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School of Music

THE EFFECTS OF EXPRESSIVE AND NON-EXPRESSIVE CONDUCTING
ON THE PERFORMANCE OF SELECTED DYNAMIC MARKINGS
PERFORMED BY HIGH SCHOOL CHORAL STUDENTS

by

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ABSTRACT

The purpose of this study was to investigate the effects of different conducting styles on high school choral students' ability to sing selected dynamics accurately. Specifically, this research sought to answer the following questions.

1) Do high school choral students perform selected dynamic markings differently in two conducting conditions: (a) conductor using expressive gestures and (b) conductor using non-expressive (time beating) gestures?

2) Does performance order affect student performance accuracy of selected dynamic markings?

To answer these questions, the researcher audiotaped subjects (N=65) singing two eight-measure melodies. The subjects performed in eight groups according to voice parts. While singing, the subjects followed a videotape of an unfamiliar conductor conducting the two excerpts in each of the two conducting conditions. Subjects' audiotaped performances were then adjudicated for dynamic accuracy by a panel of three judges.

The data were analyzed by percentage and conclusions made by the researcher in regard to the research questions. Analysis of the data revealed only a slight increase (5%) in the group's accuracy score when the expressive conducting treatment was used compared to the non-expressive conducting treatment. In regard to performance order, the melody performed first by each group, regardless of conducting style, received a 12% higher dynamic accuracy score than the second melody performed by each group.
The dynamic accuracy scores for the first performances of each group were then compared to determine whether expressive or non-expressive conducting style had any effect. The data revealed, for the first performance, the non-expressively conducted melodies performed received a higher dynamic score (13%) than the expressively conducted melodies. Conversely, the expressively conducted melodies performed second received a 23% higher dynamic score than the non-expressively conducted melodies.

The researcher concluded that perhaps the unfamiliarity of the conductor had an effect on the subjects' performances. The subjects may have known the material better by the second performance and were therefore able to watch the conductor more carefully. Also, perhaps they better understood the conductor's gestures on the second melody and were using the first melody as a frame of reference. Further research should investigate the differences between subjects' responding to familiar and unfamiliar conductors.
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CHAPTER ONE

Introduction to the Problem

Introduction

The conductor is responsible for the overall performance quality of an ensemble. Therefore, he or she must be knowledgeable and talented in several diverse areas including aural skills, instrumental and vocal pedagogy, repertoire, history, theory, and conducting gesture. Each of these areas represents an important set of skills that contributes to a conductor’s level of expertise.

Aural skills associated with the identification of musical aspects are crucial to the success of the conductor. The importance of developing such skills is highlighted by the inclusion of ear training courses in most undergraduate music major curricula. Rudolf (1950) stated that substantial ear training assists the conductor in recognizing many performance concerns including pitch problems and proper ensemble balance. Mechanical concerns with instruments such as embouchure formation for wind players and breath support for vocalists are also aurally detectable and therefore require attention. Regarding the mechanics of the voice, Brunner (1996) stated that “In rehearsal, the director must listen for misaligned vowels and poor diction.” (p. 37)

The aural detection of mechanical problems is predicated on the idea that the conductor possesses a substantial amount of knowledge about each instrument. Phillips (1997) contended that the student of conducting must be an accomplished musician and well-trained in one or more instruments. Rudolf (1950) asserted that knowledge of instruments, both individually and in combination, is a crucial skill for the successful conductor.

Pedagogical problems encountered by a conductor can sometimes be avoided if the conductor has an extensive knowledge of music repertoire. When considering the challenges
associated with the adolescent voice and the limitations that beginning instrumentalists experience, knowledge of appropriate ranges and difficulty levels of the repertoire is crucial when choosing music successfully. This allows members of a younger ensemble to reach a high level of achievement. Repertoire study at more advanced levels allows conductors to sharpen their analysis skills. McCray (1971) believed in the importance of exposing young conducting students to quality literature at all levels, including elementary, junior high and high school. He felt this was beneficial because the study of complex scores allows a conductor to analyze junior high or high school level scores in a rehearsal setting more quickly and accurately.

Another characteristic of a successful conductor is background in music history and theory. Brunner (1996) stated that a conductor must be “versed in style, historical and cultural perspectives, and performance practice” (p. 37). An understanding of theory and form allows the conductor to make musically intelligent decisions when interpreting the composer’s intent. Strong theory training also helps the conductor to interpret which instruments have phrases that need to be stressed. The importance of theory is discussed by Plonke (1992). “Whenever you prepare a score, examine it in detail; look at harmonic patterns, motives and themes, and overall structure and form” (p. 46).

Although each of the previously mentioned skills provides an essential contribution to a conductor’s knowledge base, one of the most crucial skills contributing to overall ensemble performance quality is the conductor’s conducting technique. A conductor must use conducting gestures to communicate the meaning of the music that lies beyond the printed page (Brunner 1996).

In order to be an effective conductor, it is important to be familiar with all aspects of conducting technique. Phillips (1997) listed five different physical aspects of conducting. They
are: “posture, arm/hand position, eye contact, holding and using the baton, and ambidextrous conducting” (p.18). In an instrument designed to measure non-verbal communication behaviors of conductors, Berz (1983) derived seven categories including: gaze, facial expression, posture/body movement, proxemic, right hand, left hand, and vocalic. Yarbrough (1975) created five categories to describe the different aspects of physical conducting including eye contact, closeness, voice modulation and volume, gestures and facial expression.

Every physical movement and personal feature exhibited while conducting is believed to affect performance quality. Researchers have found that specific aspects such as a conductor’s stance (Krause, 1983) and the use of left-hand gestures as well as facial expressions (Grechesky, 1985) produced a positive effect on musical performances. In summarizing the results of this area of study, Plondke (1992) stated “Good conducting is one of the most valuable resources available to improve the quality of our school orchestras, bands, and choruses” (p. 45).

Because conducting technique affects performance, students must be able to identify the non-verbal gestures used by their conductors. Byo (1990) found that high school music students, music major and non-music major undergraduates, as well as graduate music students were able to identify high and low intensity gestures in beginning conducting students. Furthermore, Sousa (1988) found that junior high, high school, and college instrumentalists were able to identify specific conducting emblems (gestures). Students possessing more ensemble experience were able to identify more emblems.

Much of the research on conducting has dealt with the effects of conducting on overall performance. Far fewer investigators have studied the effects of expressive conducting on the specific musical aspects of articulation and dynamics. Sidoti (1990) studied the effects of expressive and non-expressive conducting on tempo, style, and dynamic markings for high
school instrumental students. He reported that “the average mean rating of the melodies
carried expressively was significantly higher than those conducted non-expressively” (p. 75)
Crescendo, marcato, and staccato, were aided the most by expressive conducting.

