Spring 1977

The Psychology of Musical Performance

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The Psychology of Musical Performance

by

Pauline Kuykendall

A thesis submitted to the Department of Education in partial fulfillment of the requirements for academic honors with an Area of Concentration in Elementary Education

Carroll College

Helena, Montana

April 1, 1977
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This thesis for honors recognition has been approved for the Department of Education.

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Reader

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March 18, 1977
Date
PREFACE

This thesis began as a personal searching for answers to problems encountered by musicians during musical performances. A search was made of the available literature; my scattered thoughts were harnessed; my questing was arrested; and I compiled a presentation for the satisfaction of this performance opportunity.

The thesis was then put through the evaluation processes. Answers I had found which were so plain to me were somewhat confusing to others; there was a call for clarification and organization for the benefit of the reader; an upgrading of production quality was needed. The familiar performance traumas began to grip me. I was beginning to feel insecure. Then I quickly tumbled down the ladder through panic, depression, despair. My personal creation was being remolded.

Through the chaos came a glimmer of light. Two days earlier John Downs had said to me, "Pauline, you have to learn to trust your own integrity." I came to understand the relationship between this expression to the experience of musical performance: a student is asked to perform music composed by a first person, taught through a second person (the intermediary teacher), and performed for the enjoyment
of other persons (the audience). The needs of the performer are often relegated to last place. If the needs of the performer are met but the process causes embarrassment to any of the other members of the involved group the performance has failed. A whistling boy on the street corner is more the master of music than the concert musician; for, the criteria of concert performer demands a reproduction (a memory photograph) of the composer's work as interpreted by the memory of the audience. This is the essence of the psychology of musical performance.

Acknowledgements are due to the fine faculty at Carroll College. Their academic capabilities, their openness to searching for truth, and their supportive interest in the individual are to be commended. Miss Bull gave of her time in dialoguing with me and supplied reference books from her personal library. Tom Block permitted me to use him as a sounding-board for my ideas. New musical language and terminology have been gained from instruction from Mrs. Cecilia Grose. She has given me hours of her time and shared a vast amount of personal insight into musical performance aspects. Several reference books came from her personal library. Acknowledgement must be given to the amount of time and guidance given to me by my three readers. Many parallels between physical and academic development as compared to musical development were drawn from instruction by John Downs and Tom Hamilton. Their lectures and course materials have
been extremely helpful. They read my early papers and gave constructive advice and guidance. Tom Hamilton has patiently endured my novice approach to psychology, carefully adding to my instruction in this field. He also supplied reference books from his personal library for my use. For the aspect of approaching education from a humanistic point of view I am indebted to my advisor, head of my thesis committee, and educational instructor, Dr. Allen Pope. Under his tutelage education has become more to me than the mere acquisition of academia.

Acknowledgement is deserved for my fine husband who sacrificed gourmet meals and a spotless house to allow his wife the time and opportunity for personal growth and development. Without his sharing of the care-taking duties of home and family this accomplishment would have been impossible. A great big "thank you" to each of my four children: Debbie, Stephen, Melody, and Cindy. They have been the raw material for my awkward molding; they allowed me to introduce them to the world of music. By their perserverance and struggle they have each come into their own musically and surpassed their mother in knowledge and abilities. I salute you, each one.
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CHAPTER I

INTRODUCTION

Difficulties accompanying musical performances have been acknowledged by music educators. Kurt Adler, in his book *The Art of Accompanying and Coaching*, reminds the accompanist that "the soloist's lapses of memory . . . may happen anytime and never fail(s) to happen at some time during a performance."\(^1\) Other performance problems are represented in Adler's instruction to teachers and coaches:

Teacher and coach should also discuss the psychological and pedagogical approach to be used with their different pupils. I have found out through bitter experience that no method, no one way of treating the singer, can be adopted. The coach's psychology and his pedagogical approach must be flexible. Overly nervous pupils must be calmed down; phlegmatic ones must be whipped up into a frenzy of studying. Too-diligent ones must be braked, lazy ones ought to be given a daily assignment. Self-conscious pupils must be encouraged, conceited ones should be hit unmercifully (if conceit is genuine and not an overcompensation for insecurity). I have seen hysteria so severe that not one tone would come out of a singer's throat. In such cases, the artificial creation of a minor breakdown with tears has proved very helpful. After the breakdown, the singer relaxes and his voice becomes better. In such extreme cases, family or other personal difficulties usually can be blamed.\(^2\)

\(^{1}\) (St. Paul, 1965) p. 239.

\(^{2}\) Ibid., p. 185.
It has been the hope of music educators that these musical performance problems could be avoided—some way found to prevent the development of these problems. In his book *The Psychology of Music Teaching* Edwin Gordon advocates using a standardized measurement of musical aptitude as a basis for determining the predictive success of musical achievement. Predictive success is a new term in psychological studies. A study is made of persons achieving a high rate of success in a particular field and a compilation is made of their characteristics and abilities. These items are compared to the characteristics and abilities of the individual who is interested in entering this field. The analysis will show some kind of correlation between these items of the persons already successful and the interested person. A high positive correlation indicates a strong possibility of predictive success in this field for this individual; a low positive or negative correlation would indicate that this may not be the field this person should enter and expect to be successful.

The standardized measurement advocated by Gordon is the comparatively new Musical Aptitude Profile; it is an eclectic test that incorporates the European omnibus theory and the American atomistic theory. Using random sampling which followed the sampling procedures employed in Project Talent, "the analysis of test results showed no systematic differences in score distributions in relation to: 1) school
geographical location, 2) school size, 3) whether a school was in a rural or urban setting, and 4) the socio-economic status of a school district.\(^1\)

Gordon summarizes musical aptitude thus:

Musical aptitude is comprised of tonal imagery, rhythm imagery, and musical sensitivity. The last includes aesthetic expressive-interpretive qualities. Musical memory of the tonal and rhythm types appears to be largely a measure of musical achievement. Evidence suggests that rhythm imagery is the basis, and musical sensitivity the unifying element, of musical aptitude.

Environmental factors such as socio-economic status and musical training bear little or no relationship to musical aptitude. Nor have race, religion, or nationality been found to affect levels of musical aptitude either positively or negatively. Culturally disadvantaged groups may both contain musically talented students. It appears, however, that low socio-economic status impinges on musical achievement.

The correlation between intelligence and musical aptitude test scores is positive but low. Academic achievement test scores correlate somewhat higher with musical aptitude test scores. Musical aptitude test scores predict success in musical achievement significantly better than either intelligence or academic achievement test scores.

Subjective notions notwithstanding, research has not indicated any substantial relationship between musical aptitude and specific personality characteristics.\(^2\)

A choice of whether a child enters the field of music is not always left to the results of test scores or teacher preference. Many children are studying music under parental direction and/or because of personal interest. Students that are currently receiving music instruction achieve at a wide range of performance levels. Many good students face

\(^{1}\)(New Jersey, 1971), p. 29. \(^{2}\)Ibid., pp. 36 & 37.
seemingly unexplained difficulties in performance. Take, for example, the case of Patricia.

Patricia is a beautiful, poised, intelligent, and talented young lady. As a freshman at the university she qualified as a participant in the Annual Spring Concerto Concert, an event normally reserved for seniors and juniors. To qualify for this honor, Patricia had to be recommended by her private music instructor for the audition. She then played her number for a group of music faculty members, and was chosen out of a list of such participants in the audition. After being chosen, Patricia rehearsed her violin concerto with the university orchestra. During dress rehearsal Patricia played beautifully, as usual. Then came the night of the concert. During her performance Patricia's mind blanked and she forgot where she was in the piece. After prompting from the conductor, Patricia remembered the piece and rejoined the orchestra.

Such performance difficulties raise questions for music educators. What happens to talented musicians during the actual performance of their musical numbers that results in performances that are less than their best? Why do two musicians of comparable abilities give performances of such divergent qualities? What can a music teacher do to help or encourage the underproductive musician? To answer these questions some music educators have turned to the psychologist.

Psychologists are making breakthroughs in the explorations of personalities in conflict with self and their
environment. In this paper some applications of psychological principles to musical development and performance skills are made in the area of anxiety and its relief. The application of the critical periods in language development to development in music as a special case of language is also made in this thesis.

Music teachers have been slow to incorporate the principles of psychology for anxiety reduction and very little has been researched by the psychologists in the specific application of the principles to music performance. Chapter II will deal with the basic principles of anxiety and anxiety relief. The value of applying this information to music performance will be pointed out to the musician.

The best instruction can be of no avail if attitudes of the persons involved are destructive and undermine the general purposes of music performance. A survey of elementary school children revealed the basic attitudes of children toward their own performances and the performances of others. Chapter III will present the survey and discuss the relation of attitudes toward performance to anxiety.

Music is seen by many as a special case of language. The drawing of parallels between language development and music language development has necessitated revisions of the scope and sequence of music instruction to correspond to the critical periods of language development. While some feel critical periods are theoretical and lack validity,
the concept has already been applied by music educators. The theories and methodologies that have evolved from this position will be presented in Chapter IV.

Music educators have generally been independent of outside influences on their theories and methodologies. Today many areas of instruction are overlapping; music educators are finding their sanctuary being invaded by research on learning disabilities. Some conclusions from this research are of vital importance to music educators because of basic conflicts. One such conflict is found in the Doman-Delacato theory of cerebral dominance and neurological organization. A background of the theory and its implications on the critical period of music language development will be given in Chapter V.

The final chapter will summarize the progress made in the field and share some personal observations of the author of this thesis.
CHAPTER II

ANXIETY

The basic complaint about musical performances by musicians is the experience of physiological changes which they identify as anxiety. This is also the area in which psychological theory and research are centered in regards to performance. This behavioral aspect of performance has been dealt with by 1) systematic desensitization, 2) biofeedback, and 3) humor. The definition of anxiety, its relief, and the subsequent relationship of this material to musical performance will now be given.

Definition of Anxiety

The definitions and ramifications of the word anxiety are varied and controversial. Two sources of conflict are: 1) the difficulty in defining the term to the satisfaction of all concerned with such definitions, and 2) the conflict between psychological theories. Two approaches to the definition will be given.

Leonard P. Ullmann and Leonard Krasner point out the relative newness of the word itself: "The word anxiety was hardly used in standard medical and psychological textbooks
until the late 1930's. It was a result of Freud's writings about Angst, translated as anxiety, that the term now has wide currency. Now, it is the effect, rather than the cause, that holds anxiety in the central place in the explanations of symptoms.

What anxiety means, as presented by Ullmann and Krasner, is presented in the following:

Some of the definitions are expressed in terms of overt behavior, such as tremor, stuttering, and coughing; some in terms of complex conduct such as avoidance, defense and denial; some in terms of antecedent events such as aversive stimuli and memories of traumatic events; some in terms of physiological responses such as heart rate, GSR (galvanic skin response) and respiratory rate; and some in terms that have no existent referents, such as apprehension, dispositions, emotional states, states of mind, psychic states, affects and feelings.

They also present the Dollard Miller definition of anxiety: "... a learned symptom must produce a certain amount of reduction in the state of high drive motivating it. Therefore, interfering with the symptom by any of the foregoing (direct) methods will be expected to throw the patient back into a state of high drive and conflict."2

Another view of anxiety is presented by Lyle E. Bourne, Jr. and Bruce R. Ekstrand. The physical sensations that acquire the term "anxious" are results of learning

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2Ibid.
Learning and anxiety. Anxiety is conceived of as a generalized drive by some psychologists. The idea is that it can be aroused by any of a number of threatening or harmful stimuli or by the removal of desirable stimuli. An extremely hungry person and one threatened by failure on an upcoming examination are both likely to be anxious, although the stimuli in question are considerably different. In a sense, anxiety represents the higher end of an arousal continuum, with panic and sheer terror at the extreme end of the continuum.

Because of its pervasiveness, anxiety often becomes conditioned to neutral stimuli, which leads the person to become anxious in situations that include those stimuli. Under these conditions, we would call anxiety a learned or secondary drive. ... anxiety can be classically conditioned, as for example when pain is paired with a neutral stimulus. Since the neutral stimulus will come to elicit anxiety, the organism will behave in a way that can be described as trying to avoid that stimulus—he appears to have developed a drive to avoid the neutral stimulus. For example, a person who has been mugged in the subway may begin to associate the pain of the mugging with subway stimuli. He may now feel anxious just being in the subway and will go out of his way to avoid the subway, anything associated with it, and perhaps all public transportation.¹

If anxiety is prefaced by a learning situation, the act of learning itself may have components that set up the criteria for the resulting anxiety. Questions have been raised as to the relationship between motivation, learning, and performance. Are they related in a cause and effect way? Bourne and Ekstrand have raised and looked at some of these questions.

The relationship between motivation, learning, and performance. One important psychological question is whether or not motivation is necessary for learning to occur. Do you learn anything you are not motivated to learn? If you are merely strolling down the street, do you learn or remember anything about the objects and events you encounter if you receive no reward for doing so? In experimental terms, does a rat learn anything about the turns of a maze when he is merely exploring the maze and no tangible rewards are presented to him? The question arises in part because some learning theories postulate that reward or motivation is necessary for learning to occur, and that rewards work only if there is an existing motivational state that can be satisfied by the reward. According to these theories, if you are hungry but get no food for your activity, or if you receive food while completely satiated, you do not learn anything. Only when you are hungry and receive food for what you do will learning occur. Food, in that case, is said to produce learning by reducing the hunger.1

If this theory is, in fact, the explanation for the experience of learning then motivation becomes a part of the performance experience. Drive level or motivation is known to affect performance because motivation has an energizing function. From this information comes a law that effects musical performance. The Yerkes-Dodson Law shows the relationship of motivation to performance.

The Yerkes-Dodson Law. Increasing motivation affects performance but the effect is not always an improvement. If motivation is increased from some low value, performance will improve. At extremely high levels of motivation, however, performance may deteriorate. This is the classic case of a person "trying too hard." We may be so motivated to make a good impression that we make a bad one. A person in danger of losing his life may be so driven to save himself that he becomes paralyzed

1Ibid. pp. 103-4.
by fear. A student might panic on an examination and find that his mind has gone blank. The principle under consideration here is known as the Yerkes-Dodson Law: increased motivation will improve performance up to a point, beyond which there is deterioration; and the easier a task is to perform, the higher the drive level for optimal performance. The second part of this principle indicates that if the task is an extremely easy one, for example, reacting as quickly as possible (by pushing a button perhaps) to the occurrence of a single stimulus, then high motivation levels are probably desirable. If a task is difficult, for example, solving mathematical problems, even a slight increase in motivation may inhibit performance. Imagine a brain surgeon who has developed an optimal level of drive for his work. Then suppose he is told that today's patient is the dictator of his country and that if anything goes wrong with the operation he, the surgeon, will be executed. This should increase the surgeon's drive or motivation to do well, but trying harder may make him perform worse.1

The performance of music is a highly complex activity. So many intricate muscle movements are required, so many split second timings are necessary, and so many computed decisions are called for from the performer that this law has quite an impact on musical performance. Accordingly, musical performance will deteriorate under conditions of increased motivation. "Trying too hard" does not help the performance.

