

Visual and Aural Modes of Perception in Choral Performance Evaluations

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Abstract

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A live musical performance is influenced by both the visual and aural information associated with that performance. A growing body of literature has demonstrated that the experience of a live musical performance is largely dominated by the visual information accompanying and/or associated with that performance, despite the common assumption that music is mostly or completely a sonic experience.

This study extended in several ways prior cross-modal research that examined the effects of visual and aural information on aural performances by wind ensembles (Morrison, Price, Smedley, & Meals, 2014) and visual performances by conductors (Bender & Hancock, 2010). First, the study used collegiate choral performances, rather than wind ensembles. Second, the study broadened the target population. Prior research involved secondary and college students who were in ensembles or music classes, while the current study involved adults from the larger population who had ensemble experience. This broadening of the participant pool also resulted in a much greater range of experience (from 2 to 25+ years) in a conducted music ensemble than

prior research and included not only singers and instrumentalists (as in prior research), but also conductors. Finally, this study was the first in this line of research to use an online platform instead of a classroom environment.

There were four primary quantitative purposes for this study. First, the researcher proposed a fully crossed experimental exploration of the effects of conducting expressivity conditions (low vs. high) and choir expressivity conditions (minimal vs. maximal) on the perception of both choral and conductor expressivity, using identical musical passages and identical conducting conditions for comparison. Additionally, the researcher sought to understand how choir and conductor ratings would compare across presentation modes (single vs. dual) of visual and aural stimuli. Third, the researcher tested for correlations of conductor and choir scores in each of the paired expressivity treatment conditions. Finally, the researcher wanted to understand the predictive contributions of various collected factors on the conductor and choir expressivity assessment scores. The purpose of soliciting qualitative comments was a phenomenological inquiry into the construct of conductor and ensemble expressivity. This inquiry produced emergent ideas regarding the construct of expressivity in an ensemble performance and illuminated how people might differ in their evaluation processes of conductor and choir expressivity.

Adult participants with prior or current experience in a conducted music ensemble, rated conductor and/or choir expressivity on an anchored scale from 1 (*low*) to 10 (*high*) and, if they desired, commented on each of their ratings. Additionally, participants were asked to share any additional ideas or thoughts regarding choral expressivity. The results of the quantitative data indicated a dominance of the visual mode in a bi-modal exploration of musical performance. Results revealed that both conductor and choir ratings were significantly impacted by the four

paired expressivity conditions that resulted from the fully crossed design. The study also demonstrated that low-expressivity conducting is deleterious to the perception of both minimally and maximally expressive performances, while the perception of low-expressivity conducting is not influenced by a university choir's expressivity in performance. Two multiple linear regressions revealed that neither experience (2-25+ years) nor role (conductor, singer, instrumentalist) predicted choir or conductor ratings; furthermore, in the case of both conductor and choir ratings, conductor expressivity was a stronger predictor of the scores.

Among the qualitative findings regarding choral expressivity emerged two lenses—cognitive and affective—through which participant observers seemed to evaluate expressivity. The quantitative and qualitative results of this study resulted in the Model of Choral Expressivity, which illustrates the interplay of visual and aural information between choir and conductor in performance and between these performers and the audience, accounting for the two primary lenses of interpretation that emerged from the present study. Aural and visual research in ensemble performance may consider this model, including the expanded role of conductor as a visual performer, for future explorations.

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DEDICATION

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Chapter 1: Introduction

Statement of the Problem

In a small National Association of Schools of Music (NASM) accredited Bible school in Chicago, Illinois, Professor Gerald Edmonds opened the first class of Conducting I by introducing the students, including the researcher, to the field of conducting by saying something like the following: “As a conductor, you are not primarily a conductor. You are a teacher, a clown, a psychologist, a leader, a slave driver, a coach, a parent, a musician, an artist, an administrator, an inspiration...” The list of roles continued for quite some time to the point of content saturation.

Conductors wear a variety of hats and play a variety of roles. Gone are the days where conductors merely beat time. In composer-conductor Hector Berlioz’s *Treatise on Instrumentation and Orchestration* (1855), which was revised and edited by Richard Strauss, translated by Theodore Front, and then published by Kalmus (1948), Berlioz commented on this complexity of roles that conductors play:

The conductor must *see* and *hear*, he [must] be resourceful and energetic, he must know the nature and the range of the instruments and be able to read a score. Besides the specific talent whose component qualities we are going to discuss, he must have other, almost indefinable gifts, without which the invisible contact between him and the performers cannot be established. Lacking these, he cannot transmit his feelings to the players and has no dominating power or guiding influence. He is no longer a director and leader, but simply a time-beater, provided he is able to beat and divide time regularly.

Modern conducting textbooks continue to develop ideas surrounding the various roles a conductor plays, expanding the profession’s understanding of conductor roles and clarifying the

importance of a conductor in bringing unity of vision, technique, and musical expression to the performance of ensemble music by communicating verbally and nonverbally to the ensemble (Decker & Kirk, 1995; Green, 2004; Jordan, 1996, 2007; Jordan, Moliterno, & Thomas, 2011; Jordan, Wyers, and Andrews, 2011). Conducting textbooks have advocated for a multiplicity of communicative roles of conducting, including teacher (Decker & Kirk, 1995; Green, 2004; Jordan, 1996, 2007), visionary (Green, 2004; Jordan, 2011), and a movement specialist (Jordan, Wyers, & Andrews, 2011). In the introduction of her textbook *The Modern Conductor*, Elizabeth Green (2004) emphasized three primary phases where the focus of a conductor's conducting leadership role shifts. In the preparation phase, the conductor learns and studies the score and prepares to conduct what the score demands, including her vision of the composer's intent in musical performance. In the rehearsal phase, the conductor applies the knowledge learned in the preparation process in an effort to lead the ensemble toward a unified version of her vision of the composer's intent. Finally, in the performance phase, the conductor focuses on conducting for performance, doing that which is necessary to elicit a viable performance by the ensemble.

Conducting textbooks and pedagogues attempt to teach expressive conducting under two primary assumptions, that gesture affects actual ensemble performance and that the conductor is not a direct performer communicating to the audience. For example, Decker and Kirk (1995, p. 2) illustrated the process of choral performance as a lineage of influences from composer to audience, including the direct influence of conductor on "performers" and of "performers" on the audience (see Figure 1). In this illustration, the conductor is neither considered a performer, nor assumed to have a direct influence on the way the audience perceives the performance.

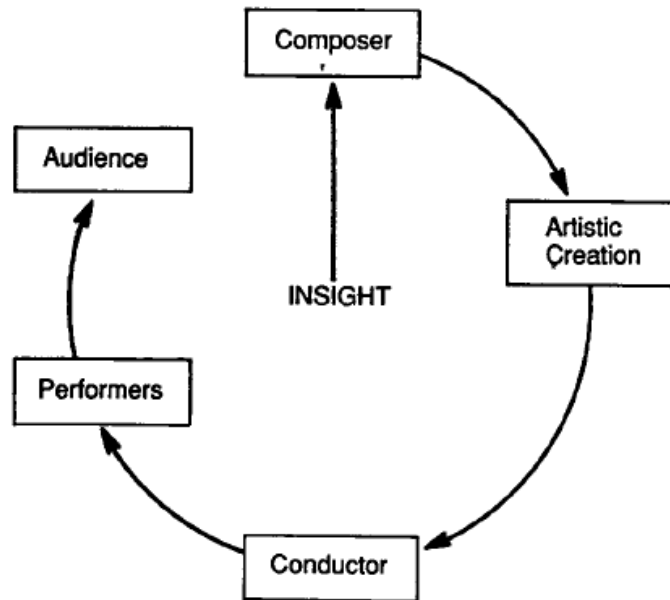


Figure 1. Communication Process in Performance: Composer-Conductor-Performers-Audience

Many textbooks address expressivity in conducting for one to two chapters, covering issues such as style (Garretson, 1998), articulation (Green, 2004), dynamics (Garretson, 1998; Green, 2004; Labuta, 2010), and tempo (Green, 2004; Labuta, 2010). James Jordan, an example of a national choral leader who has dedicated many years of his life to producing a series of textbooks and accompanying videos addressing the complex process of developing expression in a choral setting, often focuses on the conductor as teacher (Jordan, 1996, 1997; Jordan, Moliterno, & Thomas, 2011; Jordan, Wyers, & Andrews, 2011). Few studies address the conductor as a dancer, although a growing body of references in publications about conducting has begun to lay the foundation for the value of a conductor being fluent in movement—similar to a dancer.

Incorporating elements of dance movement into conducting is a fairly recent idea, but it is gaining momentum among leading pedagogues in the field of conducting (Bartee, 1977;

Billingham, 2009; Gambetta, 2005, 2008; Jordan, Wyers, and Andrews, 2011; Parker, 2014).

Bartee (1977), an advocate of Laban Movement Analysis (LMA) training for conductors, states that conducting pedagogy needs to incorporate expression into the technical aspects of instruction:

In the traditional conducting class, students spend a great deal of time working on beat patterns which conform to prescribed distances and directions, but are not taught the fundamentals of body movement. Expressive movements are treated as “added” technique, learned only after the mechanics of time-beating have been mastered (p. 17).

Gambetta (2005) studied how the introduction of LMA influenced the palette of gestural effectiveness a conductor might be able to access. Billingham (2009) and Jordan, Wyers, and Andrews (2011) subsequently explained the application of LMA to conducting with an effort toward integrating these ideas into the pedagogy of conducting and into the ensemble rehearsal. The idea that a conductor can communicate more effectively by way of movement associated with dance is gaining credibility in the conducting field and provides a backdrop to the current study’s findings regarding the role of conductor—specifically as visual performer/dancer.

Recent research examines the field of conducting from a variety of perspectives (Acklin 2009), giving credence to the idea that conductors must call on a palette of resources and skills to carry out their various roles, as articulated by Edmonds, Berlioz, and many other current and historic leaders in the field. Specifically, research in the field of conducting aims to demonstrate its direct effect on ensemble performance or the perception of ensemble performance. The effect of conducting on ensemble performance has been investigated substantially enough to run a “best-evidence synthesis” meta-analytic dissertation study on the existing literature (Acklin, 2009). This extant literature mostly assumes a directive conductor role, in which the ensemble

responds to the specificity of the nonverbal communication of a conductor.

Conducting textbooks emphasize the importance of the ensemble as the centerpiece of performance. Pedagogues of conducting de-emphasize the importance of the conductor as a performer. In fact, some pedagogues of conducting teach that in performance, the role of the conductor is to direct and communicate with the ensemble, which in turn produces an aural and visual performance for the audience. In such a model, a common philosophy is that the conductor should economize gesture or do only that which is necessary to elicit the proper performance from the ensemble. Superfluous movement is assumed to “take away” from the ensemble’s performance. Also in such a model, it is assumed that the visual and aural perception of an audience member stems from the information given in the ensemble’s performance. See Figure 2 for illustration of this concept in a choral context.