Although crescendo and decrescendo were addressed by Sidoti, sudden dynamic change
and discrete dynamic markings were not addressed. Furthermore, the effects of expressive
conducting on the choral students’ performance of specific musical markings does not appear to
have been investigated to the same extent as those of instrumental students’ performance.
Therefore, this research study was designed to focus on expressive conducting techniques with
choral students.

Purpose of the Study

The purpose of this study was to investigate the effects of different conducting styles on
high school choral students’ ability to sing selected dynamics accurately. Specifically, this
research sought to answer the following questions.

1) Do high school choral students perform selected dynamic markings differently in two
conducting conditions: (a) conductor using expressive gestures and (b) conductor
using non-expressive (time beating) gestures?

2) Does performance order affect student performance accuracy of selected dynamic
markings?

Limitations

The subjects in this study were limited to a public senior high school in a diverse
socioeconomic suburb of a large metropolitan area in western Pennsylvania. Both of the choirs
used in this study were auditioned groups. The data collected are representative of this population, and cannot be generalized to a broader population.

Definitions

For the purpose of this study, the following definitions were used:

"Population Sample" was defined as subjects enrolled in a choral ensemble in a suburban senior high school in Western Pennsylvania.

"Dynamic Markings" were defined as piano, mezzo forte, and fortissimo.

"Expressive Conducting" was defined as the conductor's planned physical movements used to portray the above mentioned dynamic markings visually.

"Non-expressive Conducting" was defined as the conductor's use of conducting patterns representing the time signatures of two melodies. No dynamic markings were indicated in the gestures.

Overview of the Study

The purpose of the study was outlined in Chapter One. Chapter Two contains a review of the related literature pertaining to expressive and non-expressive conducting. The research methodology and procedures are provided in Chapter Three. The results of the research are reported in Chapter Four, and Chapter Five contains the answers to the research questions as well as the conclusions drawn by the researcher.
CHAPTER TWO

Review of Related Literature

Overview

Research regarding the topics of conducting gestures and effects was reviewed and discussed. The various studies were divided into four categories: (a) gesture classification, (b) gesture recognition, (c) overall effect, and (d) specific effects. Gestures need to be classified in order to ascertain if ensemble members recognize specific gestures. Once ensemble members recognize specific gestures, overall and specific effects can then be determined.

Gesture Classification

The purpose of Berz (1983) was to develop an instrument designed to classify observed nonverbal communication behaviors of conductors. Fifteen conductors were videotaped in a wide range of rehearsal settings. The tapes were analyzed repeatedly, and detected behaviors were written on cards. The framework of the nonverbal communication instrument, developed from Burgoon and Saine (1978), classified behaviors into seven areas: kinesics, physical appearance, vocalics, haptics, chronemics, proxemics, and artifact use. These behaviors were compared with several conducting texts and existing classification instruments.

A two-part instrument was developed based on these behavior groupings. One part was a time-sampling system accounting for nonstatic behavior. The other part was a checklist which accounted for static behavior. Duplications were eliminated within the system. This process resulted in the Music Conductor Observation Instrument (MCOI). A videotape of a conductor was coded, using the MCOI, by three graduate students. The three students’ codings were
compared to those of the originator of the instrument. Field trials were then conducted to evaluate the instrument’s practicality.

The field tests indicated that anyone familiar with the nature of conducting was able to use the instrument. However, more training in the use of the instrument was recommended. In general, the instrument’s use was deemed practical and recommended for future research in conductor’s nonverbal communication. Berz’s results show the ability of researchers to categorize behaviors appropriately.

Patterson (1984) described conducting gestures used by high school choral conductors to communicate selected technical qualities, performance styles, and expressive events. An observation chart was constructed from conducting texts, research studies, and suggestions from experts. Gestures were categorized into four common means of expression: body, arm, hand/finger, and head/face. Frequency of gesture usage was calculated for several technical qualities (balance, tone quality, intonation, diction, and breath support), performance styles (legato, marcato, and staccato), and expressive events (crescendo, diminuendo, accelerando, and rallentando).

Videotapes and audio recordings were made of the performance and rehearsal of eight conductors of SATB choirs at the 1981 Illinois State A-AA Choral Contest. Conducting experts selected incidents of technical qualities, performance styles, and expressive events. They also verified observations and descriptions of gestures. Frequency charts and Commonality of Usage Charts were developed to display the observation data. Facial expression was used by over 50 percent of the conductors. The study describes generally used gestures for each of the technical qualities, performance styles, and expressive events. The findings revealed that certain physical
gestures have certain meanings for the conductors. Some of these gestures are common to a substantial percentage of conductors.

Byo and Austin (1992) sought to: (a) devise and test a method by which to identify selected nonverbal behaviors across time as demonstrated by conductors in the rehearsal setting and (b) to compare nonverbal repertoire of novice band conductors (preservice student teachers n=6) to that of accomplished university band conductors (n=6).

One 15-minute rehearsal segment of each conductor was selected for analysis. The criteria used to select each segment were: (1) the conductor must be in the act of running rehearsal; (2) the full ensemble must be involved for a large part of the time; (3) no cadenza (non-conducted) sections of a work should be part of the tape; (4) it was not the first rehearsal on the repertoire nor was it performance ready; and (5) the first or last five minutes of a rehearsal were not included. Conductors had no knowledge that a gestural analysis was occurring.

A nonverbal script (gesture documentation across time) consisting of four behaviors – right arm/hand gestures, eye contact, facial expression, and body movement – was developed from each conductor’s videotape. Each musical episode was viewed a minimum of 15 times in order to assign conducting behaviors. The researchers found that the expert conductors, when compared to each other, were as dissimilar as they were similar in their nonverbal behavior. Significant differences between the expert and novice conductors were found in the following categories: expressive body movement, static body position, expressive face, and neutral face. As might be expected, experts clearly made more expressive use of body and face in the act of conducting. These results can be used to support the idea that there are many different ways to be expressive, and that novice conductors should strive to obtain a large repertoire of physical gestures in order to find and refine an individual physical gesture language.
Summary

In general, researchers have found that some conducting gestures can be classified and associated with certain elements of music. Instrumental conducting gestures were classified by Berz (1983) and Byo and Austin (1992). Choral conducting gestures were classified by Patterson (1984). All of the researchers used a similar means of developing an observation chart. They studied previous research, conducting texts, and consulted experts in the field of conducting. Byo and Austin (1992) and Berz (1983) each used four categories of gestures, with some minor differences in how the categories were separated. Berz included the categories of body, arm, hand/finger, and head/face. Byo and Austin decided to include arm and hand gestures in one category and separate eye contact from facial expression. Both researchers include body movement as a separate category.

One difference among the studies was the “scripting,” used by Byo and Austin. Scripting allows researchers to identify non-verbal behaviors across time. Videotapes were used in each study and expert judges were asked to evaluate gestures using each researchers observation instrument. All three studies found that anyone with a cursory knowledge of conducting can identify specific gestures from conductors. Since it is possible to classify conducting gestures, it is important to see if performers can recognize these gestures.