Methods of Dealing with Anxiety

Systematic Desensitization

Definition: In systematic desensitization a person is

1Ibid. pp. 105-6.
taught to relax, and this state of relaxation is associated with the visualization of potentially threatening situations. The situations are arranged in a series, or "hierarchy," which moves from the least to the most threatening situation. As each situation in the hierarchy is successively associated with the response of relaxation, by generalization all other items in the hierarchy are affected and the person progresses to items that originally were difficult. Generalization to the extratherapy situation parallels progress on the visualized hierarchy. 1

Case: Debbie was a flute player in an extremely competitive band. Every other week tryouts were conducted with a taperecorder used to record the playing. The band director would listen to the recordings, count the mistakes and list the results on the bulletin board by name and number of mistakes, the order going from least mistakes to highest. This was also the seating order. The mistakes were accumulative throughout the year. Debbie could play sections when called on in band rehearsals when there was no implication as to seating that she could not play when recording in tryouts.

When the time came for Debbie to submit a tape for consideration to the All-State Band she became concerned about playing in front of the taperecorder. I suggested that she record all of her practice sessions in an attempt to help her habituate toward the presence of the recorder. After using the recorder for two months she experienced no anxiety during the All-State tape recording.

1Ullmann and Krasner, Abnormal Behavior, p. 235.
One problem with the technique is the future possibility of regenerativity of the anxiety response by similar stimuli. This happened to Debbie when she submitted a tape for the All Northwest Band six months later. She was overconfident and did not use the recorder during her practice sessions. When the taping was done she experienced the old panic responses.

Biofeedback

Definition: ... biofeedback research centers around the finding that if instruments are used to inform a person of exactly what some part of his body (normally inaccessible to consciousness) is doing, he may find various ways of affecting it. If the electrical activity of a single muscle fiber is electronically amplified and displayed to the subject, for example, in the form of a sound whose pitch varies with the intensity of the muscle activity, many subjects can learn to totally relax that single muscle fiber or make it even more activated. Similarly, if a sound or light is used to indicate when the alpha rhythm of the brain is present, many subjects can learn to increase or decrease the amount of alpha rhythm in their brain wave pattern. The essence of biofeedback techniques is that they make available to consciousness information which is not present, and, having the information, people can try various strategies to see what affects the involuntary process.  

Alpha waves are particular brain wave patterns that occur when the subject is in a state of "relaxed wakefulness."

When a person is under stress certain physiological changes occur. The means of controlling these physiological processes was made possible by extensive experiments


1Bourne and Ekstrand, Psychology, p. 275.
conducted by Neal Miller and Leo DiCara in which they showed "that rats could be trained by techniques of operant conditioning to slow their heart rates by as much as twenty percent."\(^1\)

The application of biofeedback to musical performance has been made by Lester G. Fehmi, a psychologist at New York State University at Stony Brook on Long Island. His work was reported by Earl Lane in Newsday in the article "Do Brain Waves Unlock the Door to Success?"

Some basketball players have off nights in which nothing seems to go right. They miss crucial shots, make careless fouls. But the very best players have few erratic performances. They score consistently, almost effortlessly.

That same effortless but highly disciplined activity may be traced in such nonathletic endeavors as music, painting and writing. Lester G. Fehmi has been attempting to predict why some men perform better than others, even though their talents may be much the same. Fehmi believes the disparity may be explained by brain waves, those minute electrical impulses given off by the brain. While other scientists have shown that brains seem to reflect creativity and performance, he has been working with a method by which a person can "train" himself to have more relaxed, more creative waves.

The key to Fehmi's experiments is a brain wave called Alpha. Different brain waves are associated with different activities. The waves can be measured by a device called an electroencephalograph (EEG).

Sleeping is associated with a slow frequency wave called Delta. Daydreaming or reverie is associated with a higher frequency wave called Theta. Alert but relaxed wakefulness is associated with Fehmi's Alpha wave, the next on the frequency scale. Finally, strong arousal or excitement is associated with the

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highest frequency waves, called Beta.

"There is a clear correlation between the presence of Alpha waves and the absence of anxiety," says Fehmi. Researchers have found that the excited Beta wave rather than the more relaxed Alpha wave is the most characteristic wave for most persons during everyday business activity . . . . But researchers have also found that gifted and creative persons spend more of their time on Alpha waves, even though they may be engaged in intensive work or study.

"It's the difference between 'psyching' yourself up for something and just letting things happen naturally," Fehmi said.  

Learning to relax by means of biofeedback could help musicians to overcome their anxiety during performances. The reason being able to relax and control physiological responses is important for good music performances is given to us by music educators. Musicians tend to perform music at a rate of speed based on the beat of their own hearts (this is mostly an unconscious reaction). When excitement produces adrenalin flow the heart beat rate increases along with a distorted sense of the passage of time. The coupling of these two physiological components of musical performance results in the music tempos (rate of speed) of the performances being changed from the tempos indicated for the pieces: 1) slow pieces are rushed, and 2) fast pieces are slowed down.  

The ability to govern the rate of the heart beat by conscious control would keep performance

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1Earl Lane, "Do Brain Waves Unlock the Door to Success?" Newsday cited by Bourne and Ekstrand, Psychology, p. 51.

2Adler, The Art of Accompanying and Coaching, p. 239.
tempos under control.

Humor

The learning process can produce anxiety if the atmosphere is too serious. Jerome S. Bruner wrote an article on the extent to which seriousness is attached to learning processes and the subsequent barriers seriousness produces. Bruner advocates a reduction in anxiety levels of learning by implementing a humorous approach to instruction: try to present some things in a humorous vein and look on the lighter side of education.¹

Many music programs in the school setting have been built on tension produced by competition. When the program becomes very serious, e.g. tryouts for chairs and challenging for chair positions (which sometimes also determines the grade for the course), anxiety is increased. Barriers to learning are often created under conditions of stress.

Case: Two of my children were confronting the task of learning the letter names of music notation. They could give those names of the notes they had learned and played in an assigned song. When a new song was introduced the children were asked to name the notes of the new song. They stuttered, bit their nails, wiped their faces, and generally acted confused. Telling them the note names did not seem to lessen the anxiety. Remembering that they especially

¹Jerome D. Bruner, "Thirty-three--On Coping and Defending," from materials in Educational Psychology class with Dr. Allen Pope.
enjoyed pronouncing letters of the Hebrew alphabet I responded that the next note was called "Tsade" and the next note was "Samekh." At first they looked encredulous, then relieved. A smile broke out on their faces with the response, "Oh, Mother, that's not right. That is a G and that one is B." That was the end of the anxiety reactions experienced when they were asked to name new notes. They are both excellent sight-readers now.

This is not an exhaustive presentation of all the psychological therapies that could be used to overcome performance traumas. They are the ones in which some connection has been made to the field of music by the psychologists themselves.

Music educators have preferred to leave the therapy to the psychologists (that is, formal therapy; they usually apply home remedies where they feel they are needed).
CHAPTER III

ATTITUDES AND PERFORMANCE

A performance centers around a performer and his audience. The interaction between the performer and his audience is influenced by the attitudes on both sides of the footlights. Negative attitudes toward music performance can create an atmosphere of indifference, harsh criticism, and even hostility. Performing in such an atmosphere can be very conducive to the development of anxiety—on the part of both the performer and the audience. There are times when an educational environment and/or societal expectancies can encourage the development of negative attitudes towards the performances of self and/or others. A survey of elementary school children gave credence to this possibility.

In the Spring of 1976 a music talent survey was conducted in two elementary schools. The survey was undertaken as a search for further information on the psychology of musical performance. The hypothesis proposed was that out of the spontaneity and objectivity of elementary school children would come some experiences and observations that were being overlooked because of biases towards the subject.
The random sampling included twelve classes totaling 246 students: 121 boys and 121 girls (4 students did not indicate their sex). Ages ranged from six years to thirteen years. Grades surveyed were first through sixth. The selection was random in respect to what classes were to have music on the particular days the survey was taken, which students were present on those days, and the school assignments.

In preparing a survey sheet (see Musical Talent Survey Sheet) to distribute to the children there was a deliberate attempt to avoid leading questions. A difficulty in formulating the questions arose out of the problem that there was no knowledge of what to predict or anticipate in the way of responses; neither was there any indication of the possible results; nor was there any guidance as to the grade or age level that would be included in the survey.

The survey was conducted in the following manner. As each class arrived they were asked to sit on the carpeted floor. The introduction to the survey was given as follows:

Hello. I am Mrs. Kuykendall. Your teacher is attending a music teacher’s conference. I am her substitute. I am a student at Carroll College, majoring in music education. I am doing a research project on what happens to people when they play an instrument or sing in front of other people. It is called "The Psychology of Musical Performance." I have some questions that I am trying to answer. Would you like to help me answer them? Good. I thought boys and girls might have some answers we are looking for. Here is a copy of the questions. You do not have to put your names on the papers, I did not make a place for names. If, however, you have some idea you would like to share that would be of help to people and make their performances better, and you would like credit for your sug-
Musical Talent Survey

Grade ______ Age _______ Boy _______ Girl _______

1. Do you sing? ______ Do you play an instrument? ______

2. Do you play or sing at home? ____ At school? ____ Band _____ Choir? ____ Orchestra? ____ Church Choir? ____ Church Orchestra? ______

3. Do you play or sing solos? ____ At home? ____ At school? ____ At church? ____ Contest? ______

4. How do you feel when you sing before other people? ______

5. How do you feel when you play before other people? ______

6. If you were a judge at a music contest and one of the contestants got nervous or scared what would you do or say? _____________________________________________

7. You are a music teacher and one of your pupils makes some mistakes at a music recital. What do you do or say? _____________________________________________

8. How old should a person be to perform before others? ____

9. Can anyone be a concert musician if he practices enough? __

10. Would you let your brother or sister practice on an instrument at home that you didn't like? __________________

11. Is playing an instrument and singing the same thing as making music? ______ Why (or why not)? ______________

12. What can a musician do to help himself perform better? 20
gestions, then put your name on your page. When I finish my research I will write a paper on what I have found. If you give me an idea that I use in my paper I will give you credit for the idea and list your name. If you do not want your name on the paper that is all right, too. At the top of the page there is an error. I typed "age, age." It should be "grade, age." What grade are you in, here at school?

The children filled out the survey sheet. In each class there were varying responses. Some classes were more talkative, some more questioning. The first grade and lower level second grade classes at School II had difficulty completing the entire survey sheet. There were four second grade classes at School I and their levels of proficiency were soon evidenced by their ability to work independently and follow directions. The second grade classes there were leveled by ability grouping with four levels of achievers. The lowest level had difficulty completing the survey.

The compilation of the survey was difficult after question four. I decided to assign either a positive or negative value to the answers of the questions. Answers that were happy, responsive, supportive, secure, etc. were assigned positive value. Answers which were harsh, punishing, severe, or self-negating were assigned negative value. A list of suggestions for improving performance was compiled and divided into 1) practice and 2) psychological devices to apply to performance.

Results

The class by class breakdown is given in the Appendix. The compilation sheet and tables for questions 4, 5, 6, and 7 are given here.
Total Compilation Sheet

Total groups = 12 classes

Total number of students = 246

Boys = 121
Girls = 121

Ages: Years Number
6 .... 5
7 .... 47
8 .... 65
9 .... 32
10 .... 24
11 .... 31
12 .... 19
13 .... 1

Grades: Grade No. of classes
1 .... 1
2 .... 5
3 .... 2
4 .... 1
5 .... 1
6 .... 2

4. Positive .. 27
   Negative .. 153

5. Positive .. 40
   Negative .. 82

6. Positive .. 99
   Negative .. 49

7. Positive .. 92
   Negative .. 65

8. Any Age .. 36
   Same Age .. 35
   Older .. 78
   Younger .. 50

9. Yes .. 167
   No .. 28

10. Yes .. 120
    No .. 79

11. Yes .. 141
    No .. 59

12. Question:
    Practice .. 51
    Psychological Remedies .. 92

Questions and no. of responses:

1. Sing .... 204
   Instrument .... 107

2. Home .... 148
   School .... 175
   Band .... 69
   Choir .... 45
   Orchestra .... 11
   Church Choir .... 36
   Church Orches .... 7

3. Solo .... 89
   Home .... 101
   School .... 69
   Church .... 28
   Contest .... 17
Question #4

Negative Responses

Positive Responses

% 100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0

School #1 School #2 School #1 School #2

Grades

2 2 2 2 1 2 3 3 4 5 6 6

2 2 2 2 1 2 3 3 4 5 6 6

23
Question #5

Negative Responses

% 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0

Positive Responses

School #1 School #2 Grades
Question #7

Negative Responses

Positive Responses

% 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0

2 2 2 2 1 2 3 3 4 5 6 6

2 2 2 2 1 2 3 3 4 5 6 6

School #1 School #2 School #1 School #2

Grades
Discussion

When the results of the survey sheets were tabulated several items were noticed. The attitudes of the children were predominately negative towards their own musical performances. The attitudes expressed toward the performances of others were predominately positive. As the individual class sheets were tallied and compared to the composite total it was observed that this reversal of feelings toward self as opposed to others did not follow the general trend of reversal in the tallying of the School I classes. The top level second grade class was predominately negative on all four performance questions and on question #9 they were unanimous in their answer that anyone could be a musician if he practiced enough. The third highest level second grade followed the general trend reversal pattern, and the next to the lowest level class remained as negative towards others as towards themselves.