While the growing body of literature is informative regarding the complex field of conducting, only a few studies have examined the effect conducting may have on listeners, taking into account the possibly expanded role of the conductor in performance. For some time, researchers have understood that the visual perception of a musical performance is extremely important in, if not dominant over, the aural perception itself. Broadly speaking, recent research has demonstrated that the power of sight is profound on general human experience and perception. The way a product is wrapped creates a favorable bias among consumers (Howard, 1992). Voters prefer politicians who appear to be competent (Todorov, Mandisodza, Gor, & Hall, 2005). First impressions indeed matter (Ambady & Rosenthal, 1992, 1993; Ballew & Todorov, 2007; Platz & Kopiez, 2013).

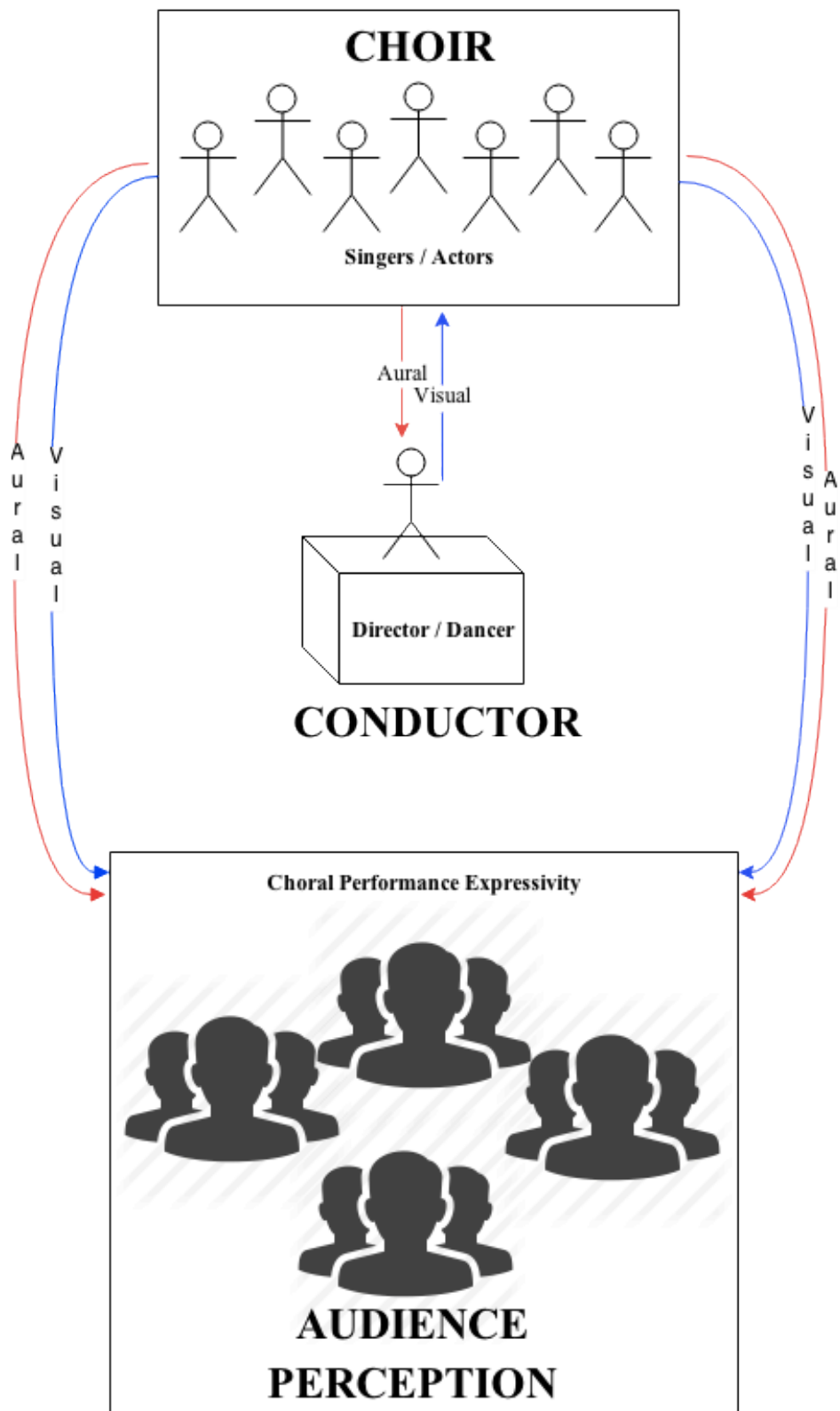


Figure 2. Model of Assumed Audience Perception in Choral Performance

More closely related to this study, researchers have also examined how sight influences human experience and perception in the performance of music. Some musical organizations hold “blind” auditions in order to avoid the possible effects of visual appearance or movement on judgments (Goldin, 2000), while many critics disparage the use of visual choreography that may interfere with the composer’s intent (Tommasini, 2003; von Rhein, 2002). Traditionally professional musicians conceive the performance of music as primarily an aural experience (Goldin, 2000; Murnighan & Conlon, 1991; Tommasini, 2003; von Rhein, 2002), yet performances of music often involve a visual element attached to the sonic experience. While musical performers seem to focus on the musical performance primarily or exclusively through aural presentation, science seems to be indicating that musical perception is at least as much about the visual information accompanying the aural performance as it is about the aural performance itself. It appears that a large gap between research and performance, and by extension the pedagogy of performance, persists in this regard. Schutz (2008) began to bridge this gap in his review and synthesis of the literature and calls for reforms in performance and pedagogy in his article “Seeing music? What musicians need to know about vision.”

What influence, if any, do visual elements associated with the performance have on the perception of that musical performance? For example, how does a pianist use body movement and gesture to indicate a legato articulation on a percussive instrument? Audience members may observe string players synchronizing their bowing, jazz players raising their eyebrows while bending the pitch upward, or percussion players continuing to move their hand in the path of the completed stroke long after the sound has died to give the illusion of a longer duration of sound. Do matching bowings, raised eyebrows, or stretching the perceived duration of a sound have an impact on the audience’s assessment of the performance?

Festival adjudicators for band and choir may observe conductors and/or expressive visual elements in the performers that accompany the performance. Do the visual elements of these festival performances—conductor movements and appearance and the visual expressions of their ensemble members—influence how their ensembles are adjudicated? Recent trends of major orchestras, such as the Los Angeles Philharmonic, are to project the conductor on a large screen like a rock concert. Does this added amount of visual information affect how the audience experiences the LA Philharmonic or other orchestras with conductors projected on the screen?

The power of sight is anecdotally omnipresent in the realm of musical performance. For example, how often does a patron ask, “Who did you *see* perform?” when referring to a musical performance? “Did you *see* Chicago Symphony Orchestra’s performance of Brahms’s *Requiem*?” is a common way to ask if someone attended and *heard* the performance. In both examples, the word “see” stands for “see and hear” and demonstrates how humans describe musical performance, primarily through the sense of sight.

Increasingly, American Choral Director Association (ACDA) conference performances involve dancing and expression—that most musicians would consider superfluous—accompanied by choral sounds that are acceptable, though not exceptional. These performances often bring down the house and result in standing ovations. Even at a national conference of choral conductors, purveyors of and advocates for excellence in choral performance, seem to demonstrate a preference for the visual aspects of a choral performance. Even musicians—specifically conductors—seem to be as easily fooled—and as profoundly swayed—as lay people by the visual aspects of a sonic art in live performance.

While people use visual cues to make quick judgments (Ambady & Rosenthal, 1992, 1993; Ballew & Todorov, 2007; Platz & Kopiez, 2013; Benjamin & Shapiro, 2009; Rule &

Ambady, 2008), these very cues are often ignored (Gabrielsson, 2003) and/or regarded as tangential to the musical interpretation (Bergeron & Lopes, 2009). Given the consensus that sound is central to performance evaluation (Sloboda, Lamont, & Greasley, 2009) and that most musical performances are accompanied by visual elements, it is essential that music performers understand the phenomenon of the combination of visual and aural perception in the performance of music and more specifically, the effects they have on listeners.

Need for the Study

Research in cross-modal interactions has provided valuable insights into many of the pertinent questions of visual and aural perception in music, and more specifically, in ensemble performance. What effects do appearance, gesture, facial expression, and other factors have on the way a performance is perceived? How can the complex nuances of conducting and nonverbal communication be categorized, observed, and measured? What impacts do a conductor's appearance, gesture, facial expression, and eye contact have on a performance or on the perception of a performance? Are gestural movements disconnected to the perception of sound, or can they alter the perception of sound? Does synchronization of sound and movement have an effect on the way people perceive a performance? Does the way an ensemble performs sway the perception of the conductor's performance?

The interaction of these visual elements with the aural experience raises questions regarding the interaction of the audio and visual modes of perception for the audience members. Do the movements of the performers align with, augment, or depress the audience's perception of salient music features of the musical performance? Is one mode of perception, the visual or the aural, stronger than another in the audience's perception? Does one perception mode depend on the other in their effects? If there is an interaction between two modes of perception, how

does one explain these effects or interactions?

Practical extensions of the answers to these questions may have profound impacts on the role of the conductor in performance, the integration of information and approach into conducting methods and techniques classes, and the philosophy and practice of conducting pedagogy. Experientially and methodologically, curricula for musical performance tend to focus primarily on musical (or aural) elements and then to add expressive elements upon achievement of technical skills. For example, solo performers are trained to become technically facile in their instruments and later to highlight critical musical moments or to “play up” the virtuosic skills demanded by a passage of music by way of exaggerated visual cues. If the visual elements have an impact on the perception of the aural perception, at what point might a curriculum for performers account for those visual additions and connections to the music being performed? If the visual elements have the potential to impact the perception of the final product, how might visual elements become a more integral and intentional part of the curriculum and pedagogical approach for musical performers? Some conducting programs and curricula account for conducting technique and leadership development, yet very little regarding music perception is integrated into these curricula. Producing a fuller body of research may assist in reconfiguring curricular approaches to the conducting field, such that the conductor (performer) is seen not only as a director and teacher/pedagogue/leader, but also as a visual performer in the overall musical experience.

According to a growing body of literature in music perception, the presence of both visual and aural information in a performance may affect observers’ perception of that musical performance (aural). In other words, appearance and physical movements (visual) incorporated into a musical performance (aural) may provide a different perception of that musical

performance (aural) than the musical performance alone. Conversely, a smaller body of literature in music perception suggests that the same presence of visual and aural information may also alter the perception of the visual performance (appearance and movement). Since conducting is an entirely kinesthetic experience with association, but not production, of sound, conducting is a distinctive platform to examine this phenomenon of cross-modal interaction.