Gesture Recognition

The purpose of Britten (1992) was to test the visual discrimination abilities of music majors (n=100) and non-music majors (n=100) in the context of watching a conductor’s beat pattern. Four tempi were used: 60, 80, 100, and 120 beats per minute. Each tempo either increased, decreased, or remained constant. The amount of change was 10 metronome markings,
one mm per second faster or slower. An audiotape was made using a Yamaha RX-11 drum machine. The original tempo was maintained for either six to eight seconds prior to the beginning of any tempo change. Four preparatory clicks were given at the beginning of each example.

The audiotape was used to create the visual master tape. A professional conductor was then videotaped performing 2/4 beat patterns to the audio stimuli. There was no audio on the videotape. The conductor used his right hand with a baton. No facial expressions were used and the pattern size was restricted to 24 inches in height. Twelve items were videotaped in random order and then redubbed in a second random order. Subjects were tested in small groups of 10-15. They were then requested to watch visual representations of a conductor’s beat without any audio stimuli, and to identify each item as increasing, decreasing, or maintaining a constant tempo.

Analysis of the data indicated that music majors scored higher than non-music majors. The music majors scored highest on the examples that decelerated, while non-music majors scored highest on examples that accelerated. The fastest and slowest tempi, 120 mm and 60 mm, were the most easily distinguished. This study demonstrates a person’s ability to detect tempo change with only a conductor as stimuli.

Byo (1990) determined whether high and low contrasts of gestural intensity could be demonstrated by undergraduate beginning conductors and, furthermore, whether independent observers could recognize these contrasts. Byo developed a videotape model containing high and low contrasts of intensity. Student conductors (n=25) viewed the 25-minute videotape during the first class period of an undergraduate conducting class. During the first semester, students practiced gestural contrasts with instructor guidance.
The subjects then made one-minute videotapes that attempted to demonstrate contrasts of high and low intensity. Byo made a master videotape including random student presentations with all possible high and low intensity combinations. The stimulus tape was viewed by 320 subjects and divided into four groups. Music majors (graduate, n=80; undergraduate, n=80), non-music majors (n=80), and high school band and choir students (n=80) were randomly selected from two intact performing ensembles. Subjects determined high and low intensity across 15-second intervals and, using a 10-point Likert scale, and gave an overall intensity rating for each completed conducting segment.

Results of the study indicated that intensity is recognizable across multiple illustrations and diverse levels of musical experience. The groups with more musical training had a higher rate of correct responses. The non-music majors scored the lowest of the four groups, with a 70% correct response rate. This is a surprisingly high number for those with little or no knowledge of the subject matter. It seems that, regardless of musical experience, subjects were able to make reliable decisions related to intensity of conducting. When considering these results, one may question whether gesture instruction for younger ensembles would assist them in better gesture recognition.

Cofer (1995) investigated the effects of short-term conducting instruction on seventh grade band students’ recognition as well as performance response to conducting gestures. Subjects were 60 seventh-grade wind players. The treatment group (n=30) received instruction designed to improve their recognition and response to generally used conducting gestures for five days. The control group (n=30) used warm-ups designed to review concepts of musical expression without conducting gestures.
Cofer used two tests to measure conducting gesture recognition. One was a multiple-choice test and the second was an individual musical performance test. The treatment group identified sixteen gestures on both test formats. The control group identified eleven gestures on the multiple-choice test, but only three on the performance test. The gesture instruction allowed for substantial improvement in recognizing conducting gestures. Some of the gestures recognized by the seventh grade students as having a specific musical idea were crescendo, decrescendo, staccato, legato, accelerando, and ritardando. When a gesture was identified as meaning a specific musical idea, it was termed an emblem.

The purpose of Sousa (1988) was to investigate the common nonverbal gestures taught and used by instrumental conductors, and the interpretation of those gestures by instrumental performers. A list of 55 nonverbal gestures that conductors use to communicate musical concepts was established. A videotape was prepared with a conductor demonstrating all 55 gestures. The videotape was shown to a sample of junior high, high school, and college instrumental performers.

All three groups identified nineteen gestures successfully. Junior high students only identified two additional gestures. The high school students identified an additional seventeen gestures, while the college performers successfully recognized an additional nineteen gestures correctly. The total population failed to recognize seventeen gestures successfully. A decrease in variability of scores occurred between junior high and high school, as well as between high school and college. This study suggests ensemble experience affects a group’s homogeneity in understanding nonverbal conducting gestures.
Summary

Researchers have found that performers and non-performers can recognize certain conducting gestures. Britten (1992) studied recognition of tempo change in beat patterns, Byo (1990) studied recognition of intensity contrasts, and Cofer (1995) and Sousa (1988) studied recognition of many specific gestures used to denote particular musical emblems.

A videotape of a conductor was used in each study to avoid differences in conducting performance. Britten (1992) and Byo (1990) both used performers and non-performers in their studies, while Cofer and Sousa studied recognition of specific gestures where all subjects in the study needed to have knowledge of specific musical ideas.

There were many differences among the studies. One of these differences was the age of the subjects. Sousa's subjects varied from junior high through college ages. Cofer's research was confined to seventh-grade students. Byo used high school and college subjects, while Britten used only college students. Another difference was the experience of the conductor. Britten, Cofer, and Sousa used experienced conductors while Byo used undergraduate beginning conductors for his investigation.

Although each researcher used a different sample population, all reached similar conclusions. Each one, depending on its specific purpose, found that students could recognize certain conducting gestures. All four also concluded one or more of the following: (a) Musicians and non-musicians are able to recognize certain musical gestures; (b) Subjects with more musical experience will have a better chance at recognizing the conducting gestures, and (c) Subjects will recognize gestures more successfully if specific training is given to them. Because it is possible for musicians to recognize conducting gestures, it is important to see if conducting has an effect on an ensemble's overall performance.
Overall Effect of Conducting

Yarbrough (1975) investigated the effect of magnitude of conductor behavior on performance, attentiveness and attitude of students in mixed choruses. Four mixed choruses were rehearsed under three conditions. Condition one was rehearsed with regular conducting. Condition two was rehearsed with high magnitude conducting. Condition three was rehearsed with low magnitude conducting. The experimenter defined high and low magnitude conducting behaviors in six categories. They were eye contact, closeness, volume and voice modulation, gestures, facial expressions, and rehearsal pace.

Each conductor was asked to direct sections of Randall Thompson’s “Alleluia.” Regular conducting was used for measures 1 through 25. The high and low magnitude conducting conditions were used in measures 26 through 55. Each conducting condition was used for a 16-minute section of a rehearsal. The rehearsal plan for the high and low magnitude conducting rehearsals was identical. At the beginning and end of each experimental rehearsal, each chorus sang an uninterrupted performance of the section of the “Alleluia” that they were to rehearse during the 16-minute session.