Since there was a divergence of reaction between School I and School II students some difference between the two schools was regarded as a possible explanation for the difference. School I has achievement leveled classes and School II does not level by achievement. This could be a determining factor which influenced the variance in attitude. Achievement groups seem to produce more critical attitudes in their members towards others. The heterogeneous classes of School II seem to foster attitudes of acceptance encouragement of others, understanding, and altruism.
There are other factors that should be considered. Of the eight classes in grades 1, 2, and 3 the first grades and two level second grades did not finish the survey sheets. The three higher level second grades of School I showed that one out of three did not deviate from the general trend except that the percentage of positive and negative answers was 50-50 instead of the general predominance of positive responses given at School II. Of the two third grade classes at School II one class gave only seven and four responses out of twenty-one students on questions #6 and #7, respectively. The other third grade class followed the general trend. The fourth through sixth grades were surveyed at School II and all followed the reversal trend. If classes in the upper grades had been surveyed at School I the results might have been different for a total spectrum view of School I students.

The differences in developmental levels of first, second, and third graders as compared to fourth, fifth, and sixth graders could in itself have accounted for the difference in answers. Lack of experience in musical performances was also evidenced in the lower grades. Judgments would have been more abstract for the younger child since his own experience with musical performances was limited. There also was less class discussion on the part of the students at School I. With the input at a low level the conclusions drawn by the students were isolated, individual thought and not group or commenderie concensus of opinion.
The cognitive awareness of younger children is a vital factor to keep in mind when a music teacher considers music course content and performance requirements for various grade levels. I am inclined to conclude that more positive attitudes toward music performances can be developed if student classes are heterogeneous in the academic composition. There seems to be more openness, cooperation, and altruism in the mixed level classes.

There was one positive psychological application shared by a student that could be a practical application for musical performance. Tom, a fourth grade boy at School II, shared with the class that his father was a coach for prize fighters. Before a boxing match the fighters complained of having butterflies in their stomachs. The boy's father would give them sugar pills and tell them that the pills were "butterfly" pills and would stop the queasy feelings. Tom said that the sugar pills worked and the fighters didn't have butterflies when they took the pills. There is, however, an element of physical outlet for fighters that musicians do not have access to, physical release of tension in punching something. But the expectancy element could have a positive effect.

From the spontaneity of these elementary school children arose a vital factor involved in presenting a musical performance: attitudes--both of the performer and his audience. These children expressed their own opinions of and attitudes toward the public performance of the fine
arts. Here, again, in bold relief we encounter an obstacle for the sensitive individual. Criticism of one's efforts is difficult to receive, especially when it comes from one's own peers. Memory of such criticism remains as a "thorn in one's flesh," even when, in later years, we have mastered the task. A performer is always aware that at any given performance he faces the possibility of antagonistic responses.

The second response dealt with the children's attitudes toward their own performances. These responses were negative at a rate of 62 to 33 percent for questions #4 and 5, respectively. The negating of one's own abilities, even if it is a societal expectancy, also results in poor attitudes towards performance. Attitudes effect expectancies, and expectancies often become self-fulfilling prophecy.
CHAPTER IV

THEORIES AND METHODOLOGIES

Born of an attempt to build musicians rather than repair them, music educators have turned to a developmental approach to music education. Many music teachers feel the best way to deal with anxiety is to prevent it in the beginnings of music education. Emphasis is placed on the scope and sequence of music instruction. An important aspect of scope and sequence is when instruction is to take place, especially when many theorists are advocating critical periods for the acquisition of certain learning experiences. Missing a critical period in musical development is now thought to lead to performance problems. Since several theorists have proposed that music is a special case of language, music language development would parallel language development with the same critical periods.

Whether music theory gives rise to music methodology, or methodology gives birth to theory, or whether theory and methodology grow together like siamese twins is not clear from the survey of the literature. Whichever is the case, music theories and methodologies are reflecting this new emphasis on developmental approaches to music teaching. This chapter will present these ideas and their implications
in the world of music. We will look at the critical periods and music as a special case of language, the emotional basis for sharing music, and theories and methodologies.

Critical Periods and Music as a Special Case of Language

In language development research confirmation has been made of the existence of critical periods for the acquisition of the ability to make tonal discriminations (pitch, inflections, etc.) which precede the development of a language. The critical period is the first twelve months of life. During this time the baby receives audio input from the spoken language, produces his own babblings, and begins a complex process of comparisons, experimentation, speech muscle control, and proficiency in language production. This process is, of course, aided by ability to receive the sounds via auditory receptors. In remediation of hearing disabilities researchers have found that if remediation is not made before age three (birth to three years is the optimal period for acquiring tonal discrimination abilities) the child's ability to discriminate between the tones of new sounds decreases. If remediation is delayed to age five, tonal discrimination of new sounds becomes difficult. After age seven tonal discrimination of new sounds becomes impossible for those who have not received the opportunity to develop this ability previously.¹

¹Class lecture by Tom Hamilton, professor at Carroll College, Helena, Mont. in Developmental Psychology, Fall, 1976.
Many music educators view music as a special case of language and parallel the development of tonal discrimination abilities of music and language. Since tonal discrimination is vital to the development of the mother tongue of the individual it is also vital for the development of a musical language.

Shinichi Suzuki, a music educator in Japan, shows us how music educators are looking at the early critical period for language development and the musical development of the child.

Education begins from the day of birth. We must recognize the amazing power of the infant who absorbs everything in his surroundings and adds to his knowledge. If attention is not given to early infancy, how can the child's original power be developed? We learn from nature that a plant which is damaged or stunted during the sapling stage does not have a promising future. Yet at present, we know very little about proper training for the early infancy of human beings. Therefore, we must learn more about the conditions in which early human growth takes place.

Though still in an experimental stage, Talent Education has realized that all children in the world show their splendid capacities by speaking and understanding their mother language, thus displaying the original power of the human mind. Is it not probable that this mother language method holds the key to human development?  

Carl Orff expresses his concern for a good approach to the acquiring of music language. He feels that the best way to acquire music language is in the same relaxed manner that a person acquires his mother tongue.

The life of the average family today is not conducive to music-making within the home. In many cases the child is given music lessons as a matter of course, just as he receives vitamin pills—Orff has long felt that educationally speaking we are putting the cart before the horse; that music is approached as an intellectual process which begins with the introduction of the staff, the treble clef, middle C and the mathematical division of bars. Compare this with our school system where it is a prerequisite that the child be able to speak and to communicate freely with the world around him before he learns the alphabet and to read and write. Only when we make this comparison do we realize that the youngster is not ready to make music. He is like a child who has lived with deaf mutes and who has never experienced the joys of expressing himself in song, and in the rhythmic jargon of children at play.

Music educators are becoming increasingly aware of the need for musical participation BEFORE the child approaches serious study on a chosen instrument.  

Anna Maria Maccheroni, a close associate of Montessori, shares with her readers of the book Developing the Musical Senses: the Montessori Approach to Music for the Ear, Voice, Eye, and Hand the difference early music training can make in the lives of music students. As language develops in a natural way in the early life of the child, so music can develop.

The language of sounds, as it has developed through the centuries, follows constructive laws that can be compared somewhat to those of the spoken language. The child has within himself the power to make the spoken language his own; he can also learn the language of music.

Usually we think we have to teach music; instead, we should concentrate on creating a musical atmosphere. According to Dr. Montessori, "the secret of all man's progress is the love of his environment."

Montessori's method, applied to music, has revealed unsuspected capabilities in children. A complete

musical education, the discovery of the so-called theory of music, becomes not only possible, but ideally attractive and practical.¹

The early training in music provides many tools for later years. To try to develop skills in music in later life will be to do so with a minimum of "natural" help. Suzuki points out the advantages of early muscle training in music development.

The basis for exploiting the child's early spontaneous sensory experiences lies in the fact that the memory of a rhythmic experience persists in the muscle groups long after the original motor experience is past. Hence the memory must be stored with rich and persistent rhythmic experiences valuable for future musical studies. These memories condition the future musician in recalling rhythms, hearing rhythms, and creating rhythms. This rhythmic deposit can later be mined whenever or wherever rhythm is an important element, whether in life or in art.²

Early training for the child lays a good foundation for musical performance from which experiences of achievement will provide feelings of confidence and adequacy. This is a good beginning for avoiding or forestalling anxiety experienced from poor performances.

Emotional Sharing

When a performer brings forth the rendition of a composer's work he gives something of himself in the sharing. The inability to give of one's self in expression, or the lack of proper understanding of the emotional content


²Kendall, Talent Education and Suzuki, pp. 11-12.
involved in giving birth to and recreating musical numbers results in a performance that has a flat affect in presentation. This difference in emotional content can be felt by the audience but is very seldom understood by them. It is that "something" that adds to the quality of the experience. Kurt Adler summarizes a lifetime of sharing the stage with a variety of performers as a unique interpersonal relationship that recreates and expresses the highest rung of the performance ladder.

By teamwork, complete unity and understanding of the performed work's meaning has now been achieved. Both soloist and accompanist feel sure of one another, and are at ease during the performance. The invisible rays or waves emanate and are received in an ever-alive interchange of emotions, and, at the same time, are being transmitted to the listeners. The groundwork for a very good performance has been laid. What will make such a performance stand out as truly great? What will elevate it from the competent and routine into an unforgettable experience for soloist, accompanist, and audience alike? One single word is the answer: creativeness. Not very often during an artist's career does the spark of understanding develop into a surging flame that--far beyond merely recreating a musical work--brings into being new depths of emotion, new ethical and moral values; shows an entirely new side of the work; presents it not only as the author conceived it but imbued also with new life, new feelings that spring forth from the fusion of two personalities into one. This flame of creativeness will make the accompanist feel servant and master at the same time: humble servant of the composer and faithful guardian of the work, but also master of the free interplay of personality; recreator and creator of music. In such a moment, the accompanist will stand on the highest rung of the ladder that leads into the elysium of Art.¹

This is the dream of composer, teacher, performer and

¹The Art of Accompanying and Coaching, p. 240.
audience alike. To be a part of such a performance is an experience of a lifetime. But how does this type of performance happen? In the preview of the article "The Pure Pulse of Musical Genius" by Manfred Clynes it is stated, "Music is a language of emotion, and the great composers left distinctive personal signatures in their works. The discipline of learning to generate and express specific emotions precisely would help develop a child's musical talent. Too often, we squash a child's love of music with technicalities that put the composer's intimate personal version second."¹

Such a generating and expressing of specific emotions precisely does not occur in an atmosphere of hostility. Neither does it happen without the proper model(s) to demonstrate such expression. The proper atmosphere and training are necessary to develop this quality of musical production in a student. Several educators emphasize the addition of feeling as a part of the music training of each child. "Carl Orff's approach to music education for the child begins with the premise that feeling precedes intellectual understanding."² Orff and Kodaly both place a great emphasis on "feeling" music.

Thus, the infant feels the sensations of touch, taste picking up, throwing, crawling, walking, and so on long

²Wheeler and Raebeck, Orff and Kodaly, p. xxi.
before these are shaped into ideas and verbalized. Once verbalized, considerable time elapses before he learns to read and write about them.

During this period, he experiences these pleasurable activities in a multitude of ways. They become associated with people, things, and with growth and understanding. Slowly, they take on inward meaning for him. When the inward experiences become crystallized, the child begins to talk about them. And when he has verbalized them adequately, he is ready and eager to begin to read and write about them.¹

Learning to feel the music is the result of careful, competent teaching and experiencing music. Time is spent in careful rehearsal aimed at understanding both the technical aspects of the music notation and the message conveyed by the emotion of the musical qualities: pitch, inflection, dynamics, timbre, rhythm, and the volume. These aspects of music express the emotional content of the compositions. Accurate interpretation and expression are needed in the performance to insure the delivery of the composer's message. This does not happen by accident in a performance. Line is built upon line, and precept upon precept. The scope and sequence of music instruction aids or hinders the development of emotional content of music as well as the other aspects. Various music educators have outlined their own view of the scope and sequence to music education. We will look at some of these plans for music instruction. Some educators agree on basics, some disagree on timing. How much, at what time, and in what order determines the scope and sequence of music education.

¹Wheeler and Raebeck, Orff and Kodaly, p. xxi.
Scope and Sequence of Music Education

The most basic consideration in the scope and sequence of music education is two aspects of learning: perception and conception. Edwin Gordon likens the learning processes of music to the learning processes of language in this respect. A person must hear and speak a language (aural perception and kinesthetic reaction) before he learns the grammatical rules (conceptual): "sound before sign."¹ In the order of classification, conceptualization is a higher order than perception. "Generalization and transfer best characterize conceptual learning, whereas simple sound reception and memorization are indicative of perceptual learning."² These concepts are the underlying, controlling ideas of several new music methodologies. Edwin Gordon summarizes his teaching principles thus:

An understanding of current learning theory provides a basis for defining and clarifying the differences among the purpose of music education, the objectives of music education, and teaching processes which are conducive to music education, and teaching principles which complement techniques appropriate to learning music.

Because students infer musical meaning from musical sound by being able to remember, organize, and conceptualize what they perceive, the general purpose of music education should be to teach students to understand the music they hear. The overall objective of music education, then, must be to consider students' individual musical needs and abilities, concomitant to identifying and establishing specific behavioral objectives. The purpose and objectives of music education

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are best effected through an understanding of how students learn music and by adhering to teaching principles that interact with and enhance the musical learning process.\textsuperscript{1}

When Gordon presents his principles of music education he does not neglect the audience aspect of music performance. As was discussed in the chapter on attitudes, the audience is also part of the total output of the musical message. Edwin Gordon includes the listener in his instructional materials.

From our analysis of current learning theory, it appears that the process of developing music appreciation has educational significance when it provides for an understanding of music and not necessarily for a love for music. The better something is understood the greater are the chances that it will be liked. However, it is quite conceivable that something can be well understood but not necessarily liked. The general purpose of music education, then, should be to teach for musical understanding--that is, to help students conceptualize the elements of music so that they may intelligently decide for themselves how music can best satisfy their needs. Through this process students are not told that specific music is either "good" or "bad." Rather, they are guided in learning to discriminate qualities of the many types of music to which they listen.\textsuperscript{2}

Another fundamental component of performance in the musical sense is rhythm. It is so basic that many people take rhythm for granted and do not develop their skills in the area to an adequate degree. Because Orff himself has written very little of his theories or methodologies a secondary source must be consulted to obtain information about the Orff concept of rhythm. In an interview with

\textsuperscript{1}Ibid., p. 60
\textsuperscript{2}Ibid., pp. 62-63
Mrs. Cecilia Grose, professor of music at Carroll College, it was learned that Carl Orff sees music as a series of layers which compose a complex whole; Orff layers away the complexity and introduces children to the most basic life force aspect of music: rhythm.¹

So it is with music. Feeling precedes understanding. And it is with this in mind that Carl Orff has evolved an approach to music education which starts with the basic element of music that is most natural to the child—that element which he has experienced and felt since birth in all his life activities, and in speech and movement particularly. That element, of course, is RHYTHM. And it is through the rhythm of the child's speech and movement that we can best encourage him to explore music.²

This concept is further expanded by Doreen Hall in her Teacher's Manual on Orff Schulwerk.