Research in cross-modal interaction has demonstrated significant effects of visual information on aural perception. When listeners were presented with contrasting audio and visual speech sounds, they perceived phonemes other than those presented aurally (McGurk & MacDonald, 1976). According to Schutz and Lipscomb (2007), the “McGurk effect”¹ is found in music, though perhaps to a lesser degree than found in speech. Gabrielsson (1999) identified the need for research to examine how visual information might impact the perception of aural information in music, more specifically, how expressive movement might impact music performance perception.

Gillespie (1997) demonstrated that by adding a visual stimulus, expert musicians’ evaluations of certain aspects of performance quality are affected. Factors such as performer appearance, movement, and facial expression have been found to contribute to performance evaluation, judgments of expressivity and even identification of compositional characteristics. Visual information as varied as attractiveness and gender (Elliott, 1995/1996; Ryan & Costa-Giomi, 2004; Ryan, Wapnick, Lacaille, & Darrow, 2006; Wapnick, Darrow, Kovacs, & Dalrymple, 1997), stage behavior and attire (Wapnick, Mazza, & Darrow, 1998, 2000), and race (Elliott, 1995/1996) may all have effects on evaluations of individual performers.

Manner of movement and facial expressions may also influence perception of solo performances (Dahl & Friberg, 2007). Juchniewicz (2008) reported that college student music

majors evaluated more positively solo piano performances characterized by full-body movement than those with little or no movement. Thompson, Graham, and Russo (2005) found that participants' responses corresponded to facial expressions with positive or negative intent on major and minor intervals.

If such visual cues exist in solo performance, how much more must they exist in the performance of conducting? Because visual conveyance of the conductor's artistic vision is the primary intent of conducting, it is innately expressive. In other words, since one of the primary goals of conducting performance is to communicate expressive facets of the music to ensemble, it stands to reason that conducting would have more specific and more comprehensive visual information than the solo performances cited in the studies above. In an initial study, Geringer, Cassidy, and Byo (1996) reported that performers' movements may have aided non-music majors participants' cognitive memory, but not their affective memory. A subsequent study unveiled that non-music majors who watched a video of conductor and performers scored higher on cognitive listening tests than those who listened to the identical performance while watching a programmatic animation (Geringer, Cassidy, & Byo, 1997).

Among the greater body of research regarding cross-modal interactions in the perception of musical performance are studies that suggest that the visual elements of conducting may measurably impact the aural experience of audience members, indicating that a conductor's role in performance, at least in part, is to guard the integrity of the musical product by way of her/his visual presence and movement. For example, in her chapter "Portal to Expressivity: Laban's States and Drives for Conductors" (Jordan, Wyers, and Andrews, 2011), Wyers summarizes the work of Morrison and Selvey (2011), which found that inexpressive conducting negatively influenced participants' evaluations of choral performances otherwise deemed to be moderately

expressive, and gives caution for “the consequences that may await the conductor who lacks an expressive gestural vocabulary” (Jordan et al., 2011, p. 169).

Research results remain mixed regarding the effect of expressive conducting on an ensemble’s sound (Acklin, 2009). Research has demonstrated that stock gestures are capable of conveying specific musical ideas (Byo, 1990; Sousa 1988) and expressions (Byo & Austin, 1994). While Van Weelden (2002) discovered that facial expression and ensemble performances may be related to perception of conductor effectiveness, she was unable to demonstrate an effect of gesture on actual performance. Furthermore, Keller and Appel (2010) studied piano duos for level of musical coordination between performers with and without visual contact and found that without visual contact, coordination was higher. The findings of these studies suggest that inter-performer communication may be most successful when musical intentions are aligned rather than a response to directive information. In the pedagogy of conducting, it is commonly assumed that directive information is the foundation for conducting’s effect on ensemble performance; however, research is indicating that establishing common vocabulary for expressive gestures may serve as an agreement of intent, rather than an imposed interpretation. In this line of thought, the current study begins to explore how alignment of musical intent between performers and audience may be a significant factor in audience engagement and perception.

Correlational evidence between conducting and performance is as inconclusive as a specific causal relationship between the two. Price asked college music majors to evaluate and comment on the expressivity (Price & Chang, 2001, 2005) and quality (Price, 2006) of both conductors and wind ensembles performing at district and state festivals. According to participants’ comments, expressivity was one of the primary contributing factors to the evaluation of quality. However, none of the studies found a relationship between conductor

evaluations and band performance achievement (festival ratings).

Recent studies have examined the impact of conductor expressivity on evaluations of performances by comparing contrasting conducting examples with identical audio excerpts. Morrison, Price, Geiger, and Cornacchio (2009) instructed participants to rate the expressivity levels of both ensemble and conductor expressivity in four performance excerpts. Two wind performances were each heard twice, once paired with low- and again with high-expressivity conducting conditions. Despite identical ensemble performances across conducting conditions, participants (college music majors) rated excerpts paired with high-expressivity conducting significantly higher than those paired with low-expressivity conducting conditions. Price and Mann (2011) subsequently employed similar procedures, using college music majors. However, they used seven conductors, asked participants to rate quality, and examined results from both the front and back perspectives. Results were similar to Morrison et al. (2009) and further demonstrated that ensemble ratings were not significantly different whether conductors were viewed from the perspective of the ensemble (facing the conductor) or the audience (behind the conductor).

Morrison and Selvey (2014) sought to extend this line of research in three ways. First, they examined whether results obtained in response to choral performances would be comparable to those previously observed for instrumental performances. Second, they extended the sampling frame to include middle and high school music ensemble students. Finally, they added an audio-only condition in order to test whether the level of conductor expressivity enhanced or detracted from listeners' evaluations of the choir performances. Their findings indicated that listeners across a wide range of age (middle school through college) and experience (from less than one year in a conducted ensemble to advanced college music majors) struggled to separate visual and

aural information. They also found that low-expressivity conducting might have a deleterious effect on performance evaluations of moderately expressive performances.

A recent trend in examining the cross-modal interaction of the audio and visual modes of perception in conducting and ensemble performance has been to examine the effect of the ensemble quality or level of expressivity on conductor evaluations. Silvey (2011) examined whether the presence of excellent or poor ensemble performances would influence conducting expressivity evaluations of highly expressive conductors, using a similar design as Morrison et al. (2009) and Morrison and Selvey (2014) while reversing the independent and dependent variables. College ensemble members rated highly expressive conducting significantly lower when paired with poor-quality performances. The research of Bender and Hancock (2010) confirmed these findings and also found that perception of lowly expressive conductors was not influenced by an ensemble's performance. Bender and Hancock assessed the effect of contrasting conducting intensity conditions (high/low gestural intensity) and contrasting qualities of ensemble performance (high/low) on musicians' evaluations of conductor effectiveness. They found that conductors are generally rated more highly when paired with an ensemble performing with high quality. More importantly, they demonstrated that effectiveness ratings of high-intensity conductors were significantly impacted by the performance quality, while low-intensity conductor ratings were not significantly impacted by the ensemble's performance.

Morrison et al. (2014) used a similar design to that of Bender and Hancock (2010) and examined the effect of contrasting conducting conditions on contrasting conditions of expressive elements, specifically articulation, dynamics, and overall expressivity. In addition to confirming that mismatched pairs of conducting and performance conditions have an effect on the perception of both minimally and maximally expressive performances, they found that

“expressivity of conducting gesture either enhanced or detracted from participants’ impression to such a degree that evaluations of qualitatively different performances could be rendered essentially equal” (p. 8). In other words, two music performances considered to be contrastingly expressive were rendered equally expressive—due to the contrasting expressivity levels of the visual information provided in the conducting gesture accompanying the performance.

These results are consistent with research that has suggested the dominance of visual information in evaluations or identifications of musical performance (Mitchell, Raymond, & MacDonald, 2014; Tsay 2013). While Davidson (1993) asserted that the literature is scarce in suggesting what is conveyed by the visual information of a musical performance, Vines, Krumhansl, Wanderley, Dalca, and Levitin (2011) concluded that the visual elements in a musical performance convey the performer’s intended level of emotion or intensity more than the aural elements. Listeners could not discern specific expressive information by specific movements, but within each performer’s own gestural repertoire, listeners discerned changes in movement associated with changes in emotional intensity. Tsay (2013) examined the impact of visual information on expert judgments and its predictive validity for performance outcomes in a series of seven conservative tests. The findings demonstrated that experts and novices alike depend primarily on visual information when judging music performance. Even when the observer consciously values sound over sight, unconsciously the visual information outweighs aural information—even among expert musicians. In performance, the role of the ensemble conductor depends exclusively on visual communication to ensemble and audience members in the form of gesture and expression, making it one of the most visually oriented performance roles. Understanding the conductor’s impact on the audience’s perception of the music is important to her role as performer and, by extension, to the pedagogy of conducting.

Among educationally affiliated performance groups (e.g., school bands, choirs, and orchestras), evaluations and assessments often isolate the sonic qualities of performance. However, in live or video-recorded contexts, music performances of these groups include a significant visual component, the focal point of which is the ensemble conductor. In these performances, the attention and expectations of the listener may be focused and directed by the visual cues of the conductor. In other words, the visual cues of the conductor may affect a listener's perception, and in turn, the listener's assessment of an ensemble's performance. Comprehending the effect of the visual on the aural may help to administer more fairly the adjudication of these ensembles, so that a conductor with low-expressivity does not negatively affect the ensemble's evaluation. Understanding this phenomenon may also expand the conductor's role of nonverbal communication to include the audience, not merely the ensemble.

Much attention has been given to the impact of conducting on rehearsal efficacy and performance improvement. The extensive search procedures for selecting conductors for professional ensembles and the requirement by the National Association of Schools of Music to include conducting competency, measured by creating "accurate and musically expressive performances," in the curriculum for music educators (2007, p. 95) seem to support the general assumption that a conductor has a significant impact on both rehearsal and performance quality, including accuracy and expression. In addition, conducting techniques and methods books and courses operate under the assumption that conducting has the power to influence and change the performance of the ensemble, and yet the jury is still out. If conducting methods are to adequately address the phenomenon of conducting, it is imperative that the interaction of visual and aural modes in the perception of performance be more fully examined.

While significant sources of education focus on the impact of conducting on rehearsal

and performance improvement, lesser attention has been given to the effect conducting has on the experience of the listeners. Teachers of conducting often focus on the technical and expressive aspects of conducting that elicit specific musical responses in their performers, that is, directive conducting. If, however, visual cues of the conductor affect a listener's perception of the aural experience of the performance, how might pedagogues of conducting alter their approaches and curricula to expand the role of the conductor beyond that of a director and teacher to that of a visual performer? In other words, how might conducting curricula account for the alignment of musical intent between conductor and audience? These questions are the backdrop to this field of research.