These uninterrupted performances were recorded for subsequent ratings by judges. A panel of expert judges heard 20 audiotaped pre- and post-performances in random order. Intonation, blend, balance, tempo, dynamics, tone quality, rhythm, phrasing, ensemble, dictation, style, and overall artistic effect were rated from 1 (poor) to 4 (excellent). A high reliability (.84) among judges was reported. Analysis of data revealed no significant difference between the performances using regular, high, and low magnitude conducting. An attitude scale was administered to the students after regular, high, and low magnitude conducting. There was a significant difference in mean attitude ratings toward the experimental conductor between the
high and low magnitude conditions. Students preferred the high magnitude conductor to the low magnitude conductor.

An explanation could be that the amount of time spent on the same music affected the lack of significant performance score differences between experimental conditions. Results indicated that, in every group, the most performance gain occurred during the first rehearsal regardless of condition. The researcher suggested trying multiple pieces of music in order to eliminate performance order as a variable. Price and Winter observed this suggestion in their subsequent study.

The purpose of Price and Winter (1991) was to examine the effects of strict and expressive conducting on 8th grade ensemble performances and ensemble member opinions. Members of an 8th grade band (N=52) were the subjects of the study. The same director conducted in both strict and expressive conditions. These conditions were characterized by differing amounts of body movement, expressive gestures, group eye contact, and facial expressions. Two pieces of music, as suggested by Yarbrough, were conducted under strict and expressive conditions for both experimental sessions.

Following performances of each selection under both conducting conditions, students responded to an opinion survey. The instrument consisted of five statements for which a seven-point Likert scale was used. Audiotape recordings of 30-second performance excerpts were evaluated by experienced musical adjudicators, graduating instrumental music education majors, and selected ensemble members. Analysis indicated a significant preference by the band members for the expressive conductor on each piece each day. No significant differences were found between conducting styles in evaluation of performance. Possibly more advanced groups would yield different results.
Owens (1993) designed a qualitative study to define whether expressive gestures were effective and appealing during rehearsals. In this study, researchers observed rehearsals in two sites (middle school and college band rehearsals) and videotaped selected rehearsals. Each rehearsal was scrutinized by the researcher to: (1) categorize the instructional strategies to edit subsequent rehearsal episode tapes; and (2) formulate individual interview questions.

Two sets of interviews were designed for this study. Six participants were selected from each ensemble. The first interview consisted of questions regarding perception of learning preferences. After reviewing the audio transcripts, additional questions were formulated to deal with retention and transfer of knowledge. The conductors were also interviewed to gather information regarding agreement of student perception and teaching strategy. During all interviews, videotaped excerpts of rehearsals were used to assist in recollections.

Unanimity was expressed relative to the importance of expressive gestural communication and effective rehearsal. Students preferred non-verbal communication over verbal. It was apparent that the students believed gestures enhanced their ability to store and transfer data. This study indicated the preference of musicians for conductors with expressive gestures. The next study concerns whether expressive conducting has a positive effect on performance.

The purpose of Grechesky (1983) was to observe, categorize, and analyze verbal and non-verbal behaviors and determine how they affect band performance. Eleven band members were audiotaped and videotaped in a rehearsal and performance of the same piece of music. The audiotapes were evaluated by a panel of expert judges. Conducting behaviors were observed and coded from the videotapes.
The highest five scores from the audiotapes were considered the “most musical.” The videotapes of these “most musical” performances were observed and coded. Through correlation and regression analysis, eleven variables were identified as having an effect on rank. The researcher concluded that: (1) Verbal explanation is necessary, but verbal imagery had a much stronger impact; (2) The conductors of the more musical groups displayed more body movement; (3) Approving facial expression had a positive effect on performance; (4) Conductors who use more left hand gestures had higher scores; (5) Use of emblems and illustrators had the most powerful effect on higher audiotaped scores. These findings indicate that conductors who develop nonverbal skills can have a positive effect on musical performance.

Laib (1993) examined the effects of expressive and non-expressive conducting on overall performance. High school (n=8) and college bands (n=8) all performed the same compositions. Each of the sixteen bands performed two pieces of music twice, once conducted expressively, and once conducted non-expressively. The researcher served as conductor for both experimental treatments. Following each performance, the students answered a questionnaire.

The performances were videotaped and audiotaped to aid in data collection. Six experienced band adjudicators were asked to determine if they perceived a difference between the two performances and, if so, which one they preferred. The adjudicators preferred the expressively conducted performance in each pair most of the time. The questionnaire data revealed students responded more positively to all statements after the expressive conducting treatment then after the non-expressive conducting treatment.

Summary

Researchers have found, with varying degrees of success, that ensemble performances are
affected by expressive conducting. Although Yarbrough (1975) and Price and Winter (1991) found no significance between expressive and non-expressive conducting in relation to quality of performance, Yarbrough (1975) found students to be more on-task with a high magnitude conductor. Price and Winter (1991) found that 8th grade band students preferred the expressive conducting as opposed to the non-expressive conducting.

Owens (1993), Grechsky (1985) and Laib (1993) all found that expressive conducting had a positive effect on performance. All three researchers used different methods to attain their results. Owens (1993) used qualitative methods, Laib (1993) used quantitative methods, while Gechesky (1983) used a combination of both, using quantitative data to rank the ensembles in performance quality and qualitative data to establish which gestures and expressions were used to achieve certain musical elements.

As with gesture recognition, expressive conducting has greater impact on more experienced musicians. However, the challenge of conducting research is the variable of the conductor. It is very difficult to give an identical conducting performance time and time again. Also, many of these investigators used multiple conductors. An expressive gesture may take on many forms to many conductors. In order to make studies on the expressive conducting research more reliable, we must look at what effect expressive conducting has on specific conducting gestures.

**Specific Effect of Conducting**

The purpose of Mayne (1992) was to investigate the use of facial expression by the conductor on the performer’s ability to interpret common musical gestures. Junior high, high school, and college instrumentalists were used as subjects. Two videotapes were prepared. Both
tapes used the same conductor demonstrating the same 53 gestures in matching order. The only
difference between the tapes was the conductor’s added use of facial expression on Tape 2. The
subjects were randomly chosen to view Tape 1 or 2. Using a multiple-choice test, subjects were
then asked to select the answer which best described each conducting gesture example.

The use of facial expression did not significantly increase the subject’s ability to interpret
the 53 common conducting gestures used regardless of grade level. The researcher concluded
that facial expression has more impact on the less tangible aspects of performance. With or
without facial expression, correct responses increased as grade level increased. This suggests the
need to sensitize performers to specific conducting gestures.

Taylor (1989) examined the effects of a sensitizing procedure used by high school band
conductors on the ability of high school students to perform selected articulation styles. Twenty
high school band directors were randomly selected and assigned to a sensitizing group and a
contact-control group. During a rehearsal stop, a visual demonstration of a specific conducting
gesture was used to signify a particular articulation marking.

