shall give two examples to illustrate this type of creative endeavor within the piano classroom:

(1) Each student plays an identical note, chord, or passage, in a manner different from the preceding student. All of the different musical parameters should ultimately be explored by the group. The emphasis in this exercise is on discovering the varied ways in which a seemingly simple sound or sounds can be played and expressed.
(2) The students play a group improvisation in the following manner: each student improvises in turn, building on the music of the preceding student. Ideas are taken from each other and developed, in any manner conceived by the students. Each improvisation should be considered as part of the total piece, rather than as an individual improvisation only. Each student should play a given number of times; the group should evolve an ending on the last round of turns.

Solo composition

With solo composition, each student has a chance to individually work out and experiment with ideas and concepts. Composing can and should be done in class, under teacher guidance and supervision, and at home, where the student can compose as part of a weekly assignment. A good idea is to have the class comment on and discuss individual student compositions, so as to enhance the learning experience.

Group composition

In group composition, each student contributes to the final outcome of a piece. The purpose of this activity is to gain a greater sampling of ideas, as well as a greater perspective, and to set an example of the compositional process, under teacher guidance and supervision. Along with other group creative work, it also serves to bolster
the confidence of those reluctant to indulge in creative activity on their own.

The group and solo compositions discussed here can and should include any of the sounds of the New Music which we have covered. Student composition, to be comprehensive, should eventually cover all elements and aspects of the New Music which are presented to the students in their lessons. Furthermore, student compositions should include improvised and indeterminate elements, examples of which they have experienced in their solo and group improvisations and indeterminate activities.

Chance activities and projects

We have discussed this aspect of the New Freedom and its use in the piano studio in the previous section. Of course, chance procedures can involve either the individual or the group. Group work is preferable, since the "theatre-piece" and similar projects are only effective and feasible in a group or class setting.

Use of materials involving improvisation, indeterminacy, and chance

In the section on contemporary piano pedagogy we discussed some of the current methods and materials available which use contemporary creative ideas. If one is serious about teaching the New Music and procedures of the New Freedom from the start of piano study, then surely such
materials are practically indispensable. Such materials provide examples and models from which the student can glean ideas, and of course, provide the student with contemporary music which has interest and value in its own right.

A Program of Creative Study

Having presented a summary of the uses of the New Freedom in the piano studio, some questions yet remain. In what sequence should such procedures of the New Freedom be presented to students? Should all of the aforementioned activities be presented, at least in part, at every lesson? Is it practical to even consider so many creative procedures, when there is already so much to deal with at the lesson?

In response to these and other similar practical concerns and problems, we here suggest a weekly "Program of Creative Study" for piano students. This step-by-step approach, which can easily be incorporated into the lesson plan, covers all of the procedures which we have discussed, with the exception of chance music. Chance activities and projects, since they involve so much time and preparation (although certainly not in every instance), can be conducted on special "Chance Days" which are particularly devoted to such projects.

The following Program can be undertaken by students of any age, and can continue for as long as method books are
used, and even, with some adjustments, beyond that point. Creativity, indeed, should be a life-long endeavor, and not one limited by age or level of advancement. This approach can also be used with any style of music, not just the contemporary; however, we again assume that, at least in the beginning stages, a method and approach using the idioms and styles of the New Music is being used.

Solo and group improvisation and indeterminacy

The creative process begins when students creatively use specific elements which have been presented or covered in the lesson for that day. These elements, discovered by the students in isolation from the text or materials they happen to be using, could fall within any of the parameters of music. They can be used in a student's individual creative playing, or, depending on the element, and using any of the techniques we have described above, in the group's improvised or indeterminate activities.

The purpose of using newly presented elements in creative activities is twofold. First, the elements are reinforced in the minds of the students; applying the elements in creative situations strengthens and clarifies their meaning and scope. Secondly, creativity is thereby easily made a part of the lesson, and the freedom of improvisation and indeterminacy is used to focus in on one specific idea.

This important first step is by no means limited to
beginning students. Even advanced students, working on re-
ertoire, can improvise on problematical or otherwise sig-
nificant aspects of a composition, or can perform indeter-
minate exercises, in no particular style, relating to 
elements of the piece.

Group composition in class

Following the improvised and indeterminate solo and
group activity, the class then proceeds to jointly compose
a piece, based upon the same element just used. The pur-
pose of this activity is to have the students further
creatively explore the ramifications and possibilities of
the newly learned musical element. By composing, the group
gets a chance to see the element expressed in notation and
to work with it in greater depth. (Of course, in order for
the class to work effectively in this regard, a blackboard
is indispensable.)

The students proceed to compose in a group, rather
than individually, at this time since the concept they are
trying to assimilate is still so new. A group situation
gives greater positive input at a time when insecurity con-
cerning the newly learned element is still highly probable.
It should be emphasized that the length and complexity of
the group composition need not be great. Indeed, if class
time is short, the piece of necessity could contain only a
short phrase or statement. Or, if so desired, the piece
could be started by the class and completed by the individual students at home, in which case this might, although not necessarily, conflict with the creative steps which follow.