Furthermore, in the researcher's experience, musicians of significantly different musical experience levels seem to use different language to describe similarly perceived phenomena in musical performance. Does this mean that these different levels of experience contribute to a different experience or that their descriptions are different? Are educated audience members (or outside observers) as perceptive as expert conductors with regard to musical nuance and gestural specificity? How do people assess musical performance, particularly when asked about expressivity? These questions helped to frame the qualitative portion of this study.

There seems to be a gap between assumptions found in the philosophy and practice of conducting and conducting-related pedagogy and the science that may or may not support those assumptions. In other words, conducting methods and techniques books and videos are full of both *a priori* and anecdotal knowledge of conducting experts, but scientific investigations have not yet caught up. This study helps to bridge that gap by examining the effects of contrasting visual and aural conditions on the perception of each condition, using conducting as the visual stimulus and choir performance as the aural stimulus. Additionally, this study provides a basis

for comparing the ratings and qualitative descriptions of those ratings among a broad range of music observers, from conductors to instrumentalists and from people with 2 years of ensemble experience to 25+ years of experience.

Purpose of the Study

Because of the gaps between assumptions and science, the researcher sought to help provide additional breadth and depth to the topic of cross-modal perception of visual and aural elements in music performance. Additionally, the researcher sought to begin developing ways to understand how different categories of people evaluate expressivity in ensemble performances. The purpose of this study was to examine the effects, interactions, and correlations of contrasting conditions in both the visual perception of conducting and the aural perception of choral performance on the evaluation of both conductor and choir expressivity. A secondary purpose was to explore and compare the qualitative comments and perspectives of singers, conductors, and instrumentalists with regards to their explanations for their ratings and their views on expressivity.

To supplement and extend previous research, this study examined effects of visual and aural elements on both conductors and choir ratings. Also consistent with prior qualitative components in this field of research, this study qualitatively explored participants' volunteer comments regarding their ratings and views of expressivity. As an extension to previous research, this study examined participant comments to assist in explaining the construct of expressivity, as well as any differences in rating tendencies.

Other than the research of Napoles (2009; 2012) and Morrison and Selvey (2014), it has been the practice of perception research with conductors and ensembles to use instruments as the performing forces. This study sought to affirm and extend previous findings using a choir rather

than an instrumental ensemble. This study also sought to affirm and extend previous findings by use of an alternate testing environment; rather than using classrooms (Morrison et al., 2009; Morrison et al., 2014; Morrison & Selvey, 2014; Price & Mann, 2011;), this study utilized an online platform. Previous research has used general terms for performance evaluation such as “quality” (Price and Mann, 2011; Silvey 2011), “expressivity” (Morrison et al., 2009; Morrison & Selvey, 2014), and “effectiveness” (Bender & Hancock, 2010). While Morrison et al. (2014) isolated individual elements of performance expressivity (articulation and expression), they found that ratings for these elements were similar to those for general expressivity. This study chose to use the term *expressivity* to measure musical performance perception and, in contrast with prior research, defined the term.

Description of the Study

The population for this study consisted of adults who have performed in a conducted music ensemble. The independent variables included conducting expressivity (low and high) and choir expressivity (minimal and maximal). Dependent variables were participants’ ratings of conducting and choir expressivity. Low- (C-) and high-expressivity (C+) conducting and minimally (E-) and maximally (E+) expressive ensemble performances were fully crossed, creating four paired expressivity condition treatments, C+/E+, C-/E+, C+/E-, C-/E-, two matched and two mismatched. Possibly confounding variables were addressed in the data collected in the introductory, demographic, and experience questions that were asked of participants and examined statistically. Participants rated expressivity of conductors and/or choirs while observing various conditions of visual and/or aural information and were given the opportunity to explain their ratings and their views of expressivity.

Participants were randomly assigned to one of three presentation modes of the survey,

each comprised of eight one-minute stimuli excerpts. The three presentation modes included the following: conductor-choir (audio-visual), conductor-only (visual-only), and choir-only (audio-only). The first group evaluated both conductor and choir expressivity while being exposed to both visual and aural information. The latter two groups evaluated either conductor or choir expressivity, while being exposed only to the corresponding condition. An anchored scale from 1 (*low*) to 10 (*high*) was used for each expressivity rating. Additionally, participants were given the option of explaining their rating(s) for each excerpt they watched. Each presentation mode was divided into different presentation orders, each beginning with differing combinations of independent variable conditions (low/high conducting, minimal/maximal choir), resulting in four surveys/presentation orders in both the conductor-choir (surveys 1A, 1B, 2A, and 2B) and the conductor-only (surveys 3A, 3B, 4A, and 4B) presentation modes, as well as two surveys/presentation orders in choir-only (5A, 5B) mode.

Within the conductor-choir mode, observers were intentionally exposed to both matched and mismatched pairings of conducting and performance expressivity conditions. This use of deceptive stimuli helped to determine any effects that the treatment conditions (i.e., contrasting conducting conditions) may have on the perception of choir performance, as well as the effects the other treatment conditions (i.e., contrasting choir conditions) may have on the perception of conducting performance. Comparing data between each of the single-modes and the bi-modal presentation allowed the researcher to understand the difference that adding a conductor to a choir made and the difference that adding a choir to a conductor made.

In all 10 surveys, participants were asked a series of demographic and experiential questions; the purpose of this data was to determine the degrees to which these variables might account for the resultant ratings versus the manipulating variables (conductor and choir

expressivity). Additionally, this information was helpful in identifying the profile and background of the participants' qualitative comments.

Research Questions

The primary research questions guiding this study were as follows:

1. Using the four possible pairs of visual and aural expressivity conditions (C+/E+, C+/E-, C-/E+, and C-/E-) as the independent variables, what are the effects of the combinations of visual and aural expressivity conditions on the perception (ratings) of choir performances?
2. How does perception of an ensemble's performance change by adding a conductor?
3. To what extent are conducting expressivity conditions, ensemble expressivity conditions, paired expressivity conditions, presentation order, role, environment, gender, level of education, experience, and ensemble type predictors of choir evaluations?
4. Using the four possible pairs of visual and aural expressivity conditions (C+/E+, C+/E-, C-/E+, and C-/E-) as the independent variables, what are the effects of the combinations of visual and aural expressivity conditions on the perception (ratings) of conducting performances?
5. How does perception of a conductor's performance change by adding the sound of an ensemble's performance?
6. To what extent are conducting expressivity conditions, ensemble expressivity conditions, paired expressivity conditions, presentation order, role, environment, gender, level of education, experience, and ensemble type predictors of conductor evaluations?

7. What is the relationship between conductor and ensemble expressivity ratings in matched and mismatched conditions (C+/E+, C-/E-)?

Before answering these primary questions, the researcher determined that addressing the following preliminary questions would help frame the data from the primary questions:

1. What effect does presentation order have on conductor and choir ratings, as measured by the summed scores for each expressive treatment condition?
2. Do participants rate conductors #1 and #2 similarly?
3. Do participants rate musical passages #1 and #2 similarly?
4. Do ratings confirm the intended effects of low- and high-expressivity conducting and minimally and maximally expressive choir conditions?

Definition of Terms

Expressivity. This previously undefined construct, used by a lineage of research, measured the perception of expression in musical performances. Merriam Webster defines “expressivity” as “the effective conveying of meaning or feeling” (Expressive, n.d.). Expressivity was defined for this study’s participants as “conveyed emotion in performance,” and in line with prior research, was intended to measure whatever that construct elicited in the mind of the participant. For some participants, the construct of expressivity may have included emotional response or the measurement of artistic, musical, or stylistic nuances or communications, as demonstrated in the reporting of the data.

Choral Expressivity Study. The *Choral Expressivity Study* served as the online survey instrument utilized for this study and consisted of common demographic and background questions, as well as different combinations of questions based on the presentation mode (choir-only, conductor-only, or conductor-choir) and presentation order (surveys 1A-5B).

Low- and High-Expressivity Conducting. Two contrasting conditions, as defined by Byo (1990) and Byo and Austin (1994), were used to create differing amounts of visually expressive information in the video stimuli presented in the study.

Matched and Mismatched Conditions. Contrasting expressivity conditions of conducting and ensemble were paired together to create a fully crossed treatment of visual and aural conditions. When low-expressivity conducting was paired with a minimally expressive choral performance or high-expressivity conducting with a maximally expressive choir, the paired treatment conditions were matched. If low-expressivity conducting was paired with a maximally expressive choir or high-expressivity conducting with a minimally expressive choir, the conditions were mismatched.

Minimally and Maximally Expressive Choir. Two contrasting conditions were used to create differing amounts of aurally expressive information in the audio portions of the study's video stimuli. Minimally expressive performances neutralized contrasts or variations in dynamics, articulations, tempo, phrasing, and timbre, while maximally expressive performances fully engaged these expressive elements in ways that the performing ensemble's conductor deemed appropriate to the style and the piece.

Because choral conductors may not have familiarity with terminology and jargon associated with quantitative and qualitative research, additional definitions and descriptions of some of these research terms are provided in Appendix A: Glossary of Terms for the Average Choral Conductor. Terms included in this glossary may aid the choral conductor to understand this research terminology that is not distinctly a part of, but used throughout, this study.

Limitations

This study utilized an online platform to collect data. The online platform, while allowing

for a wider target population, required deliberate control of elements that are assumed to be controlled in classroom environments (cf. prior research). Those in the target population who did not have access to high-speed Internet and the necessary computing instruments to access the online survey were not represented in this data. Additionally, because of the online platform, this study was unable to provide an on-site investigator or equal time controls across participants. However, the controls of self-reporting by participants and timing records of *PsychData* aided the researcher in retaining only valid and reliable data. Furthermore, not standardizing the time for response and not limiting the length of qualitative comments allowed the researcher to gather more detailed information regarding the construct of expressivity than classroom data collection can comfortably collect.

This study attempted to control for the visual expression of the ensemble by recording the backs of heads of performers while they sang. Only a few participants' qualitative comments suggested that part of their assessment could be accounted for by the movement of heads, interpreted as singer engagement and expression. However, many participants commented that it was difficult to assess expressivity of the singers without seeing their faces and body language. The researcher concluded that, in the absence of visual information directly from the choir, a few participants perceived the slightest shifting or movement by singers as expressive. This perception of movement as expressivity did not, in the opinion of the researcher, compromise the validity of the video stimuli or the reliability of the study's robust results.