A three-part test of music exercises was administered at the conclusion of the 15-minute
rehearsal period. Section I consisted of articulation marks appearing on both the conductor’s
score and the band parts. Conductors used appropriate gestures. Section II consisted of
articulation marks appearing only on the band parts. Conductors used only time beating
gestures. Section III consisted of articulation marks appearing on only the conductor’s score.
Band members followed the appropriate conducting gestures.

No significant difference was found between the two groups in the accurate performance
of articulation styles. The researcher concluded that a fifteen minute rehearsal is too short an
amount of time to sensitize high school performers to legato, staccato, and marcato styles. Even
professional ensembles sometimes take years before becoming familiar with a particular conductor. Perhaps a study with a longer sensitizing period would allow conducting to have more of an impact on student performance.

Kelly (1997) investigated the effects of conducting instruction on beginning band students’ individual rhythmic performance, group rhythmic performance, group performance of legato and staccato styles, and group performance of phrasing and dynamics. Fifth-grade students (n=150) in eight beginning bands were randomly selected from a list of schools indicating their willingness to participate in the study.

The bands in the treatment group received conducting instruction by the investigator for a maximum of 10 minutes per class. Their regular band directors ran the rest of the rehearsal. The control bands received no conducting instruction. Conducting instruction was administered to the entire class at a single time via oral instruction and modeling techniques. Each conducting topic area covered a one-week period. Following the treatment period, all subjects were tested. Seven judges independently evaluated the individual’s and ensembles’ pretest and posttest performances.

Posttest results indicated that individuals in the experimental bands improved significantly more than individuals in the control bands in rhythmic performance. Bands in the experimental group improved their rhythm-reading and phrasing abilities more than bands in the control group. No differences were found with regard to legato and staccato, dynamic performance or overall performance. In general, the treatment appeared to have a greater effect on the large-ensemble performances than it did on individuals in these ensembles.

The purpose of Sidoti (1990) was to determine the extent to which high school instrumentalists were able to perform selected musical expression markings, as inserted into
several brief melodies, while following conducting gestures. The musical expression markings were: staccato, marcato, legato, crescendo, decrescendo, accelerando, ritardando, and fermata.

Subjects (N=139) were members of four high school bands. They were given a copy of four unmarked melodies to practice for three days. Before the practice period, subjects were given a nine-question quiz designed to determine the student’s cognitive understanding of the eight musical markings. After the three-day practice period, subjects were asked to perform four melodies with expression markings while following a conductor on a videotape.

Half of the marked expressions were conducted non-expressively. The other half were conducted with a corresponding gesture. Subjects were also instructed to play eight four-measure single pitch exercises. Each exercise contained one of the following markings. All performances were audio recorded and evaluated. A significant difference was found between expressive and non-expressive conducting with performances being more accurate with expressive conducting.

Summary

Researchers have found, with varying degrees of success, that expressive conducting has specific effects on musicians. Mayne (1992) attempted to find a correlation between facial expression and ability to interpret conducting gestures. Taylor (1989) studied the effect of a sensitizing process and expressive conducting on the ability to perform several articulation styles. Mayne (1992) and Taylor (1989) found no significant difference between expressive and non-expressive conducting.

Kelly (1997) researched the effect of conducting instruction on ensemble and individual performance. With conducting instruction, students’ individual rhythm reading and group
phrasing abilities improved significantly. No significant improvement was found in group rhythmic, legato, staccato, and dynamic performance. Sidoti (1990) studied the effects of expressive conducting on articulation performance, and found a significant improvement of individual performance when subjects watched an expressive conductor.

There were many variations of methodology among the studies. Two studies used multiple conductors (Kelly, 1997; and Taylor, 1989), while the other two studies (Mayne, 1992; and Sidoti, 1989) used one conductor. The age of the subjects also varied. Sidoti (1989) and Taylor (1989) used only high school students. Kelly (1997) used only 8th grade students, while Mayne (1992) used junior high, high school, and college students. The most striking variation in methodology was the number of musical elements studied. Taylor (1989) researched only three elements, while Mayne (1992) researched 53 elements.

Chapter Summary

The subject of the effect of conducting on performers has long been a question asked by music educators. To discover whether conducting has an effect on performers, gestures must be classified. Berz (1983), Patterson (1984), and Byo and Austin (1994) all found certain conducting gestures can be classified. Once gestures have been classified, it is important to see if performers can recognize these gestures.

Britten (1992) found that college students could discern tempo changes when given only a visual stimulus. Differences in high and low intensity conducting were recognized by high school and college performers (Byo, 1990). Cofer (1995) implemented a study that found even students as young as seventh grade could recognize conducting gestures with specific training. Experience in ensemble performing was an indicator of ability to discern conducting gestures.
Sousa (1988) found that college performers recognized more gestures than junior high performers. If performers can recognize certain gestures, then it is important to discover the effects of conducting styles on students.

There was wide variation in results of the studies regarding the effects of expressive and non-expressive conducting on performers. Yarbrough (1975), Price and Winter (1991), and Taylor (1989) found expressive and non-expressive conducting made no significant difference on performances. Mayne (1992) found that facial expression had no significant difference on performance or performers ability to interpret conducting gestures. All of the researchers mentioned above gave numerous reasons for their results. The most common reason was that conducting is such a holistic skill that it is difficult to gauge its effect in segregated instances.

Owens (1993), Grechesky (1985), Laib (1993), Kelly (1997), and Sidoti (1989) all found significant difference between the effects of expressive and non-expressive conducting. Owens (1993) was the only qualitative study in this group. The other four dealt with numerous different musical elements. Dynamics were investigated only in Sidoti (1989) and Kelly (1997). Kelly examined full ensemble dynamics, and Sidoti (1989) examined gradual dynamics.

Numerous studies were discovered on the effects of conducting on instrumentalist. There are substantially fewer investigations dealing with choral performers. The study of the effects of conducting on a choral performer’s ability to change dynamics is the focus of the present investigation.
CHAPTER THREE
Methodology and Procedure

Introduction

The purpose of this study was to investigate the effects of different conducting styles on high school choral students’ ability to sing selected dynamics accurately. Specifically, this research sought to answer the following questions.

1) Do high school choral students perform selected dynamic markings differently in two conducting conditions: (a) conductor using expressive gestures and (b) conductor using non-expressive (time beating) gestures?

2) Does performance order affect student performance accuracy of selected dynamic markings?

“Dynamic Markings” were defined as piano, mezzo forte, and forte.

“Expressive Conducting” was defined as the conductor’s planned physical movements used to portray the above mentioned dynamic markings visually. “Non-expressive Conducting” was defined as the conductor’s use of conducting patterns representing the time signatures of two melodies. No dynamic markings were indicated in the gestures.