... Carl Orff ... develops rhythmic perception through its natural evolution of speech, rhythm and movement—three prehistoric elements in music. Orff uses the natural meter of words and the child's instinctive desire to incorporate speech, rhythm and dance. At first he learns to distinguish between two and three pulse meters by using the names of flowers, trees, birds, etc., the syllables of which are pronounced first in two beats, then in three.

Using speech patterns to establish rhythm is excellent but the patterns must be applied to melody in order to derive full benefit from this type of rhythmic training.

... We must see that the child experiences music and creates music before he is told how it is put together.³

Following very close to the theory of Orff regarding

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¹Helena, Montana, November, 1976.
²Wheeler and Raebeck, Orff and Kodaly, p. xxii.
the rhythmic basis of music is a system developed by Dalcroze termed eurhythmics. Elsa Findlay notes the importance of the eurhythmic approach:

Our everyday activities, when performed with efficiency, are rhythmic. All motor skills, whether in work or play, are dependent on well-developed rhythms: swinging a sledgehammer or a tennis racket, lifting a bale, pitching a ball. In these and other skills the ability to conform rhythmically is the ultimate test of motor efficiency.

Memory, too, is rhythmic. We store in our minds the patterns of things seen and heard, like faces, buildings, numbers, the footsteps of a friend. Rhythm is an invaluable aid in learning. Many mnemonic devices lean heavily on rhythmic patterns for their effectiveness.

Because rhythmic skill is imperative in all musical performance, Dalcroze maintains that the study of musical rhythm (in terms of movement) must precede all instrumental studies. This rhythmic awareness and control is then transferred to related musical experience through motor or kinesthetic memory. Directed rhythmic experience should begin not later than the first or second grade.¹

Coupled with rhythm, movement is important to Dalcroze.

Movement, not counting (which is the perception of the time division and not time itself), is the secret of developing a real feeling for time.²

Music education was faced with a dilemma when the methodology of Kodaly came on the scene. His approach seemed to be in opposition to Orff's approach. Lawrence Wheeler and Lois Raebeck wrote a textbook for music teachers in an attempt to fuse the two systems. The main discrepancy between the two theories lies in the introduction of reading musical notation. The co-authors point out:³

²Ibid.
³The material of Orff, Kodaly, Montessori, and Suzuki has come from private sources and is not available in the
Although Orff and Kodaly agree on many of the aspects of the rhythmic and melodic development of the child, Kodaly suggests specific music reading skills to be developed in the elementary grades, whereas Orff does not concern himself with music reading.

When the child has had adequate experience in responding to rhythm, he is ready to see what he has experienced, to count it rhythmically, and to notate it. Needless to say, his first experiences with notation are with the most basic and easily understood element of his speech—the work—phrases, and the period. Similarly, he moves from notation using only one kind of note value to that using two kinds, and so on, gradually adding in length and complexity to his learning. All experiences are related to speech, and all are preceded and accompanied by clapping, bodily movement, and singing. ²

We are coming now to the actual methodologies of three music educators: Orff, Montessori, and Suzuki. This is where they share with the how to's of their theories. We will see their order and sequence of materials and methodologies, their instrumentology, and their main emphasis in music. They feel that their approach is the most basic, correct approach to music instruction. Many of their students demonstrate by their performances that the method of instruction used on them was used to great advantage.

The methodology of Orff starts with the basic approach of speech—words, and includes specific objectives and contains many devices unique to music education in this country. ²

¹Wheeler and Raebeck, Orff and Kodaly, p. xxi.
²Ibid., p. xix.
The basic objectives of Orff methodology are:

1. To use the speech and movement natural to the child as the springboard for musical experiences.
2. To give an immediacy of enjoyment and meaning to the child through active participation in all experiences.
3. To encourage the feeling that speech, movement, play, and song are one.
4. To give a completely physical, nonintellectual background in rhythm and melody, thus laying the foundation of experience so necessary to later understanding of music and musical notation.
5. To give experience in the component parts of the basic elements of music: rhythmic experiences, by beginning with the rhythmic pattern of a word, then two words, gradually building in complexity into the phrase and period, in melodic experiences, by beginning with the natural chant of childhood (the falling minor third), gradually adding other tones of the pentatonic scale, tones of other modes, and finally the major and minor scales.
6. To cultivate the musical imagination—both rhythmic and melodic—and thus to develop the ability to improvise.
7. To cultivate individual creativity as well as a feeling for, and the ability to participate in, ensemble activities.

Five devices are listed as unique to Orff methodology:

1. Use of speech patterns, proverbs, and children's rhymes and jingles as the basis for developing a feeling for basic note values, meter, phrase, and clarification of rhythmic problems, as well as to develop the ability to use the voice over a wide range of pitch and dynamics (and thus help children find their singing voices).
2. Use of the rhythmic and melodic ostinati—from the very simple to the extremely complex—as an accompaniment to moving, singing, and playing.
3. Use of the natural chant of childhood as the basis for developing melodic feeling and understanding (starting with the falling minor third—sol-mi or 5-3—and gradually adding other notes of the pentatonic scale).
4. Use of unique Orff designed instruments, along with rhythm instruments and recorders, to provide children with another immediate way of making music while cultivating a deeper response to rhythm and melody.
5. Use of the pentatonic scale (especially in beginning experiences) for song material and accompaniments with the resultant minimum of complications for children.¹

¹Wheeler and Raebeck, Orff and Kodaly, p. xx.
Preschool music education has been advanced by Montessori in her school for the young child. A close associate, Anna Maria Maccheroni, devised and printed a methodology for use in Montessori schools. The unique rationale used in her methodology is stated simply: "This first book of explanation of the method, which progresses from the single note to reading and singing at sight, is based on the four means of direct contact with music: ear, voice, eye, hand. This is the first step on the road to mastering a real and practical knowledge of music."

The uniqueness of her presentation is represented by the order given for the various branches of musical culture. This order includes:

1. Accents of the best (strong and weak); spontaneous reactions of little children.
2. First Book of the Child.
3. The length of the notes from the aesthetic point of view; movements (not motor reactions) suggested by the very character of the note, long or short.
4. Rhythmic patterns: which combine with a variety of melodic patterns, and then serve as the basis for collective, intelligent and very precise actions, giving a charming effect of unity.
5. The scales: how the scale is formed; how to transpose with the transposer invented by Dr. Montessori.
6. The seven notes of the scale combined in chords, in arpeggios (broken chords); and short melodies without modulations, using big, illustrated charts.
7. Scale patterns, with the transposer, which has notes personified by 22 little dolls; a chain that connects and disconnects; the easily-made stars; the bridge that represents the scale patterns; each scale being like a building block, solid and firm.
8. The intervals, with their own secrets of musical beauty.
9. The chords, which, with the "ribbon", may be discovered or controlled and, with the children personifying the notes, may be matched to the proper position for their resolution.
10. The beat, with its own intimate make-up, closely bound
to the meaning of the melody.
11. The graphs, showing the movement of sounds.
12. A story, four chapters long, analyzed and expressed with the graphs.
13. And (skipping many other things, such as the "repetitions"), the very interesting physical laws of sound, and the mathematical laws governing the formation of the scale.

A breath of change swept the field of music education with the coming of a child-centered methodology from Japan. The book *Nurtured By Love* introduces the reader to a different approach to music education. Only a few men have reached the pinnacle of musical acclaim who have not begun their climb early in life; but the late start may have made the critical difference for Shinichi Suzuki. His own violin career did not begin until Suzuki was seventeen years old. He was largely self-taught in the beginning. Later he studied in Europe for twenty years under the great master Professor Klinger, and he blossomed under the personal interest of Albert Einstein. These great leaders of men accepted Suzuki with his faults and incompetencies; however, they also nourished and encouraged him as he struggled. From their response to his humanness was born the Suzuki methodology of nurturing a pupil with love. Love is, however, only the foundation stone. Built upon this rock is ceaseless, productive, correct instruction, and an early beginning.

1. The human being is a product of his environment.
2. The earlier, the better—not only in music, but all learning.

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1*Developing the Musical Senses*: p. 5.
3. Repetition of experiences is important in learning.
4. Teacher and parents (adult human environment) must be at a high level and continue to grow to provide a better learning situation for the child.
5. The system or method must involve illustrations for the child based on the teacher's understanding of when, what, and how.

In keeping with these five points, Suzuki has developed key factors that promote the learning of music.

1. Talent Education should begin at an early age. Actual playing of the violin begins at age three but listening to records may be started much earlier. He then attends some lessons, or ensemble classes and is allowed to watch and listen to the other children playing.
2. Since this is a rote approach similar to the way the young child develops language ability, regular listening to the music being studied and the music to be studied is vital.
3. Lessons are private and of a length suitable for the age and attention span of the child. The mother (or father) attends each lesson and actually learns along with the student.
4. Parents help with regular daily practice. Their role is that of guiding and always encouraging, making the student sense the importance of what he is doing, but not forcing him to do it. The child continues practicing his first piece as he adds new pieces to his repertory. In fact, he is still playing the basic bowing variants of Twinkle, Twinkle ten years later, just as we continue speaking the first words we learn in any language. This repetition is the key to constant improvement of the basic factors in technique.
5. All compositions studied are memorized. No music is used by the student until his technique is established. This may take two or more years.
6. Note reading is introduced later. Essentially the process of learning to read is one of association—he watches the notes while he plays a piece he has already learned by memory, so that the logic of notation becomes apparent, not as a struggle to produce music from difficult symbols, but as a natural means of visualizing what he has already learned.
7. All students, regardless of ability, follow the same sequence of materials.
8. Ten manuals are used with recordings.

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1Kendall, Talent Education and Suzuki, p. 10.
9. Cooperation, not competition, is the motivation. Students at all levels play together. Older students help the younger. There is a wonderful attitude among parents, teachers, and students, with mutual respect in evidence.

10. . . . The children practice and perform standing, and the absence of chairs, music stands, and music makes it possible to walk, turn and bend in rhythmic response to the teacher's directions.¹

Suzuki works with a child in the early developmental stages in conjunction with the manner in which a child learns his mother tongue. Dr. Roger Strong, professor of string instruction at Central State University in Edmond, Oklahoma, told his string students Suzuki even has a program for the expectant mother to follow that begins ear training in the unborn infant. Psychologists tell us that the developing child can hear in embryo; Suzuki takes advantage of this for a really early start on music education.² After birth a child's listening training is continued to the third birthday. Then he is initiated into formal music lessons, sometimes with a violin one-tenth adult size.

Each child covers the same material in sequence. Group lessons and recitals are held. Older children serve as models and instructors for younger children. This early start is made possible by the music readiness program just mentioned. Suzuki is using the critical period for developing tonal discrimination mentioned earlier in this chapter to establish good listening habits and solid intonation.

¹Ibid., pp. 11-12.

²Information given in a Strings" Methods Class at Central State University, Edmond, Oklahoma by Dr. Roger Strong, professor of String Instruction, Spring, 1975.
Early training and loving guidance were not the only components of the Suzuki Talent Education. Suzuki wrote, "However little talent one has, one should at least try. I think many young people who doubt their talent entertain suicidal thought. ... Talent is not inborn, it has to be created." He continued, "I learned the foolishness of lamenting lack of ability--... what sadness and despair are occasioned by this nonsensical belief. ... Every child can be educated; it is only a matter of the method of education. Anyone can train himself; it is only a question of using the right kind of effect. To surrender to the thought of having no talent and give up the effort is cowardly. Poor training produces poor ability." Suzuki adds,

... People should make every effort, even though it be difficult, to accumulate and build superior ability. This I want to impress on your minds.

Well, then, what is the right and correct effort? I will discuss this later. Here I only want you to remember one thing--repetition. If one has learned a thing, it has to be thoroughly mastered by repeating it again and again.

Science does not pretend to explain what it does not understand. So people who know anything at all about science should not voice opinions such as "inborn talent" in regard to human ability. What does science really know about human potentials at birth? Superstitions about talent training should be discarded. To reason whether one has talent or not is to no avail. Abandon these thoughts, and use your own power to create talent.1

Suzuki pushes on relentlessly. He encourages everyone to try, get involved, work at the job inspite of seemingly apparent handicaps. The matter of a weak left hand in violin

players has posed performance problems for many violinists.
Suzuki attacks this problem with vigorous instruction.

Look at your right hand
Ability does not just come by nature without training. We have to educate it in ourselves. Everyone has to train his own self. Stop lamenting lack of talent and develop talent instead.

Your left hand is inferior to your right hand. That is only because the left hand has been relatively idle. The two hands would be the same if we habitually trained them equally from the beginning; otherwise they will seem different. It is the same with human ability. Not to try to educate your talent, thinking that by nature or birth you don't have any, is your own folly. Look at your right hand. If you trained yourself every day like that, your energy would develop, your senses would become educated, your ability would expand. Your right hand excels your left hand because you yourself brought this about. At birth your left hand was not inferior; the hands were evenly matched--and see how they have changed! Similarly, whatever ability we have we were not born with but have developed ourselves through training. Ability is something we produce ourselves.

Your right hand knows this. Why has your right hand its extraordinary ability? Repetition. People too can develop superior talent through the same method--repetition. To stop training as soon as one can do something does not mean that it is truly absorbed. One must practice more until it is natural and easy. The more one practices, the better one becomes. Talent is born this way. Far from being inferior to the right hand, the left hand would display the same ability if we kept using it in the same way.¹

Talent Education is more than a methodology of music education. It is a philosophy of man, life, and music. The reader of Nurtured By Love senses a compelling urgency to try to develop his talent. A sense of the thrill of striving is imparted by Suzuki; and this striving becomes as important and as satisfying as the accomplishment that will result.

¹Ibid., p. 52.
This overview of these music methodologies has given us insight into the developments in music education today. Some educators are now giving evidence of crossing the threshold of music theory into the realms of the frontiers of scientific research. In this matter Grace Nash equates the Orff methodology with new discoveries in the area of brain research.