The use of headphones was determined to be part of standardizing the experience of the participant during the survey process. The researcher did not explicitly ask whether or not participants complied with instructions to use headphones. However, reasonable attempts were made to encourage the use of headphones for all participants. First, participants were made aware

of the need for headphones at the very beginning of the survey. Again, prior to answering any introductory questions, participants were prompted to click “continue” once they had secured properly functioning headphones. Finally, prior to the aural assessment portions of the survey, participants were reminded of the need for their headphones and given the opportunity to set volume levels for the duration of the survey.

Because this study used a blend of convenience and snowball sampling, statistical inferences to the entire target population cannot be made. However, it is interesting to note how similar the findings of this study are to prior research, especially given this study’s much broader target population.

Delimitations

This study chose to examine the effects of contrasting conducting and choir expressivity conditions on perceptions of conductors and choirs and the construct of choral expressivity, as explained by participants in the context of the evaluation process. This study did not examine the conductor from the backside of the conductor (cf. Price and Mann, 2011), nor did it take into the account the visual aspects of the choir’s performance; rather, it limited the conductor’s expressivity to a front-view of the conductor and the choir’s expressivity to its aural performance. The current study also did not examine the direct effects of conducting on ensemble performance or of ensemble performance on conducting; rather the study looked at conducting and ensemble performance on the *perception* of each.

This study elicited participant assessments and comments from adults with some experience in a conducted music ensemble and resulted in a population consisting mostly of US participants. The methodology includes a fully crossed experimental design mixed with voluntary qualitative comments, which were examined for emergent themes toward a

phenomenological understanding of choral expressivity. This study did not attempt to understand what conducting textbooks say, rather to collect data that may or may not support the assertions made in current choral methods and conducting textbooks.

Assumptions

Participants were of the age of majority and had some experience or familiarity with the visual, nonverbal communication tools of conducting. Participants in this study volunteered their time, assessments, and comments without any type of compensation or other reward. Participants who chose to complete the study did so to the best of their knowledge, truthfully, and in a manner consistent with the integrity of the study.

Organization of the Dissertation

Chapter 1 includes the introduction, statement of the problem, need for the study, research questions, definitions, limitations, delimitations, and assumptions. Chapter 2 investigates prior research in ensemble expressivity and conducting with a focus on the interaction of the visual and aural elements at play in musical performance. Chapter 3 contains a detailed description of the online survey and data collection process, including the context and participants used for the study, the construction of all stimuli and various survey versions, and data collection and analysis procedures. Chapter 4 is a descriptive analysis and summary of the quantitative and qualitative data. Chapter 5 comprises a discussion of the findings, the implications of these findings, the resultant Model of Choral Expressivity, and recommendations for further research.

Chapter 2: Review of the Literature

Introduction and Overview

The purpose of this literature review is to situate the current research study in the greater context of a body of research that examines the relationship of conductor and ensemble. This chapter focuses on studies that are related directly to the visual and/or aural perception of conductor and music ensemble performance, with special attention given to those studies involving choirs. The primary divisions of this chapter center around the literature that examines conducting as a visual stimulus and ensemble as an aural stimulus. Then the review moves in the direction of examining the phenomenon of the effects of conductor and/or ensemble treatment conditions on the perception of the performance of one or both and narrows the focus to a line of research examining expressivity.

Because ensemble performances naturally involve a visual element (the conductor) and an audio element (the ensemble) that are both controllable in an experiment, it is logical to use conductor-ensemble performance to examine the phenomenon of the visual and aural modes of perception in music performance. Research studies that examined conducting may help shed light on perception, even if their intent was to measure actual performance in response to the conductor.

In the literature review section of her dissertation, Acklin (2009) provides a summation of experimental and descriptive research within the conducting field. Her second purpose was to use "best-evidence synthesis" meta-analytic techniques to examine the effect of conducting on ensemble performance. The summations she provided serve as an overview of and introduction into choral conducting research and this literature review. Acklin (pp. 101ff.) concluded that nonverbal conducting gestures indeed impact an ensemble's performance, reliant upon the

gestural vocabulary of the conductor, the experience of the ensemble, and musical preparedness of ensemble members. While research regarding the effectiveness of gesture on ensemble performance is continuing to develop, the impact of several aspects of conducting seem to have emerged from the literature.

First, regarding the effect of expressive versus non-expressive conducting on ensemble performance, her conclusion is that the results in the current body of literature are mixed (p. 81). "While some research suggested that expressive conducting only influences listener perceptions, other research indicated that specific conducting gestures do, in fact, shape the sound of an ensemble" (ix). It is important to note that ensemble members prefer expressive conducting over non-expressive, regardless of its actual effect on performance.

Additionally, specific conducting gestures may have either a positive or negative impact on the performance of an ensemble. For example, managed preparatory gestures have proven to be highly effective in choral entrances, releases, unity of breathing, and expressiveness. Other specific gestures may be used to cause an increase or decrease in vocal tension. Disapproving facial expressions combined with a stationary body may negatively impact ensemble performance.

Acklin also reports that the results comparing the effects of verbal and nonverbal methods of instruction on ensemble performance are mixed, it seems clear that teaching younger ensembles how to interpret conducting gestures may produce improved understanding of and performances in rhythm, phrasing, and other expressive elements and that the most successful rehearsal environments include conducting, verbal instruction, and modeling.

Finally, she suggests that the field of synchronization is beginning to reveal that musicians may perform best when they can both see the conductor and hear the ensemble and

that musicians with conducting experience seem to synchronize more easily than those without conducting experience (p. 85).

Conducting Studies and Perception of Conducting

A series of studies has measured the perception of conducting performance from a variety of perspectives. This portion of the literature review will first outline studies that measure the perception of conducting by way of influences or relationships of nonverbal or visual communication/information. At times, this nonverbal or visual communication is connected to conductor intent, while at other times, the study is merely measuring differences seen among conductors and, in some cases, other conditions. The second section will explore a body of literature that includes the visual and multi-modal presentation effects on the perception of conducting. The third section on conducting studies will briefly look at studies that attempt to examine the performance of conducting and move in the direction of empirical measurements of conductor. Finally, studies that examine the combination of aural and visual elements in the measurement of conducting will be considered.

Visual Effects on Conducting Perception. Byo (1990) examined the relationship of conductor intent and the perception of that intent by external observers. He investigated whether beginning conductors could be trained to exemplify contrasting conditions of intensity, and if outside observers could perceive the intended intensity of those beginning conductors in a variety of contexts and orders. Results yielded a 77% correct response rate to intended conductor intensity, indicating that intensity, as a conductor affect, is recognizable across multiple illustrations and diverse levels of musical experience. While graduate music majors were significantly more accurate than undergraduate music majors, non-majors, and high school students, there was no difference in the correct response rates among the latter three groups.

This study also revealed that perhaps context matters in the perception of a beginning conductor's intended intensity, especially for high-intensity conditions. High-intensity conditions were more than twice as likely to be incorrectly categorized than low-intensity conditions. Three primary contexts in which these errors occurred were reported. First, when at the beginning of a conducting segment and in the absence of a previous context with which to compare, high-intensity conditions may be harder to identify (33% error). In addition, when following a high-intensity conducting segment, a second high-intensity segment may appear to be comparatively lower in intensity and thus incorrectly perceived as low-intensity (33% error). Finally, when high-intensity intervals followed a low-intensity interval, 30% of the time the intensity condition was in error. While context was still important for low-intensity conditions, the error response rate was much lower.

Frederickson, Johnson, and Robinson (1998) also examined student conductors, specifically how the competence of student conductors would be perceived based on the variation of pre-conducting behaviors. Pre-conducting behaviors included approaching the stand and preparing materials on the stand; conducting behaviors included preparatory beat and one measure of conducted music. Both pre-conducting and conducting behaviors were paired together in different ways in a video to create multiple contextual scenarios for each variable. A variety of priming conducting conditions, from no pre-conducting to poor and excellent pre-conducting behaviors, were paired with a mixture of actual conducting behavior conditions, from none to poor to excellent. College music majors evaluated silent videos of conductor segments with various pairings of the pre-conducting and conducting behaviors on a Likert-type scale from 1 (poor) to 10 (excellent). Results indicate that poor pre-conducting behaviors had a negative effect on the perception of conductor competence while excellent pre-conducting behaviors had a

positive effect.

Silkebakken (1998) asked high school and college directors, average concertgoers, and college music majors and non-music majors to rate conducting effectiveness of a pool of six conductors, who had been previously categorized by an expert panel into groups of three for their levels of enhancing and detracting, for 15 different visual attributes. Results indicated that perceived conductor expressiveness was the most influential factor on ratings of conductor effectiveness.

It seems, then, that intended contrasts in conducting conditions are perceivable (Byo, 1990) and that contexts of conducting conditions (Byo, 1990) and pre-conducting behaviors (Frederickson et al., 1998) may influence how the visual art of conducting by student conductors may be perceived. It also seems that expressivity may be a construct that is most influential on a person's perception of conducting effectiveness. A series of three additional studies add to these general findings regarding beginning conductors by comparing conductors across experiences and/or education levels.

Byo and Austin (1994) devised and tested a systematic method by which to document the nonverbal behaviors of conductors in rehearsal across time. They used this method to compare the practices of pre-service teachers to those of accomplished university band conductors. The script consisted of four categories, including right arm/hand gestures, eye contact, facial expression, and body movement; left hand/arm gestures and cues were considered separately and were documented as well. Findings indicated that accomplished conductors achieved laudable success but used an infinite combination and balance of nonverbal paths to that success. While no specific standard or specific path for excellence for expert conductors emerged, the results exposed general nonverbal characteristics that separated experts from novices and suggest a

generalized "standard" for demonstrating maturity in conducting.

Among these generalities included an increased and holistic use of eye contact, expressive body movement, facial expression, left-hand cues, and left hand gestures. Experts tended to have significantly more of these general qualities than did novices, including eye contact; expressive use of body, face, and left hand; and cues. Additionally, it appeared that mature conductors often combined expressive qualities to create a multi-dimensional aspect of expressivity. According to Byo and Austin, this lack of multi-dimensionality in novices may have been a reflection on the rudimentary experiences of modern conducting pedagogy, focusing on the skills of the hands, while leaving the other nonverbal forms of expressive communication to chance.

Similar were the findings of Johnson, Frederickson, Achey, and Gentry (2003), who further clarified that student conductors tend to focus more on the right arm than do professionals and that the left arm and overall effect of body movement seemed to be most important in the perception of professional conductors. They compared student and professional conductors by systematically examining the relationships between five identified nonverbal elements of conducting--right arm/hand, left arm/hand, eye contact, facial expression, and body movement--and observers' overall perception of and the focus of attention during conducting performances. Group 1 evaluated overall conductor performance. Group 2 tracked their attention to one, two, or more of the identified nonverbal elements. Group 3 was divided into five subgroups, each of which was directed to evaluate only one of the five nonverbal elements on a positive/negative continuum throughout the conductor performance. They found that student conductors tended to communicate more with the right arm and that more observer attention was given to the student conductors' right arms, while the left arm and facial expression seemed to be more consequential

for professionals with more observer attention given to overall effect and body movement.