Methodology

Overview

Subjects were audiotaped singing two eight-measure melodies. While singing, the subjects followed a videotape of an unfamiliar conductor conducting the two excerpts; one expressively and one non-expressively. Subjects’ audiotaped performances were then
adjudicated for dynamic accuracy by a panel of three judges. The dynamic accuracy performance scores were analyzed by comparing the percentage of points scored for expressive and non-expressive conducting and performance order.

Research Subjects

The subjects (N=65) were public senior high school choral students in a suburb of a large metropolitan area in western Pennsylvania. The district serves a wide range of socioeconomic backgrounds. The music department curriculum includes six choirs, three bands, and one string orchestra. Music electives are also offered in music theory and music technology.

Participants were drawn from two intact choral ensembles, the Chorale and Symphonic Choir. Student participation was voluntary and did not influence any further grading or evaluation. The sample included 16 sophomores, 25 juniors, and 24 seniors. Three of these students participated in band or string orchestra.

The Penn State University Office of Regulatory Compliance granted permission to run the study (IRB # 01B1062-00) in December of 2001 (see Appendix A). At that time, students were given the Informed Consent to Voluntary Participation forms (see Appendix B). Signatures were required by both students and their guardians prior to participation.

After approval was received by the parents and students, the sample was separated into eight groups categorized by voice part. This strategy was chosen with the expectation that the students would be more comfortable performing in their every day groupings. The four male groups consisted of six tenors or basses per group. Female research subjects were separated into the following four groups: 1) nine sopranos, 2) eleven sopranos, 3) eight altos, and 4) twelve altos. A proportionate number of sophomores, juniors, and seniors were assigned to each group.
Song Material and Videotape Preparation

The researcher composed two eight-measure melodies to use as song material. This was done to ensure that the melodies were easy enough to learn quickly and contained distinct dynamic contrasts. The dynamic markings piano, mezzo forte, and fortissimo were included in both melodies (see Appendix C).

A collegiate choral conductor was chosen to provide the conducting excerpts on the videotape. The conductor teaches choral conducting and directs numerous choral groups at a college in western Pennsylvania. A Sony Hi Fi VHS camera and Kodak Gold videotapes were used. The conductor directed each melody twice, once expressively and once non-expressively. To eliminate performance order as a threat to validity, four experimental tapes were dubbed.

Tape One contained the expressively conducted version of Melody A followed by the non-expressively conducted version of Melody B. Tape Two contained the non-expressively conducted version of Melody A followed by the expressively conducted version of Melody B. Tape Three contained the expressively conducted version of Melody B followed by the non-expressively conducted version of Melody A. Tape Four contained the non-expressively conducted version of Melody B followed by the expressively conducted version of Melody A. Two groups were assigned to each of the four treatment tapes.

Procedures

Treatment

The treatment occurred during the spring 2002 semester. Two rooms in the high school were used for this purpose. The researcher taught the two eight-measure melodies to all of the subject groups in the choral rehearsal room using a grand piano. This rehearsal lasted 15
minutes. The melodies were taught and performed using the syllable “ah.” Dynamics were not discussed. Following the 15-minute rehearsal, the subject groups were sent to the band rehearsal room where each group was given an audition number (1-8).

The researcher labeled each audiotape with the correct audition number and selected and coded the appropriate videotape for viewing. Individual groups were then called back into the choral rehearsal room to perform the excerpts with the conductor videotape. At this time, the notated melodies were handed to each student. The same dynamic markings (piano, mezzo forte, and fortissimo) were included in both melodies.

The subjects first viewed the videotaped instructions. The researcher’s instruction script was as follows:

In a few moments, a conductor will appear on the video screen. A starting pitch will be given by the proctor. The conductor will give you four preparatory beats together with the words one, two, ready, sing, at which time you are to sing, without stopping, the eight measure melody at the top of the page. You are to follow all musical symbols and dynamic markings indicated in the music, while also following the conductor. After you complete this task there will be a ten second pause. The conductor will again give you four preparatory beats together with the words one, two, ready, sing, at which time you are to sing, without stopping the eight measure melody at the bottom of the page. Again you are to follow all musical symbols and dynamic markings indicated in the music, while also following the conductor.

(Conductor appears)

Melody One . . . Here is your starting pitch (C played)
One – Two – Ready - Sing

The research groups viewed the videotape on a 35-inch Hitachi television set attached to an Optimus model 99 four-head videocassette recorder. The groups’ performances were recorded on a Kenwood cassette deck using a unidirectional microphone. The researcher was in the room to monitor the equipment and answer questions if necessary.
Following the completion of the treatment, the researcher rewound all videotapes and audiotapes, and categorized the audiotapes by treatment type. The materials were checked at that time to ensure that all groups were recorded. The researcher then made one master audiotape of all the performances.

Analysis

Approximately one month after the treatment, three judges were empanelled and asked to analyze and evaluate the group performances. Each judge was a public high school music teacher with an average of 17 years teaching experience. All judges had either completed or were in the process of completing the Master degree in Music Education.

The judges met in the choir director’s office to listen to the audiotapes and were directed to avoid speaking to each other. Each judge was provided a scoring sheet, a writing utensil, and the printed version of the two melodies including dynamic markings for reference. The researcher was in the room to monitor the cassette player and answer questions. The judges did not view the conductor videotape and were not told which of the melodies were conducted expressively.

Each judge then used the scoring sheet to evaluate the 16 audiotaped group performances on the basis of dynamic accuracy (see Appendix D). An Aiwa CX-ZR525 Digital Audio System was used to listen to the audiotapes. A five-point Likert-type scale was used (1=not accurate to 5=extremely accurate). Each audiotaped performance lasted approximately 25 seconds.

Following the evaluation, interjudge reliability was calculated among the three judges at .7022, illustrating a strong level of agreement among them regarding their perceptions of expressive and non-expressive performance.
CHAPTER FOUR

Results

Introduction

The purpose of this study was to investigate the effects of expressive and non-expressive conducting styles on high school choral students’ ability to sing selected dynamics accurately. Eight subject groups watched and performed two eight-measure melodies conducted in the two conducting styles named above. A videotaped conducting model was used and the group performances were audiotaped. The audiotapes were then adjudicated for dynamic accuracy by a panel of three judges. The results of their analysis appear below.

Data Analysis

The dynamic accuracy performance scores for each performance were analyzed by comparing the percentage of points received for the expressively conducted and the non-expressively conducted performances.

The expressively conducted melodies received a raw score of 74 out of a possible 120 points. This calculates to a dynamic accuracy score of 61.67%. The non-expressively conducted melodies received a raw score of 68 out of a possible 120 points. This calculates to a dynamic accuracy score of 56.67%.