An increasing number of articles and books about the human brain is bringing scientific support for developing both sides of the brain, which is the Orff way. Where the left side of the brain handles language, logic, and reasoning, the right side is concerned with manipulation, spatial awareness, prescriptive and feelings (emotions). Yet the young child, they report, has the potential for language on both sides of his brain. In PLAY, certainly he is using both sides simultaneously; moving, talking or chanting, interacting with his environment, trying out new sounds and ever repeating his action patterns; a multiple finding-out process that scarcely ceases.

Utilizing both sides of the brain is a multiple process that awakens and stretches the self. The earlier and more child-like the material, the more natural and joyous the process. Flexibility is a natural outcome, a basic need in coping with today's world.1

It is with this statement that a controversy arises among the music educators and the field of learning disabilities. We will look at this controversy and its implications for the music world in the following chapter.

CHAPTER V

MUSIC AND THE SINISTRAL MIND

In our discussion of music theory and methodology, there were three items mentioned in conjunction with one another: listening to music, critical period for tonal discrimination, and cerebral hemispherical development. This combination of terms comes into conflict with an educational methodology of learning readiness and remediation. The Doman-Delacato theory and program of neurological organization conflict with Orff, Suzuki, and Montessori theory and methodology. The problems Delacato has posed for the music world are basically two: 1) Good readers are those who have achieved cerebral hemispherical dominance. Since musicians are predominately ambidextrous, they are mixed cerebral hemispherical dominant; musicians are poor readers. Then, 2) All tonal activity, listening to music or singing should be deleted in remedial teaching until a child develops unilaterality. This deletion of tonal stimulation would occur during the critical period for tonal discrimination.

1The word "sinistral" is being used in connection with new discoveries concerning the specialization of the hemispheres of the brain. The definition of the word is: Sinistral adj. 1. of or having to do with the left side.
This chapter will present theories and research on cerebral hemispherical dominance and handedness, investigate the Doman-Delacato theory of neurological organization, and share some personal interviews concerning the validity of the Delacato theories.

In an interview Dr. Allen Pope explained that Delacato is an advocate of single-sided dominance, preferably right side-left hemisphere dominance. Continuing, Dr. Pope pointed out the Delacato theory of a prevalence of ambidexterity of musicians and the subsequent poor reading ability of musicians.1

The April, 1971 issue of Psychology Today carries an article entitled "The Eyes Have It" by Paul Bakan. Bakan states that "there are left-lookers and right-lookers—it depends on which hemisphere of the brain has the upper hand, so to speak."2 "The conjugatelateral eye movement (CLEM) -- a joint movement of the eyes to the left or to the right is an eye response associated with mental activity." Bakan writes, "It has been suggested that either the right or left hemisphere may be relatively more dominate in a given person's psychological functioning. Left-movers are assumed to have more-dominate right hemisphere and right-movers are assumed to have more-dominate left hemispheres. It is

1 Interview with Dr. Allen Pope, professor of Education at Carroll College, Helena, Montana, Fall, 1976.

2 April, 1971, p. 64.
further assumed that different functions are mediated by each of the hemispheres.\(^1\) The functional differences between the cerebral hemispheres are listed as:

<table>
<thead>
<tr>
<th>Left Hemisphere</th>
<th>Right Hemisphere(^2)</th>
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<tr>
<td>verbal</td>
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However, Bakan also points out that

Though I have directed attention to the duality of brain, behavior and mind, it would be naive to ignore the fact that in the intact man, the two halves of the cortex are connected. There is communication between those halves, leading to a variety of integrative possibilities. It seems very likely that the highest level of mental functioning at both the cognitive and the emotional levels involves hemispheric integration.\(^3\)


...it is important to note that the activities of the right and left hemisphere are not exclusive of each other. Rather, we should think of each "half-brain" as a specialist in its functions. In children, each side possesses the potential for both modes of thought. Brain damage to the left hemisphere in young children often means that the right side will develop language, contrary to the normal course of events.

Scientists have determined the right-left special-

\(^1\)Ibid., pp. 66-67. \(^2\)Ibid., p. 67. \(^3\)Ibid., p. 96.
ization of the hemispheres from studies of right-handed people. Left-handers, who make up about five percent of the population, are less consistent. Some of them are no different from right-handers; others show a complete reversal of brain function; and yet others have a mixed pattern, e.g. both hemispheres have verbal ability.

He continues later in the article:

Clinical and neurological investigators tend to label the left and right hemispheres the "major" and the "minor" respectively. This is more a societal than a neurological distinction. Our culture emphasizes verbal and intellectual abilities, and this bias intrudes into the most "objective" haunts of science. If an injury to the right hemisphere does not affect speech or reason, then many neurologists consider the damage minor. Since injury to the left hemisphere affects verbal ability, the left hemisphere must be "major."

I disagree with this cultural slant. I believe that each hemisphere is the major one, depending on the mode of consciousness under consideration. If one is a wordsmith, a scientist, or a mathematician, damage to the left hemisphere may prove disastrous. If one is a musician, a craftsman, or an artist, damage to the right hemisphere may obliterate a career.¹

We have looked at some of the thinking concerning the development of special skills by different areas of the brain. Because of this specialization in the brain, some theorists have concluded that some sensory-motor activities are linked to this specialization of the brain. This theory has been expanded and applied in the area of learning disabilities. It is from this area of study that the Doman-Delacato theory of neurological organization has sprung. There is confusion and lack of understanding surrounding this field of education; therefore, an extensive background will be given here in order

for the reader and the author to have a common ground of understanding for further discussion. This information will also be necessary for the understanding of the research data that will be shared in connection with the Doman-Delacato theory and its validity.

As was stated, a major portion of these theories come from the experiences of those working with learning disabled children. Recent emphasis in the field are centered in the development of sensory-motor and perceptual skills. Robert Valett explains the reasoning behind this development, and he points out some questions raised by it.

In recent years increasing emphasis has been placed on the organization of systematic sensory-motor and perceptual training programs as a fundamental part of special education. With the growing awareness that children's abilities develop in a progressive manner as a result of the interplay of maturation and experience, attempts are now being made to provide the child with a healthful early environment, proper stimulation, and appropriately planned educational experiences. It has finally been recognized by most educators that much prior preparation and development are necessary before a child can successfully learn typical school subjects requiring reading, writing, and arithmetic. Evidence has shown that most children with specific learning disabilities have, or had, some sensory-motor and/or perceptual dysfunction requiring remediation. In the author's opinion sensory-motor and perceptual skills are primary developmental requisites to higher forms of learning—before man walks, he must crawl; before understanding what he hears, he must learn to attend and listen; before reading, he must discriminate visually and aurally; before speaking he must babble; before conceptualizing, he must meaningfully relate varied experiences; and before reaching social maturity, he must struggle through stages of self and social awareness.

With the specification of the author's developmental task approach to the programming of basic learning abilities, a number of questions have been raised. The most important question concerns the validity of the rationale for sensory-motor (in this reference also including gross motor skills) and perceptual training as
part of special education programs: Do sensory-motor and perceptual skills actually contribute to the development of higher learning processes, such as reading and cognitive ability? If so, how much emphasis should be placed on these skills? Other important questions concern the actual development of an educational program: How should the program units and lessons be organized, and what should the role of parents and supplemental therapy programs be?¹

Valett points out some of the rationale and experimentation that has developed from theory and general research into sensory-motor and perceptual educational methodology.

The rationale for teaching sensory-motor and perceptual skills is based on theoretical formulations, clinical and educational experiments and practice, and research findings. It is important to consider a few of the most outstanding works that have had significant impact on this movement. Certainly, much of the work today is rooted in the theories and reeducational procedures formulated by Seguin and Itard in their attempts to use sensory-motor methods to teach the "unteachable." Over half a century ago Montessori formulated a theoretical rationale for using sensory-motor and perceptual techniques and developed a teacher's handbook of great practical value. A major breakthrough came with the publication of the work of Strauss and Lehtinen in which both theoretical and practical implications for the special education of brain-injured children were presented relative to physiological and psychological studies.

A number of general studies have made contributions to the developing theory and rationale of special training. A prominent psychologist, D. O. Hebb, has presented a neuropsychological theory that helps to explain the role of purposeful action in sensory-motor training activities and is based on the idea that any frequently repeated stimulation leads to the gradual development of "cell assemblies" in the brain. When cell assemblies are repeatedly activated as a result of a specific motor response, they tend to become associated with that activity; this, in turn, may eventuate in neurological growth and learning.²

Further implications are pointed out by Valett.

²Ibid., p. 130.
With recognition of the probability that cerebral functioning can be enhanced by psychoeducational programming, new impetus has been given to the development of educational therapy and rehabilitation approaches. A number of these new approaches have already begun to have some implications for educational and therapeutic practice. For example, following a review of studies that are relevant to the practice of physical therapy by Granit, Fay, Hagbarth, Rood, and others, Semans concluded that "...it is possible by utilizing various types of sensory stimuli to influence motor response by sensory impulses at spinal levels, at brain stem levels through the reticular facilitatory, and inhibitory systems, and by sensation reaching the cortex through physiological mechanisms of sensation, both on and below the level of consciousness, and the role of sensory input in directing motor response should be of great value ...".

Such theorizing is leading up to the neurological organization that was proposed by Delacato. A further explanation provides another link in the chain of theorizing.

Such a point of view on the part of therapists and special educators should stimulate applied experiments in sensory-motor and perceptual training curricula and individually prescribed instruction. One notable example of such an approach, which has resulted in much controversy, is the "neurological organization" habilitation program of the Institutes for the Achievement of Human Potential. The basic rationale for this widely known program involving specific educational and physical therapy is the assumption of cerebral change as a result of programmed sensory-motor and perceptual training that is effective in brain-damaged individuals because of the "...anatomic and basic functional symmetry of the brain which makes possible transfer of function from a particular area in one cerebral hemisphere to its exact counterpart in the contralateral hemisphere." This program, as well as many others, proceeds on the basis of providing frequent and specific training of ontogenetic developmental patterns, which means programming the child through the early developmental stages of gross motor, sensory-motor, and perceptual skill acquisition. That this theory has gained some scientific acceptance and respectability is attested to by the statement of Ayres that "The effectiveness of the principle of following ontogenetic developmental patterns in neuromuscular training has long

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1Ibid., p. 131
been recognized as empirically sound. Following the principle of ontogenetic development requires maturation and integration at each step. Maturation and integration are dependent upon the principle of repetition, for repeated and prolonged motor output in given positions or motions is required. Because of the necessity of requiring repeated motor output, activities play not only the important role of purposefulness for the central nervous system, but also of providing interest during therapy." This is an important statement because it takes note of the value of purposeful activity and interest in sensory-motor training, which is the motivational key to success and may in and of itself justify the activity.¹

When Valett comes to the psychoeducational research that is available, the subject of Delacato is uppermost in his consideration.

... One of the most widely known and controversial studies of the effect of specific sensory-motor training on the mobility skills of children with severe brain damage has been reported by Doman, et al. In this study covering a two-year period, 76 children were programmed through specific crawling, creeping, and body activity patterns supplemented by sensory stimulation activities and dominance training. The results were reported without comparison to the usual research control groups. They were felt to be better than previous clinical results from work with such children and "... sufficiently encouraging to warrant an expanded and continued study of these procedures." The authors also stated that "We think that many additional techniques may be developed which could speed the process of habilitation of children with severe brain injuries and perhaps increase the number of types of brain injuries which can be treated."

Because of the widespread favorable publicity (Life and Reader's Digest), the general public and parents of handicapped children are more aware of the Doman-Delacato program for neurological organization than any other sensory-motor training program. Since this program is a highly specific one that has been used in some special education situations, and because many parents and teachers continually request information and professional opinion regarding the value of the neurological organization program, it will be considered in some depth.²

¹Ibid., pp. 131-2.
²Ibid., pp. 133-4.
With this extensive background as a foundation, we will now move into some of the research findings that have resulted in studies to validate or invalidate the Doman-Delacato theory and program. A summary and an evaluation of the Doman-Delacato neurological organization program is given in a paragraph by Valett.

Considerable interest and some research has been generated by the neurological organization theory of Delacato and its stated implications for educational programming. Although most of this theory and the resulting remedial practices stem from premises and sensory-motor training procedures cited earlier, Delacato has integrated them into a systematic program that supposedly also has relevance to the development of higher language skills such as reading. The actual training program varies according to the individual’s needs, but group approaches have also been used in formal school settings. In order to consider the limited research available, it is essential to have some concept of the over-all training program and activities themselves. In a general review of the neurological organization program Freeman presents the ... overview and concludes that the validity of the objections and the claimed results cannot be established at present.1

A very detailed report on the efficacy of perceptual motor training and the available research on the subject is given by David P. Hallahan and William M. Cruickshank in their book Psycho-Educational Foundations of Learning Disabilities. Chapter Six is a compilation of the theories of perceptual-motor training and the research on the validity of this approach. The two experimentors quoted most frequently are Robbins and Glass and a second study by Stone and Pielstick

1Ibid., p. 134.
is informative.

The report on the Robbins experiment included the following statements, with background information.

Robbins and Glass (1969) presented a critique of eleven experimental studies, two performed by Delacato himself, which have been cited in Delacato's three major books (Delacato, 1959, 1963, 1966) as evidence to support his training techniques. Using the sources of experimental invalidity noted by Campbell and Stanley (1966), (sources similar, by the way, to those used here), Robbins and Glass subjected these eleven empirical studies to close examination. Robbins and Glass offer a complete discussion of the multitude of sources of invalidity they claimed to have found in these studies. Suffice it to say here that Robbins and Glass commented that these experiments purporting to show the efficacy of the Doman-Delacato training techniques "are exemplary for their faults." ¹

Some conclusions were drawn from the experiments of Robbins and Glass:

Robbins major conclusions from this study all rejected basic tenents of neurological organization theory:
1. Creeping is not significantly related to reading.
2. When measured by the California Achievement Tests (Tiegs & Clark, 1967), mean reading differences between children who are lateralized and those who are not, as determined by Harris Tests of Lateral Dominance (Harris, 1958), are not significant.
3. When the ability to creep is controlled, there are no significant differences in reading between lateralized and nonlateralized subjects.
4. Compared to both of the two control groups, the experimental subjects did not significantly increase their reading ability following exposure to the experimental training program.
5. The experimental program did not affect the amount of lateralization. ²

Since some questions were raised concerning possible 


²Ibid., p. 180.
source of error due to the inclusion of "normals" in the Robbins report, a further study conducted by Stone and Pielstick followed more closely Delacato's criteria for subject selection. Stone and Pielstick obtained the following information:

More in line with Delacato's criteria for subject selection was an investigation conducted by Stone and Pielstick (1969), who studied a group of kindergarteners for reading readiness, a skill which Delacato contends would benefit from his procedures, as Stone and Pielstick noted. For thirty minutes a day, five days a week, Stone and Pielstick's subjects were exposed to Delacato training. Comparing pre- to posttest gains on the Peabody Picture Vocabulary Test (Dunn, 1959), the Lee-Clark Reading Readiness Test (Lee and Clark, 1962), and the Developmental Test of Visual Perception (Maslow, Frostig, Lefever, and Whittlesey, 1964), for the experimental group and a control group and a control group designed to eliminate the possibility of Hawthorne Effect, the investigators identified a significant effect of treatment for the experimental group on the Frostig test, but no significant differences on the Peabody Picture Vocabulary Test or the Lee-Clark Test.