In an exploratory study, Bergee (2005) compared orchestral conductors: two novice, one “intermediate” (graduate student), and one expert. While each conductor led a university symphony orchestra in an excerpt from Brahms's Symphony No. 2, movement 1, they attempted to verbalize their thought processes. “Think aloud” protocols were recorded, transcribed, and categorized. Protocols, post-conducting interviews, and a second expert's critique revealed that this study's expert conductor formed a mental representation of the task, predicted future problems, and proposed future solutions. The expert's intuition subsumed the surface aspects that occupied virtually all of the novices' cognitive space, such that he was able to focus on deeper, more fundamental aspects. The intermediate conductor directed his attention to the ensemble, and as such, maintained command of the ensemble. The two novices focused their attention on surface aspects of conducting and their own actions. With little flexibility to attend to the needs of the orchestra and due to their lack of experience, they were overwhelmed with the task. He concludes his article with the following compelling call to action: "The challenge for orchestral conducting programs of study may be...to unite the disparate fields of teaching, conducting skills, music study, and reflective practice" (p. 34).

It is references, such as that of Bergee, to the needs for reform in music education and conducting pedagogy that motivate the current study. Additionally, the multi-dimensional aspect of conducting to which these studies refer (Bergee, 2005; Byo, 1990; Byo & Austin, 1994; Frederickson et al., 1988) combined with the emphasis of expressivity as an important factor in conductor perception (Silkebakken, 1998) provides the groundwork for this study's use of a general construct of contrasting conducting expressivity conditions (low vs. high). Another study (Wöllner, 2008) explored the construct of conducting expressivity by isolating various

components of nonverbal expressive communication—face, arms, and body. This study also introduced a body of literature that used different aural and/or visual presentation modes in the measures of conducting perception.

Visual & Multi-Modal Presentation Effects on Conducting Perception. Wöllner (2008) explored which part of the conductor's nonverbal communication contributes most to observers' decoding of conducting expressiveness. Additionally, the study examined differences among conductors by way of affective behavior and four expert conductor evaluations. This study used a multi-modal within-subjects design to examine the perception of conductors' body movements under different viewing conditions. Five conductors with multifarious levels of experience each conducted four excerpts from a Beethoven symphony that varied in musical expressiveness. Visual viewing conditions in the visual-only mode varied by occlusion: (1) face-only, (2) arms only, (3) whole body (simulated peripheral vision via reduced image sharpness); and in the audio-visual mode, visual stimuli showed the whole body without the blur.

In a music class lasting 65-80 minutes, participants, musically trained and untrained high school students, viewed 60 randomized video sequences (5 conductors, 4 musical excerpts, 3 experimental viewing conditions) without sound and 20 video sequences (5 conductors, 4 musical excerpts) with sound. For each of the formats (all 80 videos), participants were asked to evaluate the following on a 7-point Likert-type scale:

- general expressiveness of the video sequence,
- subjectively perceived amount of information of the video sequence,
- arousal present in the conductor's movements, and
- valence of the communicated emotions (p. 254).

Additionally, in the audio-visual format (20 video sequence), participants indicated the following:

- their preference or degree of like-ability of the conductor,
- how experienced they thought the conductor was, and
- the extent of their desire to perform with this conductor again.

Independently, four expert conductors evaluated the audio-visual video sequences (20 videos) on items of general expressiveness, facial expression, and gestural communication.

Primary findings revealed that the directions of ratings between visual-only and audio-visual ratings were equal, indicating that the visual elements being communicated and interpreted were evident with or without the presence of accompanying audio. In addition, the analysis demonstrated clearly for all conductors that intended expressiveness was mainly perceived through facial affective behavior; moreover, conductors who achieved higher evaluations of facial expression by expert conductors were also the most preferred by high school participant observers. Another finding of significance is that the conductors' arms communicated significantly more information than did their face or whole body.

Empirical Investigations of Conducting. Wöllner and Auhagen (2008) began to bridge the gap between perception and actual measurable differences in conducting. They investigated similarities and differences in orchestral players' perception of conductor's movements from three different visual perspectives with a multimodal, repeated-measures design and then correlated their continuous responses with motion quantity measured in the actual movements of conducting. Specifically, participants viewed conductors from frontal, left-hand, and right-hand perspectives under aural and/or visual experimental conditions. Under all three modal conditions, participants used Continuous Response Digital Interface (CRDI) to evaluate

expressivity with anchors of “no expression,” “neutral,” and “very expressive.” Additionally, after each of the videos in the visual-only and audio-visual conditions, participants rated on a 7-point scale each video regarding the following:

- amount of perceived information,
- level of arousal in the movements,
- conveyed emotions from negative to positive (valence),
- ability to communicate expressively,
- facial expressions,
- rhythmical clarity of movements, and
- charisma.

Results indicated that watching the conductor from the front and left-hand side (perspectives of woodwinds and violins, respectively) was perceptually more informative than from the right-hand side (perspectives of the celli/double basses).

The findings revealed that large and quick movements are not necessarily associated with expressive sonic moments and that musicians need time to respond to some of the more nuanced aspects of conductor movements, stressing the importance of advance notice in the nonverbal communication process. In this study, they found that there was much variation between these five young conductors and that affective intent in facial expression seemed to be consistently the significant factor across conductors. Observers gained specific information about the conductor’s intentions of expression even in the visual-only conditions, again confirming that intentions of conductors can be perceived without sound. They conclude that further work examining expressivity in conducting is needed.

Empirical investigations into the fundamentals of conducting exceed descriptions and

perceptions of single conductors and may allow the findings of these studies to be more generalizable (Wöllner & Auhagen, 2008, p. 129). While Grady (2014a, 2014b, and 2014c) primarily measured particular aspects of performance of ensemble (intonation and timbre) and secondarily the perception of conductor and ensemble, her research also measured conducting for its effectual differences in location laterally and horizontally and its measurable distance from specific points (above shoulders or beyond the torso). Outside of these studies, the majority of research measuring conducting performance remains exclusively in the field of perception of performance.

Aural Effects on Conducting Perception. While the aforementioned studies noted differences in the perception of a conductor by way of conducting intent and differences in other visual elements, a few studies began to examine the sound of an ensemble on the perception of the conductor. These studies have examined how changes in an ensemble's performance may be perceived and how that may relate to how a conductor is perceived. In 2007, Madsen, Geringer, and Wagner speculated that, if conductors have a direct effect on the sound of the ensemble, a single orchestra playing a single piece, under different conductors with extremely contrasting nonverbal communication styles, would result in significant changes in perception of sound (and by extension, different conductors). Representing an 18-year lineage of conductors, Madsen et al. spliced together recordings of conductors Willi Boskovsky, Herbert Von Karajan, Carlos Kleiber, Zubin Mehta, and Claudio Abbado directing the Vienna Philharmonic Orchestra performing Johann Strauss's *Blue Danube Waltz*. The result was a continuous performance in five sections, each by a different conductor. The stimulus for this study was also used in a subsequent study (Madsen, Geringer, & Madsen, 2009) involving dedicated string musicians in grades 7 through 12 as participants. The results across the two studies were similar and

surprising. In the audio-only conditions, not a single observer, neither college musician nor adolescent string player, perceived a change in ensemble sound or conductor.

Bender and Hancock (2010) and Silvey (2011) varied ensemble performance quality and noted differences in perceived conductor effectiveness. Silvey added to and began to clarify the work of Madsen et al. (2007, 2009) in examining the realm of audio mode and conductor relationships and found that ensemble performance quality had a significant effect on conductor expressivity evaluation in an audio-visual presentation format, although the effect size was small. By investigating how identical conducting performances would be evaluated on the basis of excellent or poor ensemble performances, this design reversed the processes of other existing studies that examined the effect of conductor expressivity on the perception of identical audio performances, deemed moderately expressive (Morrison, Price, Geiger, & Cornacchio, 2009; Price & Mann, 2011). Silvey copied videos of two expressive conductor performances to create four total videos of 2 identical conducting performances. He then overdubbed and synchronized those four conducting videos with four audio stimuli, comprised of two musical passages, each performed under different conditions of quality (poor and excellent). Participants (college music ensemble members) viewed each conductor's identical performance twice, once accompanied by a low-quality wind-ensemble performance and then again by a high-quality ensemble performance. They rated both ensemble and conductor and provided brief comments regarding the video.

Cross-Modal Effects in Conducting Perception. Bender and Hancock (2010) examined the effect of both conductor intensity (high/low gestural intensity) and ensemble performance quality (high/low) on conductor effectiveness ratings from 1 (not at all effective) to 5 (completely effective) and found that conductors are generally rated more highly when paired

with an ensemble performing with high quality. Participants (college instrumental music majors) evaluated conductors who performed under low-intensity and high-intensity conditions, both of which were overdubbed onto and synchronized with recordings of both poor and professional recordings of the same piece. Their findings demonstrate that effectiveness ratings of high-intensity conductors were significantly impacted by the performance quality, while low-intensity conductor ratings were not significantly impacted by the ensemble's performance. Implications are that high-intensity conducting may be positively or negatively impacted by an excellent or poor ensemble performance.

In their discussion, Bender and Hancock (2010) indicate that the body of research for conductor effects on ensembles is larger than that of ensemble effects on conductor and calls for more research regarding the relationship of ensemble quality and perceived conductor performance. The current study answers this call and accounts for the researchers' recommendations that future research "vary the order of presentation for the high and low quality performances" (p. 19).

Implications for conducting pedagogy and conducting competitions (cf. Bender & Hancock, 2010) with regards to ensemble effects on perception of conductors are profound. Understanding that an ensemble's performance may influence the way a conductor is evaluated is fundamental to accurately assessing developmental needs within an individual conductor's own progress and to discern judiciously differences among conductors of ensembles with varying differences in quality. Ensembles may change from day to day, and as they do, their quality may influence a teacher's perceptions of her conducting students or an adjudicators' perceptions of conductor competitors.

Ensemble Perception

Aural Effects on Ensemble Perception. Some studies have examined how people perceive an aural musical performance. Brittin and Duke (1997) compared continuous and summative response to perceptions of musical intensity among music and nonmusic majors. Summative responses for both groups were higher. However, the internal consistency of both measurements suggests that the research questions should dictate the choice of measurement.