Table 1 – Conducting Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Raw Score</th>
<th>Possible Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive Conducting</td>
<td>74</td>
<td>120</td>
<td>61.67%</td>
</tr>
<tr>
<td>Non-expressive Conducting</td>
<td>68</td>
<td>120</td>
<td>56.67%</td>
</tr>
</tbody>
</table>
These results show only a slight increase (5%) in the group's accuracy score when the expressive conducting treatment was used compared to the non-expressive conducting treatment. The dynamic accuracy performance scores were then analyzed in order to determine if a difference might occur due to performance order. This was accomplished by comparing the percentage of points received for each of two separate performance orders. The first melody performed by each group received a raw score of 78 out of a possible 120 points. This calculates to a dynamic accuracy score of 65%. The second melody performed by each group received a raw score of 64 out of a possible 120 points. This calculates to a dynamic accuracy score of 53.33%.

Table 2 – Performance Order

<table>
<thead>
<tr>
<th>Performance Order</th>
<th>Raw Score</th>
<th>Possible Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Performance</td>
<td>78</td>
<td>120</td>
<td>65%</td>
</tr>
<tr>
<td>Second Performance</td>
<td>64</td>
<td>120</td>
<td>53.33%</td>
</tr>
</tbody>
</table>

The data reveal that the first melody performed by each group, regardless of conducting style, received a higher dynamic accuracy score than the second melody performed by each group. No further statistical procedures were used to analyze the data. It can be inferred, however, that a difference of 12% between the first performance and the second performance appears to be significant and a possible indicator that students performed the dynamics more accurately during the first performance regardless of whether the conducting was expressive or not. As clarification was needed, the dynamic accuracy scores for the first performances of each group were compared to determine whether expressive or non-expressive conducting style had any effect.
Table 3 – Conducting Treatment: Performance #1

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Raw Score</th>
<th>Possible Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive Conducting</td>
<td>35</td>
<td>60</td>
<td>58.33%</td>
</tr>
<tr>
<td>Non-expressive Conducting</td>
<td>43</td>
<td>60</td>
<td>71.67%</td>
</tr>
</tbody>
</table>

The data reveal that the non-expressively conducted melodies performed first received a higher dynamic accuracy score (13%) than the expressively conducted melodies. The dynamic accuracy scores for the second performances of each group were then compared to determine whether expressive or non-expressive conducting style affected the students’ performance.

Table 4 – Conducting Treatment: Performance #2

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Raw Score</th>
<th>Possible Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive Conducting</td>
<td>39</td>
<td>60</td>
<td>65%</td>
</tr>
<tr>
<td>Non-expressive Conducting</td>
<td>25</td>
<td>60</td>
<td>41.67%</td>
</tr>
</tbody>
</table>

From this further analysis, it appears that the expressively conducted melodies performed second received a higher dynamic accuracy score (23%) than the non-expressively conducted melodies.

Summary

Analysis of the data including both melodies revealed only a slightly higher dynamic accuracy score (5%) when the expressive conducting treatment was used. The results also indicate that the first melody performed by each group, regardless of conducting style, received a higher dynamic accuracy score (12%) than the second melody performed.
Further analysis revealed that non-expressively conducted melodies performed first received a dynamic accuracy score 13% higher than the expressively conducted song material. In the case of the melodies performed second, the expressively conducted melodies received a dynamic accuracy score 23% higher than that of the non-expressive conducting style. From these results, it would appear that performance order was more influential than conducting style. Perhaps the subjects' unfamiliarity with the conductor had an impact on the results with regard to conducting style and performance order. These results and their implications will be discussed in Chapter Five.
CHAPTER FIVE

Summary and Conclusions

Introduction

The purpose of this study was to investigate the effects of different conducting styles on high school choral students' ability to sing selected dynamics accurately. This chapter will provide a summary of the researcher's methodology as well as the research findings. There will also be a discussion of further research suggestions.

Summary of the Research

To answer the research questions, a videotape was made by a collegiate choral director including samples of expressive and non-expressive conducting. The conductor was unfamiliar to the students. The researcher created two melodies which were each eight measures in length. The dynamic markings piano, mezzo forte, and fortissimo were included in both melodies.

Eight groups of students briefly rehearsed the two eight measure melodies. Dynamics were not discussed. After the rehearsal, each group was separately audiotaped performing the two eight-measure melodies while watching the videotape. As they performed the melodies, they watched the videotape made by the collegiate choral conductor. Each group was instructed to follow all musical symbols and dynamic markings in the music.

A panel of three judges then adjudicated the audiotaped performances. Each judge used a scoring sheet to evaluate the sixteen audiotaped performances on the basis of dynamic accuracy. A five-point Likert-type scale was used (1=not accurate to 5=extremely accurate). Following the evaluation, interjudge reliability was calculated among the three judges at .7022.
Research Questions

1) Do high school choral students perform selected dynamic markings differently in two conducting conditions: (a) conductor using expressive gestures and (b) conductor using non-expressive (time beating) gestures?

A slight difference was found between the group’s dynamic accuracy scores when the expressive conducting treatment was used compared to the non-expressive conducting treatment. The expressive treatment received a percentage score of 61.67%. The non-expressive treatment received a score of 56.67%. These results showed only a 5% increase in dynamic accuracy with the expressive treatment.

2) Does performance order affect student performance accuracy of selected dynamic markings?

A difference was found between the first melody performed by each group, regardless of conducting treatment, and the second melody performed by each group. The first melody performed received a dynamic accuracy score of 65%. The second melody performed received a dynamic accuracy score of 53.33%. These results showed a 12% increase in dynamic accuracy with the first melody performed.

Findings

Student Familiarity with Song Material

The results seemed to suggest that the performing order had a more profound effect on the dynamic accuracy scores than the conducting treatment did. One possible reason for this could have been that the students only rehearsed the melodies for 15 minutes. This amount of rehearsal time may have not been enough to achieve familiarity with the melodies. The subjects
may not have felt comfortable looking away from their music. This lack of comfort could have kept the students from watching the conductor, thus eliminating the effects of the conducting treatment.

With the results of performance order showing an increase of more than two times that of the conducting treatments, further analysis was needed. The researcher decided to compare the expressive and non-expressive treatments during the first and second performances separately. Interestingly, of all dynamic accuracy percentage scores computed, the non-expressively conducted treatments during the first performance received the highest score (71.67%).

This data may also indicate that the reason presented earlier may indeed be relevant to the findings. A high dynamic score for non-expressively conducted first melodies could indicate that the students did not feel comfortable enough with the melody to watch the conductor during the first performance.

Analysis of the second performances showed that the expressively conducting melodies received a score of 65%. Of interest in this portion of the analysis was the 23% difference between expressive and non-expressive conducting treatments. This difference was the largest of all scores analyzed.

When all of these results are considered it is possible that, during the first performance, the students did not think they knew the melody well enough to look up at the conductor. After the first performance was finished, the students may have felt more comfortable with their ability to sing the melody without looking at the music. This comfort level allowed the students to concentrate on the conductor and, thus, the conductor treatment had a greater effect on the student’s dynamic accuracy scores during the second performance.
Student Familiarity with Conductor

It is also possible that the unfamiliarity of the conductor had a direct impact on the results. None of the students had ever seen this conductor before. It is possible that the students needed to use the first melody as a frame of reference for what the conductor’s movements meant. This would also account for the higher dynamic accuracy scores for expressively conducted melodies during the second performance.