Stone and Pielstick pointed out that Dunn did not report long term reliabilities for the Peabody Picture Vocabulary Test and that their own test-retest on a sample independent of the one under investigation resulted in a nonsignificant t of 1.87. They also stated that this t threw doubt on the usefulness of their results based on the Peabody Picture Vocabulary Test. In addition, the authors admitted that the ceiling of the Lee-Clark Test could invalidate both its use and the resultant findings in this study.1

The research done by Kershner has been quoted by many sources. His results were included in this chapter, also.

As pointed out by Kershner, any conclusions indicating that the Delacato training produced crucial gains in IQ on the Peabody Picture Vocabulary Test must be accompanied by a concern about the large pre-test differences between the two groups (the mean was 39.77 for the experimental group and 61.94 for the control group).

1Ibid., pp. 188-89.
Although an analysis of covariance procedure was used, the extreme differences between the two groups may mean that two different populations actually were represented. In addition, although not noted by Kershner, the fact that the experimental group had the drastically lower mean Peabody Picture Vocabulary Test IQ indicates the possibility that on the posttesting, the phenomenon of regression toward the mean was more pronounced in this group. Thus, because we must be wary of accepting the results on the Peabody Picture Vocabulary Test, all that can be said with any assurance is that practice in creeping and crawling increases the ability to creep and crawl.1

The fact that the Doman-Delacato dominance approach has an impact on the present day school system is evidenced in the recent issue of *The Journal of the National Education Association: Today's Education*. In the November-December, 1976 issue Madeline Hunter presents a case for "Right-Brained Kids in Left-Brained Schools." She uses the assumed specialilities of the right and left hemispheres as basic to different learning approaches used by children depending upon the child's dominant hemisphere. She concluded that the schools must provide both aural and visual instruction in order to meet the learning requirements of either right or left hemispherically dominant children.2

Further research on this subject led to the acquisition of the book referred to in the footnote in the article on Orff methodology. That book was *The Brain Changers: Scientists and the New Mind Control* by Maya Pines. Delacato proposes that left-hemispherical dominance promotes superior

1Ibid., p. 189.

reading abilities. In the description of the **physiology** of the brain Maya Pines points out that in normal people the right and left hemisphere are connected by millions of nerve fibers which form a thick cable called the corpus callosum\(^1\); it is the corpus callosum that transmits memories and learning from one hemisphere to another.\(^2\) Nerve impulses carry messages from one side of the body by traveling up the spinal column and crossing over "into the opposite side of the brain, there to form a sort of mirror image of the parts they represent. The nerve connections involved are set at birth in an incredibly precise fashion that allows the brain to know instantly where certain sensations come from and where to aim specific instructions."\(^3\)

"At least three-quarters of the human cortex has nothing to do with such obvious functions as vision, hearing, touch, or muscle movements, however. Much of it is taken up with mysterious activities generally lumped together under the name 'associations.' These may be the key to the subtlety of the human brain, for we have many more such associative areas than do other primates."\(^4\) Pines continues with the question of dominance with information worthy of quote.

When the habit of always using the same side of the brain becomes too pronounced, it can narrow one’s personality, Drs. Ornstein and Galin believe. The two researchers

\(^2\)Ibid., pp. 140-41. \(^3\)Ibid., 142-43. \(^4\)Ibid., p. 9
are currently working on a test that may enable them to tell which half-brain a person chronically favors, and whether this habit interferes with the ability to shift dominance to the other side when necessary. They plan to try it out on people who are really specialized, such as Ralph Nader (a left-hemisphere type who has no hobbies of any kind) and right-hemisphere potters, dancers, and sculptors ("preferably people who have trouble with language"). They expect to find significant differences between the two groups. This should give them a tool with which to guide children or adults to new aspects of themselves, to open them to a full range of experiences.

Eventually, they hope, people will learn to activate the left or right hemisphere voluntarily. This has already been tried in their lab. With electrodes on their scalp to record changes in their brains' electrical activity, and earphones to inform them instantly of how they are doing, half a dozen volunteers have attempted to increase the asymmetry between their two half-brains. So far the results appear promising: nearly all of the volunteers have managed to activate one hemisphere more than the other, through feedback. They have produced as much asymmetry in this way as when actually concentrating on mental arithmetic or drawing. One subject produced even more asymmetry through bio-feedback than through a change of tasks.

Some training of this kind may prove particularly useful for children who suffer from what is generally called dyslexia, or specific learning disabilities—a variety of subtle perceptual difficulties that interfere with reading, writing, or spelling. About 10 percent of the nation's children cannot process the information received from their eyes or ears with sufficient accuracy. Despite normal vision and hearing, and normal or even superior intelligence, they may confuse left and right or up and down, or give other evidence of poor co-ordination. Their symptoms have baffled doctors for years. At a National Academy of Sciences Conference in 1969, Dr. Sperry suggested that their problem may be "an overly strong, or extensive, perhaps bilateral, development of the verbal, major-hemisphere type of organization that tends to interfere with an adequate development of spatial gnosia [knowledge] in the minor hemisphere." If there is verbal development on both sides of the brain, the right hemisphere's special skills cannot fully emerge. At the same time, the verbal, analytic skills may suffer from what Gazzaniga calls a problem in decision-making—"Like a husband and wife trying to decide what to have for breakfast; one of them's got to take the lead." If these children don't have a well-established decision system, and then receive two different interpretations of the world, they may be confused or slowed down. Through practice, they might learn to rely on one
hemisphere more than the other, thus straightening out their lines of command.¹

The controversy over the Doman-Delacato neurological organization theory has given rise to extensive research in this area. Delacato developed his theory during the 1960's while working with learning disabled, remedial, and brain-damaged children. From his own program of sensory-motor techniques he felt that some gains were being made with the children under instruction. The source of Delacato's theory is explained by Emerald Dechant.

Delacato has revived Orton's mixed dominance theory with some changes and has built a reading program on it. He believes that neurological development and organization of the human organism are the key to language and reading development and to language and reading difficulties. It is suggested that the basic differences between man and the animal world is that man has achieved cortical dominance, rather than cellular quantity. When the dominant hemisphere experiences certain trauma, loss of language skills results.²

The source of contention lies in Delacato's claim that his program of sensory-motor activities will lead to the improvement of reading and language abilities. There is also disagreement about the specific sensory-motor activities that Delacato uses in his program. Some medical doctors feel that his application of force to unyielding patients can do irreparable damage to muscles. They also question the validity of other parts of his program. A sample of some of the recom-

¹Ibid., pp. 152-54.
mendations resulting from the Doman-Delacato theory include items that are of concern to music educators and items that are questionable as to their validity.

1. Children should be encouraged to engage in unified one-sided activity (e.g., Do not allow children to have double-holster gun sets). Until preference for one side is evidenced, naturally both sides should be given equal opportunity to become dominant.

2. Children should not be allowed to suck the thumb of the dominant hand.

4. All tonal activity, listening to music and singing, should be deleted in remedial teaching. Oral reading should be done in whispers, thus activating the dominant hemisphere and developing unilaterality.

5. Since poor readers lack cortical organization (they exhibit faulty posturalization in sleep) mothers should be taught to posturalize their children. From the age of nine weeks on children should be posturalized on their stomach when put to bed.

9. Peripheral activity . . . such as vision, dexterity, skills, phonetics, various reading techniques, are meaningless in remediation if the total neurological organization is defective. The prerequisite to peripheral therapy is central neurological organization.¹

As noted in number four of the preceding recommendations, Delacato recommends withholding tonal stimulation of music which he says stimulates the right cerebral hemisphere, and this stimulation should be withheld until dominance is acquired. Delacato speaks of hand dominance being established by age two² and cortical organization being achieved by the

¹Ibid., pp. 232-34.

age of eight.¹ This is the source of conflict with the music programs espoused by Orff, Suzuki, and Montessori.

Hand dominance has generally been thought to be established when hand preference is shown. Handedness is presented in Exploring Child Behavior by Donald Helms and Jeffery Turner as "the preference for and subsequent predominant use of one-hand in such later activities as throwing a ball, eating with a spoon, and scribbling (and) shows no signs of developing until the infant is at least four months of age." They continue, "By two years of age most children exhibit a definite preference, which is generally firmly established by the time a child enters school."² Jerome Bruner's work with handedness is noted by Maya Pines:

Around the age of one, notes psychologist Jerome Bruner, babies suddenly master what he calls "the two-handed obstacle box," a simple puzzle developed by Harvard's Center for Cognitive Studies to study how babies learn the value of two-handedness. The baby will push and hold a transparent cover with one hand, for the first time, while the other hand reaches inside the box for a toy, even though nobody has taught him this skill. To Bruner this seems extraordinary, for it shows that the baby has learned to distinguish between two kinds of grip--the power, or "holding" grip, which stabilizes an object, usually with the left hand, and the precision, or "operating" grip, which does the work, usually with the right. Monkeys and apes also develop a precision grip, says Bruner, but only in man, with his asymmetry, does the power grip migrate to the left

¹Patricia H. Gillespie and Lowell Johnson, Teaching Reading to the Midly Retarded Child (Columbus, Ohio: Charles E. Merrill Publishing Co., and A. Bell & Howell, 1974) p. 268.

hand while the precision grip migrates to the right.¹

Further information by Maya Pines on dominance should be noted.

The young child has speech and language on both sides of his head, "Gazzaniga believes. "He is, to some extent, a split brain, whose hemispheres tend to develop independently and duplicate each other." At birth, the corpus callosum is only partly developed. It isn't until a child is about two years old that the link between his two hemispheres becomes really functional, so that everything experienced by one side is instantly available to the other. At that point, duplication of learning becomes less frequent, and true specialization begins.

By the age of ten, dominance for speech—and probably for other skills as well—is fixed. Tasks of synthesis, spatial perception, and music apparently go to the right side. The left side gets all the sequential, verbal, analytical, computerlike activities. And, strangely, "excellence in one tends to interfere with top-level performance in the other," Sperry notes. To avoid bottlenecks, eventually most of the traffic flows in one direction, while few opportunities arise for the other hemisphere to develop its own skills. The "traffic cop" in this case may well be the corpus callosum. The speech learned by the right hemisphere in early childhood is thus functionally suppressed. In time, it may be lost or perhaps erased.²

These two problems: 1) handedness being required as a prerequisite for the introduction of music listening, and 2) the hemispherical specialization interfering with excellence in both types of activity in the same hemisphere, pose difficulties for the music educator.

With a need for more information on the influence of dominance on the ability to develop reading skills, the author of this thesis held an interview on December 28, 1976.

¹The Brain Changers, p. 143.
²Ibid., p. 150.
with Dr. Vincent A. Amicucci, doctor of ophthalmology in Helena, Montana. Dr. Amicucci explained that the Doman-Delacato theory was scientifically unsound. The idea of dominance is applicable to preference of eye, ear, hand and foot but has absolutely nothing to do with intelligence per se. Both eyes feed information to both hemispheres and their field of vision overlaps. Prefering one eye does not increase intelligence. The ability of the eye to move (in reading, e.g.) from left to right, he said, is merely a matter of muscle control. As for the theory musicians are ambidextrous and therefore poor readers, it is unfounded. Dr. Amicucci cited his own daughter as both an excellent reader and a fine musician. According to Dr. Amicucci, the Delacato theory received unfortunate publicity in noted magazines before the theory was validated. He said it will now be a matter of time before the references to Delacato, which have been proven invalid, will "wear out." References were then given to Dr. Philip Pallister, geneticist and resident physician at Shodair Crippled Children's Hospital for an additional interview.¹

Dr. Philip Pallister spent time with Delacato in the school established by Delacato. Dr. Pallister described Delacato as a very personable and charming charlatan. There is no such thing as dominance for intelligence, according to

¹Interview with Dr. Vincent A. Amicucci, doctor of ophthalmology, Helena, Montana, December 28, 1976.
Dr. Pallister. As for single dominance being an aid to intelligence, Dr. Pallister cited the famed Leonardo D. Vinci as being one of the two most intelligent men the world has ever known; Da Vinci was so ambidextrous he could write with both hands two languages simultaneously—one regular, one mirror image. For the sensory-motor dialogue Dr. Pallister pulled from his files a number of photographs of the autopsied brains of young patients who died of cerebral palsey, brain damage, and diseased brains. The skulls were three-quarters empty; some brains had large, gaping holes, some brains were shrunken. Dr. Pallister explained that preceding the death of one of these patients the patient's parents reported using sensory-motor therapy and the child had responded to music, was learning to smile, and recognized his grandmother. Such responses, according to Dr. Pallister, were mere brain stem animal reflexes; there was no brain available for cognitive powers. "There is no way for the physical manipulation of these patient's body extremities to produce any change in these defective brains. It is criminal to perpetrate such absurdities on naive parents."  