Geringer and Johnson (2007) tested duration effects on the perception of high school, college, and professional band performances. They found that medium (25 seconds) and long (50 second) excerpts were rated higher for college and professional performances, but lower for high school performances, than were shorter excerpts (12 seconds). They also discovered that in lower quality performances, problems with intonation were commonly addressed and that musical expression seemed to dominate descriptions of professional performances.

Empirical Investigations of Ensembles. The degree to which conductor expressivity or gesture affects the sound or performance of an ensemble is unclear (Acklin, 2009), primarily because most of the research that has been done measures performance by way of perception (e.g., expressivity, quality, effectiveness, tension). Acklin (2009) acknowledges that perhaps the field is in its infancy and needs time to mature in its understanding of the conducting and ensemble relationship. Perhaps the small body of literature that has begun to emerge and examines empirically the relationship of conductor and ensemble is a part of that growing process.

Two important studies explored the matching of gesture and sound in the human voice and suggest not only a cross-modal mapping in conducting and ensemble performance, but also “a strong coupling of motor and perceptual processes, where the motor system influences the

perceptual interpretation of dynamic visual stimuli” (Erdemir, Bingham, Beck, & Rieser, 2012, p. 286). The first study (Erdemir, Bingham, et al., 2012) found that there was a systematic relationship between four specific hand gestures—flick, punch, float, and glide (borrowed from LMA Effort Actions)—conducted by an expert conductor and accompanying vocal sounds (syllable /dah/) produced by adults with or without musical background. An independent panel of judges was tasked with identifying which of the four conducting gestures were used in the audio-only conditions. Additionally, the sound files were analyzed for their acoustic features normally associated with conducting movement, including duration (ms), amplitude (dB), fundamental frequency (Hz), pitch variability (Hz), and formant frequencies (F1, F2, and F3). The independent panel of judges was able to categorize the conducting gesture by only the speakers’ responsive sounds with high degrees of accuracy, even among those subjects with no musical background (84% accuracy). Most errors occurred when trying to distinguish between a flick and a punch or a float and a glide, which have similar kinematic features.

Acoustic measures revealed many connections of contrasting sounds to contrasts in conducting gestures, categorized by weight and movement. Sudden gestures yielded shorter responses, while sustained gestures elicited longer responses. Light gestures resulted in softer and stronger gestures in louder sounds. Direct gestures elicited lower fundamental frequencies, while indirect gestures aroused higher fundamentals. Vowel formants were also influenced by sudden versus sustained gestures. These findings imply a definable cross-modal relationship between conducting gesture and sound and a process whereby the kinematic patterns of movement are automatically translated into predictable auditory responses. This process suggests a pairing between motor and perceptual interpretation of visual stimuli.

The second study (Erdemir, Erdemir, Bingham, Beck, & Rieser, 2012) correlated the

velocity and motion of four kinematic hand gestures—flick, punches, floats, and guides (again, borrowed from LMA Effort Actions)—and the amplitude of the consequent sound, produced by individuals—some musicians and some not—speaking on a neutral syllable (/dah/). Further analyses demonstrated the beginnings of the measurements for articulation; faster initial speed caused louder responses, such that flicks/punches and floats/glides were discernable by their initial velocity. This study quantified both conductor and vocal sounds computationally. Erdemir, Erdemir, et al. imply that perhaps the mapping of kinematic motion in conducting triggers mental motor representations in the mind of the ensemble that translate easily into auditory sounds with similar shapes. The researchers “hypothesize that this association is mediated through the motor system and/or so-called mirror neurons in the brain” (p. 287).

More recently research that empirically connects measures of conductor gesture to measures of an entire ensemble’s performed response has opened a new world of possibilities. Grady (2014a) examined the effect of lateral and vertical gestures on acoustical measures of intonation and timbre and found that vertical gestures influenced both aspects of choral sound. In addition, singers were more positive about their performance under vertical gestures, and their perception seemed congruent with the associated acoustical measures of better intonation and increased overtones in the choir’s performance.

Grady (2014c) investigated the effects of vertical gestural plane (height of gesture, above and below shoulder height), lateral gestural plane (width of gesture, within or beyond the torso area), hand shape (bend of fingers, space between fingers, palm direction), and emotional face expression (happy, neutral, angry) on Long Term Average Spectra (LTAS) data, pitch analyses, and singer questionnaires. Three college choirs of 61 singers performed for 10 videotaped conductors. Both chorister perceptual and acoustic measures were significantly affected by

conductor-specific, and sometimes gesture-specific, treatments. Grady's research suggests that a higher spectral energy seems to be associated with in-tune singing and that both seem to be connected to vertical and horizontal gestures that lie predominantly within the frame of the conductor's torso. In other words, conducting within the main torso frame may solicit higher spectral energy and better intonation in singers.

Conductors on Ensemble Perception. As alluded to by Acklin (2009), it has not always been clear in the research literature that conductors have a significant effect on the performance of an ensemble. It would be reasonable to assume that, if conductors have an effect on an ensemble's performance, the difference in conductor would be noticed. However, in a series of two studies (Madsen et al., 2007, 2009), not a single musician recognized a change in sound or conductor across 18 years and 5 conductors conducting the same piece. It would also be reasonable to assume that the presence or absence of a conductor would result in different performance scores. Hawkins (1991) found no significant difference in audio recording performances of 19 high school choirs of varying abilities singing with and without a conductor. Price & Winter (1991) found that, while 8th-grade band members preferred expressive over strict conducting, their performance quality was not significantly different between the two conditions.

Frederickson (1994) wanted to know if adding a conducting stimulus would alter the measurements of aesthetic and emotional responses in the studies of Madsen, Brittin, & Capperella-Sheldon (1993) and Adams (1994), which used only audio stimuli. Using CRDI, he measured the perception of musical tension among 30 graduate music students and faculty while listening to a band recording, a portion (the treatment group) of whom also watched a synchronized conducting and ensemble performance. There was no overall significant difference between the measurements of the control and treatment groups; however, in particularly extreme

moments, the treatment grouped rated higher and lower.

Even a change in the performance of dynamics may be most effective by way of verbal instructions, less so by way of markings in the score and conductor gesture. Skadsem (1997) examined the effects of verbal instruction, dynamic markings in the score, and conducting gestures on singers' dynamic responses. Results suggested that conducting gestures had the least impact on dynamic change and verbal instruction the highest.

Similar to the findings of Frederickson (1994), a series of studies (Price & Chang, 2001, 2005; Price, 2006) found that conductor expression did not predict ensemble performances in the context of state festival competitions. Despite the collectively convincing nature of the series of studies, Price and Chang recognized the limitations and were puzzled. Price (2006) acknowledged, "There may have been numerous extra-musical factors that influenced ratings, such as time of day, school size, and performance medium" (p. 211; see also Bergee & McWhirter, 2005). Since Napoles (2009) later found that the use of a score by an outside observer (such as an adjudicator) may positively impact ratings of choral performances, her research offers another possible confounding variable to Price's discussion of ensemble festival adjudications. Frederickson (1994) stated that future research could benefit by being more extensive, having more subjects and stimuli, and including additional populations (p. 225). Price and Winter (1991) acknowledged that 8th graders have limitations, and their research study does not indicate that the notes and rhythms were prepared ahead of time, which is in contrast with other studies that produced contradictory results among high-school-level musicians and above (Laib, 1993; Sidoti, 1990; Fuelberth 2003). Finally, Price (2006) states explicitly that "even in light of these and other data, I am unwilling to discount the importance of conducting" (p. 212) and further suggests that expressive conducting may influence the perception of performance

more than the performance quality itself.

Expressivity in Conductors & Ensembles

While the effects and/or the nature of the effects of conductors on ensemble performance are still unclear, it appears that expressive conducting has positive effects on performance perception. A series of studies examines the effect of gesture on individual performance; these studies imply that conducting may or may not have an effect on actual performance, since they still measure perception by way of panel ratings by experts.

Expressive Conducting and Gesture on Performance. Sidoti (1990) examined expressivity through the lenses of articulation, dynamics, and time. He asked advanced high school band students to prepare four melodic exercises devoid of expression markings prior to the experiment. During the treatment, the students received the same musical examples with the addition of eight expressive markings and were asked to perform the examples while watching a conductor on videotape. The expressive markings included the following: (1) staccato, (2) marcato, (3) legato, (4) crescendo, (5) decrescendo, (6) accelerando, (7) ritardando, and (8) fermata. In one condition, the conductor used neutral conducting gestures; in the other condition, the conductor used expressive left hand gestures coordinating with the score's expression markings. The expressive conducting condition resulted in significantly higher performance scores, as per the perceptions of the evaluators. This reveals that expressive conducting aligned with the musical intent of composer (and ideally the performer) perhaps produces a better performance than non-expressive conducting. However, it is not clear according to this study whether it is the level of conducting expressivity or the alignment of expressive intent among conductor, composer, and performer that have an effect on the performance score.

House (1998) also found similar effects of conductor expressivity on music performance

among advanced trumpet players. An expert panel gave advanced trumpet players performing an etude under expressive conducting significantly higher scores than those performing under non-expressive conducting. Both the judges and performers preferred the expressive conducting. In addition, there were no statistical interactions between conducting condition and presentation order, and the order of expressive/non-expressive conducting did not influence perception of the contrasting conditions or performers and judges' preferences.

Additional studies using individuals attempted to focus on effects of conducting on choral performance by examining responses in the human voice, capable of expression, particularly with regard to vocal tension. Fuelberth (2003) examined the effects of six specific left-hand gestures on the perception of inappropriate vocal tension in individual singers. By defining inappropriate vocal tension as the audible or visible presence of tension in the vocal mechanism, as seen by muscular tension in the face, neck, jaw, shoulders, arms, hands, torsos, and legs and as heard by characteristics such as pitch fluctuation, difficulty of production in extreme registers, and a harsh tone quality, this study measured the perception of a construct of vocal tension. Without measuring vocal tension empirically, this rubric, based on previous research and pedagogical literature, was fairly close to performance on the continuum of measurements between perception and performance. The implications for this research are that specific left-hand gestures may affect the perceived expressive tension in individual voices.

In Fuelberth's study, individual singing participants (undergraduate and graduate conductors, college and high-school choral singers) prepared and memorized a 10-measure excerpt. While viewing six left-hand gestural conducting conditions with neutral facial expression, the participants sang these 10 bars. The left-hand gestural conditions included the following: (1) no change, (2) fist ed gesture, (3) palm up (4) palm down (5) stabbing gesture, and

(6) sideways phrase-shaping gesture. A 3-person panel of choral conductors rated the control measures (mm. 1-4) and the experimental measures (mm. 5-10) on an anchored Likert-type scale from 1 (minimum inappropriate vocal tension) to 10 (maximum inappropriate vocal tension). For each rating of 5 or higher, the judges were asked to indicate a reason for their rating.