Suggestions for Future Research

Further research is needed in the specific effects of conducting on choral performers. One suggestion would be to allow a longer rehearsal time. This would perhaps increase the subject’s comfort level with the music. If the subject felt that the melodies they were performing were familiar to them, it may allow them to concentrate more on the conducting treatment.

It would be beneficial to explore the differences between how choral performers respond to familiar and unfamiliar conductors. Performers may be able to respond more easily to a familiar conductor. This may also help to answer questions concerning the gestures that are commonly understood by choral performers.

Using naturally occurring melodies that have immediate dynamic contrasts is another suggestion for further research. Subjects may have a more immediate ability to watch the conducting treatment if the melodies they are performing occur in the context of a piece of music. Melodies from a choral selection would make an investigation more authentic, rather than using a melody specifically created for a study in dynamics.
Conclusion

The purpose of this study was to investigate the effects of expressive and non-expressive conducting styles on high school choral students’ ability to sing selected dynamics accurately. Analysis of the data revealed only a slight difference between the expressive and non-expressive conducting treatments. The expressive conducting treatment scored 5% higher than the non-expressive conducting treatment.

All music educators agree on the importance of conducting. Common sense tells us that a competent and accurate conductor will improve an ensembles ability to perform. But how do conductors help performers? This is a very difficult question to answer due to the difficulty of replicating authentic performance situations and isolating specific conducting gestures.

Although this research is difficult, however, it cannot be avoided. Once the specific effects of specific conducting gestures are discovered, we as conductors will be better able to prepare our ensembles for exceptional performances.
References


APPENDIX A

PERMISSION LETTER FROM THE OFFICE OF REGULATORY COMPLIANCE

Date: December 21, 2001

From: Candice A. Yekel, Director of Regulatory Affairs

To: Erich Laszek

Subject: Results of Review of Proposal - Expedited (IRB #01B1062-00)

Approval Expiration Date: December 21, 2002

"The Effects of Expressive Versus Nonexpressive Conducting on the High School Choral Students Ability to Sing Dynamically Accurate"

The Behavioral and Social Sciences Committee of the Institutional Review Board has reviewed and approved your proposal for use of human subjects in your research. This approval has been granted for a one-year period.

Approval for use of human subjects in this research is given for a period covering one year from today. If your study extends beyond this approval period, you must contact this office to request an annual review of this research.

Attached are confidential labels you can use to seal the envelopes that contain the original, signed informed consent forms obtained from the subjects of your study. These envelopes are then to be mailed to the address listed above. Contact this office if you need more labels.

Subjects must receive a copy of any informed consent documentation that was submitted to the Compliance Office for review.

By accepting this decision you agree to notify the Compliance Office of (1) any additions or procedural changes that modify the subjects' risks in any way and (2) any unanticipated subject events that are encountered during the conduct of this research. Prior approval must be obtained for any planned changes to the approved protocol. Unanticipated subject events must be reported in a timely fashion.

On behalf of the committee and the University, I thank you for your efforts to conduct your research in compliance with the federal regulations that have been established for the protection of human subjects.
APPENDIX B

INFORMED CONSENT TO VOLUNTARY PARTICIPATION FORM

INFORMED CONSENT TO VOLUNTARY PARTICIPATION  
THE PENNSYLVANIA STATE UNIVERSITY  

Title of Project: Individual Choral Students’ Performances (IRB #01B1062-00)

Person in Charge: Erich P. Lascek  
332 McWilliams Drive  
Natrona Heights, PA 15065  
724/230-0119

Dr. Lynn Drafall  
210 Music Building  I  Penn State University  University Park, PA 16802  
814/863-4219

1. This section provides an explanation of the study in which you will be participating:

   A. The study in which you will be participating is part of research intended to assess 
high school choral students’ performances on two melodies.

   B. If you agree to take part in this research, you will be asked to sing two melodic 
excerpts in groups of 6 to 11 students. These excerpts will be audiotaped and 
evaluated. You and approximately 70 other students will be involved in this 
study.

   C. Your participation in this research will take up two full class periods.

   D. This study will involve the use of audiotape recording. These tapes will be 
listened to by a panel of three judges. The tapes will be stored in a locked cabinet 
in my school office and will be destroyed by September 15, 2002. The judges 
will have no knowledge of who you are.

2. This section describes your rights as a research participant:

   A. You may ask any questions about the research procedures, and these questions will 
be answered.

   B. Your participation in this research is confidential. Only the person in charge will 
have access to your identity and to information that can be associated with your 
identity. In the event of publication of this research, no personally identifying 
information will be disclosed. To make sure your participation is confidential, 
only a code number appears on your group’s audiotape. Only the researcher can 
match names with code numbers.
C. Your participation is voluntary. Participation or non-participation will have no effect on your relationship with the school district or the choral director and will in no way affect course grades.

D. After you have finished participating, you will receive a detailed explanation of the study. Any questions you have at this time will be answered.

3. This section indicates that you and your parent/guardian are giving your informed consent to participate in this research:

Participant:

I agree to participate in a scientific investigation of music, as an authorized part of the education and research program of the Pennsylvania State University.

I understand the information given to me, and I have received answers to any questions I may have about the research procedures. I understand and agree to the conditions of this study as described.

To the best of my knowledge and belief, I have no physical or mental illness or difficulties that would increase the risk to me of participating in this study.

I understand that I will receive no compensation for participating.

I understand that my participation in this research is voluntary, and that I may withdraw from this study at any time by notifying the person in charge.

I understand that I will receive a signed copy of this consent form.

______________________________  ________________
Signature                        Date

This is to certify that I consent to and give permission for my child’s participation as a volunteer in this research. I have read this form, and understand the content of this consent form.

______________________________  ________________
Signature                        Date
APPENDIX C

SONG MATERIAL

A

B
APPENDIX D

DYNAMIC ACCURACY SCORE SHEET

You will hear 2 melodies, alternating, 8 times each.

Please evaluate the performances on *their dynamic accuracy only.*

A scale of 1 to 5 will be used.

1 is completely inaccurate.

5 is completely accurate.

<table>
<thead>
<tr>
<th>Excerpt Number</th>
<th>Melody A or B</th>
<th>Your Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>B</td>
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<tr>
<td>5</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>A</td>
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</tr>
<tr>
<td>10</td>
<td>B</td>
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</tr>
<tr>
<td>11</td>
<td>A</td>
<td></td>
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<tr>
<td>13</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>A</td>
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</tr>
<tr>
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<td>B</td>
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</tr>
<tr>
<td>16</td>
<td>A</td>
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