A tape was secured from Dr. Amicucci's Audio-Digest on Ophthalmology containing a presentation by Earl L. Stern, assistant clinical professor of ophthalmology and Chief, Elk's Children's Eye Clinic, University of California Medical Center,  

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1 Interview with Dr. Philip Pallister, geneticist and resident physician at Shodair Crippled Children's Hospital, Helena, Montana, December 28, 1976.
San Francisco. Dr. Stern discussed the ophthalmologist's role in combating learning disorders in dyslexic, learning disabled, and remedial children. In researching the available material in the field, Dr. Stern felt it would be worthwhile to pay a personal visit to Delacato in order to clarify some of the issues. A trip was made to the Institute of Human Potential and time was spent touring the facilities and talking with Delacato. During this discussion Dr. Stern asked about eye-tracking, dominance, controlling eye versus dominant eye, etc. Delacato shared with Dr. Stern he had recently hired a statistician for the clinic. After looking carefully at material used, procedures followed, and statistical reports, the statistician reported to Delacato that what they were doing was not statistically valid.¹

Upon returning home, Dr. Stern entered into a cooperative study with Dr. Jerry Bentman, Jr. This study was reported in the Archives of Ophthalmology in December of 1967. A total of 100 students were completely and thoroughly tested; fifty students were then used in the experimental studies and fifty were placed in a control group. The finding was "that no pediatric, neurologic or ophthalmologic examination will give a significant clue to differentiate outstanding readers from children with learning disorders. Patching or atropinizing seems to make no difference in a child's ability to read or

learn. There is question as to whether a real reading defect exists. The problems are more emotional than functional.¹

The problems Delacato has posed, then, for the music world are basically the two: 1) the ambidexterity of musicians makes them poor readers, and 2) the child in remediation should receive no tonal stimulation of music until he reaches the age or time of dominance. The first question is a matter of compiled statistics, according to Miss Bull, special education instructor at Carroll College (now in education). She explained that the available statistics are gathered on children with learning disabilities; these children show ambidexterity, thus the seeming connection between reading problems and ambidexterity. However, she has worked with the gifted child extensively and has found quite a bit of ambidexterity among the gifted as well. These children are generally not tested and included in the statistics because they do not have problems in reading.²

Several personal examples contradict Delacato's first problem posed for music educators. Dr. Amicucci's own daughter was given as an example earlier in this paper. Mrs. Cecilia Grose's daughter is very ambidextrous and is an excellent reader and musician. This author's own children are high achievers in the academic standards of school, excellent readers, and outstanding musicians.

¹Ibid.,
²Interview with Miss Bull, professor of education, Carroll College, Helena, Montana, November, 1976.
The second question concerning dominance is quite controversial. Many researchers will not give a definitive answer to this question because of the lack of longitudinal studies in this area. Many questions about the functioning of the brain are still unanswered. Until more evidence is available and the longitudinal studies are completed this question will not have a definitive answer. Music educators will have to continue to do their best in their area of endeavor until further knowledge can be obtained.
CHAPTER VI

CONCLUSION

What more can be said of preparing a performer for that moment of truth: the public performance. The questions are still there: What happens to talented musicians during the actual performance of their musical numbers that results in performances that are less than their best? Why do two musicians of comparable ability give performances of such divergent qualities? What can a music teacher do to help or encourage the underproductive musician? The answer to these questions lies in the human condition. Each person brings to a performance the sum total of his being. What the audience experiences is the performer’s genetic makeup, his environment, his training, his past experiences with performances, and the performer’s own expectancies.

Genetics is a highly complicated field of study. Opinions on the effects of genetical make-up and musical ability have varied in this report from being basic to musical talent to having no influence on talent. With shadows of Aldous Huxley's Brave New World cast on the future generations, the subject of genetic programming being used to improve musical performances is shaky methodology at best. If this aspect of music theory is left to Suzuki
we can eliminate it from our consideration. If we follow Edwin Gordon's innate musical talent theory more time would have to be spent in searching for the talented and gifted students to compose our music students of the future. The prospects of working with a student in music training seem, to me, to favor personal interest on the part of the student as opposed to seeking out talented individuals who may not be interested in music development.

Providing a musical environment in which a child can grow into musical abilities seems to be an important factor in the consideration of all music teaching programs. This is probably influenced by the high percentage of musicians produced by family groups. One of the aspects of the Suzuki method involves environment; when children are brought up with music as a constant companion they feel more at home in this medium of expression. An added plus to the program is the fact that adults do not tend to expect a high degree of proficiency from children. Thus a child can "try" in a more comfortable atmosphere; after all, he is only a child—what do you expect? With our expectancies operating at a low level there is less tension surrounding the child's efforts. We are more inclined to allow children to experiment and grow at their own pace. When instruction becomes "formal" we raise our expectancies and demand more for our money. The sight of 400 little children (three, four, and five years of age) performing in a large concert hall or
football stadium is impressive partly because we do not expect these pre-schoolers to be concert musicians. What we experience is a delight over their "efforts." The fact that these children play well is often missed.

Master performers are more often the result of master instruction than they are of pure accident. I am persuaded that a good teacher is still a teacher who has mastered his subject. A teacher needs to possess important, vital, needful information before he can stimulate respect from a pupil. Coupled with accurate information, a teacher's experience in the dynamics of his theories and methodology makes the difference in students with "so-so" attitudes and ones who are committed to the teacher's program. Each of the theories presented in this paper contained the permeating quality of commitment on the part of their authors. Children tutored under such confidence experience a sense of security from their instruction. Sometimes, a sense of rivalry will develop between students of different methodologies. This can be witnessed at music festivals where competition is keen. It is in these circumstances that the teacher's methods are put to the test. It is here that teaching methods are evaluated; and, unfortunately, students have been used as scapegoats for poor instruction cover-ups. If a child becomes disillusioned with his teacher's methods or false praise for unworthy musical production, the groundwork is laid for future psychological trauma during performances.
Then a vicious cycle may begin for the student: failure, sensitivity, failure, sensitivity. More information on this problem is given by Maya Pines:

For messages to travel in the brain as they do, flowing through millions of neurons in a split second, enough chemical neurotransmitter must be released at the synapses to change the electrical potential of each neuron, thereby triggering an electrical impulse that releases more neurotransmitter at the next synapse and allows the process to start all over again. In the two decades since this system was understood, the role of the neurotransmitters has loomed ever larger. Now it appears, from research such as Kandel's, that the amount of transmitter released by a specific neuron may vary according to previous experience. If the stimulus seems harmless, the amount of transmitter may decrease, and the animal will habituate, or stop responding. If the stimulus changes and the animal is startled again, the transmitter may flow as freely as before, and the connections between the neurons will suddenly be restored to effectiveness. If the stimulus becomes exceptionally strong and menacing, however, there will be an oversupply of chemical transmitter, and the animal will become hyperresponsive.

One key to this activity is found in the mechanism that decides what is dangerous and what is not. Such decisions require incredibly swift and complex processing, for the ganglion must remember what happened before and then compare the present stimulus with the past in order to draw its conclusions— and all this for the simplest form of learning.¹

Past experiences usually give substance to present expectancies. Our memories can be an ally or a foe; and, in musical performances, one needs all the positive help he can get.

Another building block in musical performance is the interpersonal relationships of the teacher and pupil. Personality clashes have resulted in frustration, bitterness,

¹Brain Changers, pp. 177-78.
and confusion. If such a situation exists, a teacher should terminate the relationship and endeavor to refer the pupil to another instructor.

The choice of instrument can effect a pupil's performance. Some pupils and some instruments "go together." Other instruments do not fit the pupil. The physical make-up of the child is often a determining factor; bone structure, facial structure, finger agility, various handicaps influence choice of instrument. These may not always, however, be the determining factor. For instance, Mrs. Cecilia Grose has very tiny hands and cannot stretch an octave on the keyboard of the piano. Her personal interest in the piano has overcome her physical difficulties. A great deal of wisdom is necessary for a teacher to match the pupil with the instrument; but the delight experienced by both teacher and pupil when the two (pupil and instrument) match is well worth the effort.

The possible causes of performance trauma seem to be endless. It is possible to overlook the simple things when one searches for The thing. With the new understandings of early child development that are available to music educators today, the future holds more promise for our young musicians. Proper care, concern, and pedagogy will help the future generations diminish the musical traumas often associated in the past with the performance of the fine arts.

Laying foundations early, building on these foundations by repetition and gradual progress, recalling stored information in patterned sequences, and listening regularly to
musical performances are all techniques that are now being employed in the creative process of music education. Perhaps these initial steps of training will eliminate the necessity of later psychological intervention in the lives of frustrated musicians. The success rate of present methods indicate that this is a viable possibility.
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School #1

1. Lowest level Second Grade
   Total: 21  Reported:  Boys: 11,  Girls: 9
   Ages: 7 years: 9; 8 years: 8; 9 years: 1
   1. Sing: Yes, 19  Instrument: Yes, 10
   2. Home: 5; School: 14; Band: 2; Choir: 3; Church Choir: 1; Church Orchestra: 2
   3. Solo: 1; Home: 7; School: 7; Church: 3
   4. Embarrassed: 15
      Negative: 25 (71%)  Positive: 0 (0%)
   5. Funny: 1  Happy: 2  Embarrassed: 1
      Negative: 2 (9%)  Positive: 2 (9%)
   6. Go back: 1; Good: 1; No: 1
      Negative: 3 (14%)  Positive: 1 (4%)
   7. Kill: 1; Oh, oh: 1; Not Good: 1; Shut up: 1; No way: 1
      Negative: 7 (33%)  Positive: 0 (0%)
   8. thru 11 were not answered

12. No answer
2. Next to lowest level Second Grade

Total: 18  Boys: 7,  Girls: 11

Ages: 7 years, 8; 8 years, 10

1. Sing: 18  Instrument: 7

2. Home: 11; School: 14; Choir: 1; Church choir: 5

3. Solos: 6; Home: 8; Church: 1

4. Happy: 1; Embarrassed: 8; Shy: 1; Proud of myself: 2
   I don't know: 1
   Negative: 9 (50%)  Positive: 4 (22%)

5. Happy: 2; Shy: 1; Don't be nervous: 1; Embarrassed: 4;
   Proud: 1; Silly: 1
   Negative: 6 (33%)  Positive: 4 (22%)

6. I'd do it: 1; I don't like this: 1; I'd be embarrassed: 1;
   Don't be frightened: 1
   Negative: 4 (22%)  Positive: 2 (11%)

7. I'd go on: 1; That's wrong: 1; I'd help them: 1;
   Try to play it right: 1; You made a mistake: 1;
   Oh, oh: 1; Do it again: 1; You didn't go it right: 1;
   Get mad: 1; Embarrassed: 1; Oh, no: 1
   Negative: 8 (44%)  Positive: 4 (22%)

8. 4 years: 1; 5:4; 6:1; 7:1; 8:2; 9:1; 10:6; 15:1; 100:1
   Total: same age: 4; older: 8; younger: 6

9. Yes: 17;  No: 1
10. Yes: 12; No: 6
11. Yes: 15; No: 3
12. Go do it: 1; practice: 4

Psychological: 1; Practice: 4
School #1

3. Next to highest level Second Grade (high middle)
   Total: 20  Boys: 12;  Girls: 9
   Ages: 7 years: 11;  8 years: 8;  9 years: 1
   1. Sing: 19  Instruments: 5
   2. Home: 12;  School: 14;  Choir: 2;  Church Choir: 3;  
      Church Orchestra: 1
   3. Solo: 6;  Home: 7;  School: 6;  Church: 1;  Contest: 2
   4. Nervous: 1;  Happy: 2;  Scared: 7;  Embarrassed: 4;  
      Weird: 3;  Funny: 1;  Good: 2
      Negative: 16 (80%)  Positive: 4 (20%)
   5. Nervous: 1;  Happy: 1;  Scared: 2;  Good: 1;  Weird: 3;  
      Embarrassed: 1
      Negative: 7 (35%)  Positive: 2 (10%)
   6. It is not good to be scared: 2;  Don't be scared: 4;  
      Calm down: 1;  Stand straight and tall and sing: 2;
      Shut up: 2
      Negative: 4 (20%)  Positive: 7 (35%)
   7. Feel dumb: 1;  It's alright: 4;  Do it over: 8;  Good: 1;  
      Bad: 1
      Negative: 2 (10%)  Positive: 13 (65%)
   8. Ang: 1;  2:1;  7:3;  8:1;  9:1;  10:4;  11:3;  12:2;  15:1;  18:2
      Total: any: 1;  same age: 5;  older: 12;  younger: 1
   9. Yes: 17;  No: 4
   10. Yes: 15;  No: 6
   11. Yes: 9;  No: 12
   12. No answers.
4. Top level Second Grade
   Total: 22    Boys: 14;    Girls: 8
   Ages: 7 years: 7;  8 years: 14;  9 years: 1
   1. Sing: 20    Instruments: 10
   2. Home: 11;  School: 17;  Choir: 1;  Orchestra: 1;
      Church Choir: 1
   3. Solos: 9;  Home: 12;  School: 13;  Church: 2;  Contest: 2
   4. Embarrassed: 6;  Scared: 2;  Boring: 2;  Horrible: 1;
      Not very good: 1;  Nervous: 1;  Shy: 4;  Good: 2
      Negative: 17 (77%)  Positive: 5 (22%)
   5. Embarrassed: 2;  Happy: 1;  Scared: 1;  Funny, weird: 2;
      Shy: 5;  Boring: 1
      Negative: 10 (45%)  Positive: 1 (4%)
   6. Sing right: 1;  Don't know: 2;  Stop it: 2;  Go out: 7;
      Are you scared? 2;  Don't be nervous: 1;  Don't be
      scared: 1;  Cool it, you can do better: 1;  Bad boy: 1;
      Don't: 1
      Negative: 10 (45%)  Positive: 5 (22%)
   7. Do it again: 5;  Do it right: 1;  I don't know: 1;
      Opps: 2;  Oh, boy: 2;  Cut it out: 2;  You made a wrong
      turn: 1;  Cut it: 2;  I'm sorry about that: 2;  Oh, no: 2
      Negative: 12 (54%)  Positive: 7 (31%)
   8. 5 years: 1;  6:1;  7:1;  8:1;  9:7;  11:11;  12:2;  18:2;  10:5
      Total: same age: 9;  older: 11;  younger: 2
   9. Yes: 21;  No: 0
   10. Yes: 4;  No: 18
   11. Yes: 15;  No: 7
   12. Practice: 7;  Write a story before playing: 1;  Think
       about the music: 1;  Study: 1;  Practice in front of
       people: 2
       Total:  Practice: 7;  Psychological: 5
5. First Grade

Total: 13 Boys: 2; Girls: 10
Ages: 6 years: 5; 7 years: 2

1. Sing: 8 Instrument: 2
2. Home: 5; School: 6; Church Choir: 1
3. Solo: 4; Home: 4; School: 3; Church: 1
4. Happy: 1; Scared: 3; Sad: 2; Dumb: 1; Good: 1;
   Fun: 1
   Negative: 6 (46%) Positive: 3 (23%)
5. Happy: 2; Scared: 1; Sad: 2; Dumb: 1; Good: 1;
   Fun: 1
   Negative: 4 (30%) Positive: 4 (30%)