As we have mentioned previously, the students should be encouraged to use, although by no means all of the time, aspects of indeterminacy, and even chance, in their compositions. Although musical elements such as rhythm, pitch, dynamics, and so on, can be easily expressed without the use of indeterminacy or chance, the latter procedures could further add to the student's creative opportunities and should not be overlooked.

Advanced piano students, it should be noted, can also follow this step, even though, in their case, the elements covered are more than likely not new, but rather challenging, problematical, or of some interest.

Comparison - analysis

Having completed the group composition, the students are next exposed to a finished, mature composition containing the element or idea which the class has been creatively dealing with. The composition will most likely be taken from the student's method-book, but any piece, appropriate to the group's level of advancement, will suffice.

After an initial exposure to the piece, the students then compare their efforts at composition with that of the
The lessons to be learned here are of course significant. Students learn how an experienced composer deals with material (in particular, with the element they have been studying), and they are thereby better able to discover any strengths or weaknesses inherent in the group piece which was just created. (We are of course assuming here that the materials being used are of a high calibre.)

Comparison cannot proceed without analysis. Students should fully analyze what they have written, and compare the results with an analysis of the composer's work. Upon doing so, students often perceive new ideas and organizational aspects of composition which at first hearing had eluded them, and which can be used by the students for future creative work.

In the comparison and analysis of the student's and composer's music, the newly learned musical element or idea becomes even more fully understood and a part of the student's musical consciousness. Analysis, of course, is also helpful for an adequate performance of the composer's work. We should point out that a cursory analysis and comparison may have to be undertaken, if time is short; in that case, students could again complete the work at home, returning with their individual insights into the music.

Solo composition at home

The next step in the creative process involves in-
dividual student compositions. Each student writes a composition, using the composer's piece which has been given as a model. Assuming that the composer's piece is effective, stimulating, and coherent, the students base their new effort at composition on a piece capable of guiding them into proper creative channels. The student's solo pieces will again contain their newly learned element or idea; this time, however, their pieces are based on ideas, whether they be rhythmic, melodic, structural, or otherwise, found in the model composition.

The students here get a chance to individually express themselves creatively in writing. Students have the further advantage of being able to write at their own leisure, and in the privacy of their own home. The length of the composition is not such an important factor; it is perhaps best, in the beginning stages at least, to keep the piece short, although students should feel free to expand their pieces if they feel inclined.

Students should at all costs be made to follow the model in their composition, since the learning experience here can be so significant. Should one or another student have other ideas independent of the model's (which is likely), then he or she should be encouraged to pursue them, and to write an additional composition to include those ideas. The original assignment, however, should still be completed.
Performance - discussion

This last step has each student bring their piece to class, where it is performed by the student composer in front of the group. Each student should be encouraged to study his or her own composition and should be able to perform it, although it is possible to have the teacher, or even other students, play the composition as well. Probably, due to time considerations, not all pieces will be able to be heard and discussed; in that case, students could alternate playing their compositions from week to week. Whether students perform their piece or not, the work is handed in, examined by the teacher, and returned the next week, complete with corrections, additions, and comments, if necessary.

After the performance of each selected student composition, the group proceeds to discuss each piece. This discussion should center around the use of the new element or idea within the composition, and how it compares with the use of the same element in the model piece. The main focus should be on the new element around which the composition was created, since one of the purposes of this creative program is to reinforce and clarify concepts learned at the lesson. Of course, past musical concepts and ideas may also be discussed (students are encouraged to use, in their creative activity, elements and concepts presented in past lessons), in addition to more intangible aspects
of the piece, such as style and effectiveness.

All of the steps of the "Program of Creative Study" which we have here outlined are designed to be undertaken each week. The time for each step will of course vary, according to the complexity of the new concept, the number of unexpected problems which may occur, and the time allotted for the lesson. It is conceivable that, especially for advanced students, step two (the class composition) could occasionally be eliminated. In this case, step three (the comparison - analysis) would apply to the individual and group improvisations, in addition to the music being studied by the class.

In summary, with careful lesson planning and organization, the procedures of contemporary improvisation, indeterminacy, and chance can be utilized in the piano classroom or studio on a regular basis. By effectively using these procedures in a weekly program such as the one outlined here, exposure to and appreciation of these important musical techniques is assured. Students are thereby better able to express and develop their creative potential within the confines of the New Freedom of contemporary music.
CONCLUSION

In this project we have examined some of the new sounds and creative procedures of contemporary music, and have attempted to bring these ideas into the piano classroom. We have discovered that piano students, even at the beginning levels of study, need not remain isolated from current new musical developments. By employing some of the pedagogical techniques, procedures, and materials suggested in this paper, the piano teacher can make students aware of the vast, seemingly limitless sonorities and creative possibilities to be found in the world of music. Contemporary music has freed us from the confines of tonality and other conventional idioms and techniques. Now, with the proper approach, understanding, and insight, it is possible to share this musical freedom with our students.
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