6. Yes: 2; Sad: 1; No: 1
   Negative: 2 (15%) Positive: 1 (7%)
7. No: 3; Mad: 1
   Negative: 4 (30%) Positive: 0 (0%)
8. 3 years: 1; 5:1; 26:1
9. Yes: 2; No: 1
10. Yes: 1; No: 1
11. Yes: 1; No: 1
12. No answers
School #2

6. Second Grade (large number of low achievers)

Total: 16  Boys: 10;  Girls: 6

Ages: 7 years: 10; 8 years: 6

1. Sing: 16  Instrument: 8

2. Home: 11;  School: 9;  Band: 3;  Choir: 5;  Orchestra: 3;

   Church Choir: 6;  Church Orchestra: 4

3. Solo: 5;  Home: 6;  School: 5;  Church: 3;  Contest: 3

4. Sore: 1;  Yes: 3

   Negative: 1 (6%)  Positive: 3 (18%)

5. Sore: 1;  Yes: 3

   Negative: 1 (6%)  Positive: 3 (18%)

6. Yes: 1

   Negative: 0 (0%)  Positive: 1 (6%)

7. I am sore: 1

   Negative: 1 (6%)  Positive: 0 (0%)

8. 7 years: 1

   Total: same age: 1

9. Yes: 1;  No: 0

10. Yes: 0;  No: 1

11. Yes: 1;  No: 0

12. No answers
School #2

7. Third Grade

Total: 24  Boys: 10;  Girls: 13
Ages: 8 years: 11;  9 years: 12;  10 years: 1

1. Sing: 23  Instruments: 4

2. Home: 12;  School: 20;  Choir: 1;  Church Choir: 6;
   Church Orchestra: 1

3. Solo: 8;  Home: 10;  School: 7;  Church: 7

4. Embarrassed: 1;  Nervous: 19;  Funny: 3
   Negative:  25 (100%)  Positive: 0 (0%)

5. Proud: 1;  Fine: 5;  Fun: 1;  Nervous: 7;  Scared: 1
   Negative: 8 (33%)  Positive: 7 (29%)

6. Try again: 1;  Why: 1;  Don't be scared: 4;  Stop: 3;
   Wait: 1;  Come out: 4;  Be calm: 1;  Doing Bad: 2;  Go last:
   1;  Cross out name: 1;  Good: 2
   Negative: 10 (41%)  Positive: 11 (45%)

7. Finish, practice: 1;  Do over: 10;  Show him: 1;
   Try again: 2;  Bad: 1
   Negative: 5 (20%)  Positive: 15 (62%)

8. Any age: 2; 3:3; 5:1; 8:2; 9:4; 10:3; 11:4; 12:1;
   13:2; 18:2; 19:1
   Total: any age: 2;  same age: 5;  older: 12;  younger: 4

9. Yes: 18;  No: 4

10. Yes: 13;  No: 11

11. Yes: 15;  No: 9

12. Practice: 10;  Pretend no one is there: 1;  Not feel
    nervous: 1;  teaching: 1;  help: 2
    Total: Practice: 10;  Psychological: 4
School #2

8. Third Grade

Total: 21  Boys: 8  Girls: 12
Ages: 8 years: 8; 9 years: 8

1. Sing: 13;  Instruments: 4

2. Home: 12;  School: 15;  Choir: 1;  Church Choir: 2;
   Church Orchestra: 2

3. Solo: 8;  Home: 10;  School: 2

4. Shy: 1;  Good: 1;  OK: 1;  Embarrassed: 2;  Stupid: 1
   Negative: 4 (19%)  Positive: 2 (9%)

5. Happy: 1;  Nervous: 1
   Negative: 1 (4%)  Positive: 1 (4%)

6. Happy: 1;  Pretty good, no blame: 1;  Are you feeling good: 1;  Don't be scared: 1;  Nervous: 1;  Write down, got nervous: 1
   Negative: 2 (9%)  Positive: 5 (23%)

7. I done something wrong: 1;  Do better, pat shoulder: 1;
   You can try again: 1;  Watch out: 1
   Negative: 2 (9%)  Positive: 2 (9%)

8. Any age: 2;  5:1;  8-10:3;  10:6;  12:1;  13:2;  18:2;  51:1
   Total: any age: 1;  same age: 3;  older: 15;  younger: 1

9. Yes: 18;  No: 0;  Maybe: 1

10. Yes: 12;  No: 9

11. Yes: 17;  No: 4

12. Practice: 3;  Pretend you are an expert: 1;  Watch other people: 1;  Don't think about it: 3;  Listen to teacher: 1;  Think about what you are doing: 2;  Don't watch people: 1
   Total: Practice: 3;  Psychological: 9
9. Fourth Grade

Total: 23  Boys: 13;  Girls: 10

Ages: 9 years: 9; 10 years: 12; 11 years: 2; 12 years: 1

1. Sing: 21;  Instrument: 20

2. Home: 19;  School: 23;  Choir: 1;  Church Choir: 7

3. Solo: 12;  Home: 11;  School: 10;  Church: 4;  Contest: 1

4. Scared: 9;  Nervous: 13;  Embarrassed: 1;  Shy: 1;  Happy: 1;
   Butterflies: 1
   Negative: 25 (96%)  Positive: 1 (4%)

5. Scared: 7;  Happy: 1;  Nervous: 4
   Negative: 4 (17%)  Positive: 1 (4%)

6. Don’t pick them: 2;  Shut up: 1;  Don’t be scared: 10;
   It ain’t bad: 2;  Pretend nobody watching: 4;  Play what
   you can play: 1;  Take a nap: 1;  Stop him: 1;  Get out: 1;
   Pretend they are in their underwear: 1
   Negative: 3 (13%)  Positive: 21 (87%)

7. Stop the band: 2;  Study, get good: 3;  OK, try again: 4;
   Keep going: 2;  Practice: 2;  OK to make mistakes: 2;
   Do it right: 1;  I would be embarrassed: 1;  Don’t be
   scared: 1;  Look at your paper: 1;  Get him out: 1;
   Help him: 1
   Negative: 7 (30%)  Positive: 14 (60%)

8. Any age: 2;  3:1;  4:2;  5:3;  6:4;  9:4;  10:1;  16:1;  19:1;
   10:1;  26:2
   Total: any age: 2;  same age: 5;  older: 6;  younger: 10

9. Yes: 18;  No: 5
10. Yes: 13;  No: 10
11. Yes: 14;  No: 10

12. Practice: 9;  Get butterfly pills: 2;  Pretend nobody
    is watching: 3;  Don’t be scared: 7;  Nervous, be proud of
    yourself: 8;  get excited: 1
   Total: Practice: 9;  Psychological: 14
10. Fifth Grade

Total: 26  Boys: 13;  Girls: 13

Ages: 10 years: 11; 11 years: 7; 12 years: 1

1. Sing: 19;  Instrument: 12

2. Home: 17;  School: 11;  Band: 6;  Choir: 2;  Orchestra: 3;
   Church Choir: 3;  Church Orchestra: 1

3. Solo: 11;  Home: 8;  School: 5;  Church: 1;  Contest: 3

4. Relax: 1;  Scared: 4;  OK: 2;  Embarrassed: 8;  Nervous: 2;
   Fool: 1;  Bashful: 1;  Stupid: 2;  Frightened: 2;  Not very good: 1;  Shy: 1;  Be as good as you can: 1
   Negative: 24 (85%)  Positive: 4 (15%)

5. Nervous: 8;  Dumb: 1;  Embarrassed: 2;  So, so: 1;  OK: 3;
   Frightened: 1;  Scared: 1;  Happy: 1;  Different: 1
   Negative: 13 (50%)  Positive: 6 (23%)

6. Relax, do best: 3;  Calm down: 1;  Ignore people: 2;
   Don't get scared: 3;  Don't feel bad: 1;  Do it over: 2;
   OK, relax: 1;  Don't feel embarrassed: 1;  Nothing to worry about: 1;  Get it over with: 1;  Pretend alone: 1;
   Don't be nervous: 2;  Get mad: 1
   Negative: 2 (7%)  Positive: 16 (61%)

7. Practice more & do best: 2;  Get mad at him: 2;  Correct them: 2;  Everyone makes mistakes: 1;  Do it again: 4;
   OK, keep playing: 3;  Do it right: 1;  Practice more, too late: 1;  Find mistake: 1;  Settle down: 1;  Try to help: 1
   Negative: 7 (26%)  Positive: 15 (57%)
8. Any age: 6; 1:3; 3-40:1; 5:2; 7:1; 8:2; 9:3; 10:2; 16:1; 60:1; 75:1
   Total: Any age: 6; same age: 2; older: 5; younger: 13

9. Yes: 23; No: 3

10. Yes: 19; No: 6

11. Yes: 18; No: 8

12. Practice: 4; Don't think of people: 9; Cheerful friends & positive thinking: 3; Take mind off it: 2; Think practicing: 1; Read book before: 3; Concentrate on playing: 4; Stomp your foot: 1; Teach more: 1; Get used to it: 2; Pretend they are in their underwear: 1; Self-Confident: 1; Be excited: 1; Relax: 1; Unwind: 1
   Total: Practice: 4; Psychological: 31
11. Sixth Grade

Total: 20  Boys: 10;  Girls: 10
Ages: 11 years: 10;  12 years: 7;  13 years: 1
1. Sing: 16;  Instruments: 14
2. Home: 17;  School: 14;  Band: 2;  Choir: 10;  Orchestra: 4;  Church Choir: 3
3. Solo: 11;  Home: 10;  School: 5;  Church: 3;  Contest: 3
4. Nervous: 6;  Stupid: 1;  Funny: 1;  Strange: 3;  Far out: 2;  Scared: 3;  Embarrassed: 2;  OK: 2;  Dumb: 1
   Negative: 19 (45%)  Positive: 2 (10%)
5. Nervous: 2;  Stupid: 1;  Normal: 1;  OK: 4;  Strange: 1;  Far out: 2;  Scared: 3;  Try to think of music: 1;  Embarrassed: 1;  Fine: 1;  Good: 1;  Think of underwear: 1
   Negative: 10 (50%)  Positive: 8 (40%)
6. Do it over: 2;  Relax: 2;  It's alright: 3;  Try to do best: 1;  Get out, chicken: 1;  Sit & watch: 1;  Sing in empty room: 1;  Stop it: 1;  Disqualified: 1;  Don't be scared: 2;  Settle down: 1
   Negative: 5 (25%)  Positive: 13 (65%)
7. OK, but don't do it again: 1;  OK, practice, don't feel bad: 1;  Shap up or ship out: 2;  Work on it harder: 2;  It's OK: 2;  Think about music: 1;  Cheered up: 1;  Be cool: 1;  Nothing: 1;
   Negative: 6 (30%)  Positive: 9 (45%)
8. Any age: 11;  5 plus: 1;  1-90: 1;  4-40: 1;  8: 2;  9: 1;  10: 1;  14: 1
   Total: Any age: 11;  same age: 0;  older: 3;  younger: 7
9. Yes: 15;  No: 5
10. Yes: 13;  No: 7
11. Yes: 18;  No: 1
12. Stay cool: 1
   Total: Practice: 0;  Psychological: 1
12. Sixth Grade

Total: 22  Boys: 11;  Girls: 10

Ages: 11 years: 12;  12 years: 10

1. Sing: 12  Instrument: 11

2. Home: 15;  School: 18;  Band: 4;  Choir: 4;  Orchestra: 3;
   Church Choir: 1

3. Solo: 8;  Home: 3;  School: 6;  Contest: 3

4. Nervous: 7;  Stupid: 1;  Sick: 2;  Terrible: 1;  OK: 1;
   Dumb: 4;  Good: 1;  Embarrassed: 1;  Doesn't bother: 1
   Negative: 16 (72%)  Positive: 2 (9%)

5. Scared: 1;  Nervous: 3;  Normal: 1;  Good: 1;  Embarrassed: 1;
   Not nervous: 1;  Terrible: 1;  OK: 1;  Dumb: 3;
   Negative: 9 (40%)  Positive: 4 (18%)

6. Do your best: 3;  Calm down: 4;  Don't worry: 1;
   People came to see them: 4;  Bad: 1;  Dumb, don't do it again: 1;
   Sit out: 2;  I understand: 1;  Don't be scared: 2;  OK: 1
   Negative: 4 (18%)  Positive: 16 (72%)

7. Practice more: 2;  OK, you play better: 2;  Keep trying:
   7;  Do it over: 1;  Stupid: 1;  Stupid, don't do it again:
   1;  That is allright: 1;  Did you practice? 2;  Don't worry, we all make mistakes: 2
   Negative: 4 (18%)  Positive: 13 (59%)

8. Any age: 13;  2:1;  3:1;  9 to adult: 1;  10:3;  20:1; 101:1
   Total: any age: 13;  same age: 0;  older: 3;  younger: 5
9. Yes: 16; No: 5
10. Yes: 18; No: 4
11. Yes: 18; No: 4
12. Practice: 14; Think positive: 1; You’re better than them: 1; Calm down: 5; Clean instrument: 1; Warm up: 4; Blank mind: 2; Audience empathy: 1; Eat a milkyway bay: 1; Work out: 1; Energy: 1; People came to hear you: 1; Plenty of rest: 1; Relax mind: 1; Good breakfast: 1; Take a deep breath: 2; Give confidence: 2
Total: Practice: 14; Psychological: 27
SOURCES CONSULTED


Bruner, Jerome S. "Thirty-three--On Coping and Defending," from materials in Educational Psychology class with Dr. Allen Pope. 1976.


Tape


Interviews


Pallister, Philip Dr. Geneticist and resident physician at Shodair Cripple Children's Hospital, Helena, Montana. December 28, 1976.


Handouts

Grose, Cecilia. Handout material about Carl Orff given in Mrs. Grose's class Teaching Music in the Elementary School, Fall, 1976.

Class Notes

Hamilton, Tom. Material given in lecture in Mr. Tom Hamilton's class Developmental Psychology. Source was taken from a magazine published in France.

Strong, Roger Dr. Information given in a Strings Methods Class at Central State University, Edmond, Oklahoma by Dr. Roger Strong, professor of String Instruction. Spring, 1975.