Preliminary analyses indicated no differences among ratings by category of singer participant scores or between ratings by gender. According to the expert panel's evaluations, the only left-hand gestural condition with no significant effect on inappropriate vocal tension was the palm down condition, with the fist and stabbing gestures generating the most inappropriate vocal tension. In order to investigate the possible relationship of inappropriate vocal tension and melodic structure, a post-hoc CRDI test for real-time tension, completed by the researcher and another investigator, revealed that there was a considerable increase in the experimental measures for the fist, stabbing, and palm up gestural conditions, confirming the importance of these gestures in creating vocal tension. The panel indicated that harsh tone quality was the most audible reason for highly inappropriate vocal tension ratings. According to this study, it may be that certain gestures can alleviate vocal tension in extreme registers, that certain nonverbal gestures may incite a harsh tone, and that the conductor may rehearse more effectively and thus, retain singers longer, by taking heed to these findings.

Sidoti (1990), House (1998), and Fuelberth (2003) examined the influence of nonverbal expressive conducting on perceptions of responses by individual performers, assuming the direct application to an ensemble of performers. Other researchers have examined conductor influences in the context of complete band and choral performances. Laib (1993) qualified the effect of conducting expressivity on ensemble performances by suggesting that the extent to which an ensemble is able to respond to conducting gestures depends on the ensemble's skill level.

Performances of upper level bands (grades five/six and university) performed better under expressive conditions, but there was no effect of conducting on grades 3 and 4. Independent of the presence or absence of effect of conductor expressivity on performance, ensemble members strongly preferred the expressive conducting treatment. Nonetheless, expressive conducting did influence judges' perceptions of performances by more advanced players.

Visual Stimuli and Perceived Emotion. In contrast to the findings of Frederickson (1994), who measured the perception of musical tension, Krudop (2003) found that expressive conducting might positively influence the emotional performance of an ensemble once the basic technical demands of the music are mastered. A panel of expert judges rated eight university, high school, and community choirs for their general and specific emotional responses and found that when the notes and rhythms were mastered, the conductor's use of expressive gestures elicited "a higher level of emotionally expressive response from ensembles" (p. 261). According to Krudop, perhaps it is this emotional content that results in the perception of more effective ensembles (cf. Price, 2006).

Emotional content seems to be among many of the variables involved in the nonverbal communication process between conductor and ensemble and conductor to audience. Van Weelden (2002) examined a number of perceptions regarding conductor and conducting for their relationships to the perception of ensemble performance. Van Weelden accounted for the perception of six conductors with regards to body type and nonverbal communication factors and their effects on aggregate ensemble ratings. After each of six performances, in which participants (college music majors) sang in a laboratory choir conducted by a videotape of six expert female conductors of two different body types (3 endomorphic, 3 ectomorphic), ensemble participants evaluated their perception of both ensemble and conductor performance. Ensemble participants

rated (on a scale of 1 to 5) their experience of the visual appearance (including facial expression, eye contact, and posture), confidence in, and overall effectiveness of each of the conductors. In addition, singer participants similarly evaluated the choir's performance for intonation; tone quality; attacks and releases; phrasing; dynamics; balance and blend; and diction.

Among the findings of this study, no significant differences were found between the ratings by instrumental and choral, nor male and female, participants or between participant singers' ratings of endomorphic and ectomorphic female conductors. However, the presentation order did influence ratings; profiles of those presentation orders were not reported. Moreover, for each of the conductor ratings (3 visual appearance factors, confidence in the conductor, and overall effectiveness), there was a significant effect of the six different conductors on participant singers' perception of those conductors. It is interesting that the rank of conductors 2, 4, 5, and 6 (rank of 3, 6, 2, and 1, respectively) held consistent across all five conductor factors, while conductors 1 and 3 traded the rank of 4 and 5, dependent on the individual factor.

Van Weelden found moderate to moderately strong relationships of singers' perceptions of confidence in the conductor, conductor facial expression, conductor posture, and overall conductor effectiveness to singers' perception of ensemble performance, confidence in the conductor, and overall effectiveness of the conductor. However, eye contact did not seem to correlate to the singers' perception of ensemble performance, confidence in the conductor, or overall conductor effectiveness. Moderate relationships between posture and conductor effectiveness ratings were found. A similar relationship noted between facial expression and conductor effectiveness evaluations, but no correlation between eye contact and conductor effectiveness (perhaps due to the use of a video-recorded conductor).

Silvey (2013) found that emotion in facial expression affected ensemble expressivity

ratings. Participants listened to three professional wind ensemble recordings while watching the actors' facial expressions and assessed the ensemble's expressivity on a 10-point scale.

Approving facial expressions yielded significantly higher ratings than either neutral or disapproving facial expressions. The results also indicated that neutral facial expressions (or an absence of expression) produced the lowest expressivity evaluations.

It seems that musical preparedness (cf. Sidoti, 1990; Krudop, 2003) and/or having advanced ensemble performers (cf. House, 1998) might be necessary for the expressivity of a conductor to be able to improve an ensemble's actual or perceived performance and that conveying of emotion is central to the relationships among conductor, ensemble and audience in the performance of ensemble music (Van Weelden, 2002; Silvey, 2013).

Visual and Aural Factors on Perceived Ensemble Expressivity. Other factors, visual and aural, have been shown to influence the perception of an ensemble's expressivity in performance. Peddell (2008) asked graduate music students to assess the expressivity of a band's performance from five observational perspectives and across visual-only, audio-only, and audio-visual presentation formats. Peddell found that conductor behavior and the various presentation formats contributed most significantly to their ratings and that graduate music students commented more frequently on the visual stimulus (conductor) than on the aural stimulus (the band's performance). The visual mode seemed to dominate graduate music students' perception of the musical performance.

Madsen (2009) also reported the dominance of the visual: "The comment data suggest that when the aural information was paired with the visual information, participants seemed to focus their attention more on what they saw than on what they heard" (p. 56). Madsen tested for differences in conducting and choir evaluations among two performance excerpts; different

performances by the conductor and ensemble; audio-only, visual-only, and audio-visual presentation modes; and Argentinian and US musicians. Surprisingly, no significant differences were found among ratings by presentation mode or culture. Another interesting discovery was that, even though equal amounts of good and bad conducting were present in every excerpt, mean ratings were quite low for conductors; evaluators tended to be more forgiving of the choir.

Extending the research of Price and Mann (2011) and Silkebakken (1988), Napoles (2012) used choral ensembles to examine whether or not different presentation modes (aural, video from front, video from rear) impact high-school choristers' ratings of expressive choral performances and whether or not expressively and non-expressively conducted performances would be perceived differently across the three presentation modes. Napoles found significant differences in the audio-only and front-view videos of the conductors in ratings of tone quality and overall impression. Additionally, the study revealed that all performance measurements were rated significantly higher under the expressive condition than under the strict conducting condition, and that the highest ratings in the strict conducting condition occurred in the audio-only and rear-view presentation formats.

Effect of Conductor on Ensemble Expressivity. Recently research has examined specifically the effect of the conductor on the perception of the ensemble, using expressivity as the lens for assessment of both conductor and ensemble. Morrison et al. (2009) tested whether or not low- and high-expressivity conducting conditions would impact university music students' perception of identical ensemble performances. Using two one-minute expressive performance excerpts of Percy Grainger's *Walking Tune* as the aural stimuli, they overdubbed two conductors each conducting under low- and high-expressivity to create a total of four videos. Participants viewed all four stimuli and assessed the ensemble's expressivity on a 10-point Likert-type scale;

half the participants also similarly rated the conductor's expressivity for each video stimulus, while the other half were prompted for one free-response comment regarding the conductor. These activities ensured that participants indeed watched the conductor.

They found that identical ensemble performances were rated higher under high-expressivity conductors than under low-expressivity conductors, with a strong effect size and significant moderate correlation between conductor and ensemble ratings. Participants who were prompted for free-response comments were more extreme in their evaluations than those who only used the two scales for assessment. They reported, "Although high-expressive conducting resulted in more positive evaluations of the ensemble performance, it is not possible to state definitively that the expressive conducting elevated the listeners' evaluations. It is equally possible that the low-expressive conducting damaged an otherwise positive assessment" (pp. 45-46). They also suggested that future research should examine this phenomenon from other vantage points of the conductor. Pertinent to the current study, Morrison et al. called for research examining the interactive effects of performance and conductor qualities.

In a subsequent study, Price and Mann (2011) used seven conductors and two vantage points (front and back) of a single wind-ensemble performance. They asked undergraduate music and music education majors to rate the quality of the conductor and ensemble's performances on a Likert-type scale from 1 (poor) to 10 (high) and to provide written suggestions for each stimulus. Participant comments were focused on expressivity, even though they were rating quality. In addition, when commenting on the ensemble, the majority of comments mentioned following the conductor, providing further evidence beyond the qualitative data that the conductor influenced the perceptions of the ensemble's performance.

They found some differences between the front and back perspectives, but the effect of

these different perspectives on the perception of the ensemble's performance was not large. They found that different conductors significantly affected performance evaluations, conductors accounting for 30% of the variability of performance evaluations. In other words, the visual stimulus gave the illusion that identical aural performances were actually different. They reiterated that a conductor might improve or detract from an audience's performance experience and called for a need of differentiating between exclusively sonic experiences (recordings) and audio-visual performances (live performance). They called for more research that explores which elements of the conductor might be influential.

Morrison and Selvey (2014) contributed to this line of research studies examining the effects of contrasting conductor expressivity on identical ensemble performance evaluations. They tested for similar results among younger and less experienced music students (middle and high school) for choral performance stimuli across audio-only and audio-visual presentation modes. Similar to Morrison et al. (2009), they overdubbed two conductors under low- and high-expressivity conditions onto two expressive choral performance excerpts for a total of four video stimuli. Participants rated both conductor and choir expressivity on a Likert-type scale from 1 (*low*) to 10 (*high*) for expressivity.

Morrison and Selvey (2014) confirmed a significant effect of conducting condition, even among the perceptions of younger, less experienced music students and when using choral performance stimuli. Additionally, they found a significant difference among ensemble evaluations in the audio-only and the low-expressivity audio-visual presentation formats, indicating that lower expressive conducting negatively impacted the perception of an otherwise moderately expressive performance. This study found no significant difference between choral evaluations in the audio-only and high-expressivity audio-visual presentation formats.

Speculating that the incongruence between visual and aural information may interfere with the evaluation, they indicated that “further research may investigate whether expressive conducting may have a greater positive effects—and perhaps inexpressive conducting have less of a negative impact—on poorer performances” (p. 15)

To examine whether greater specificity in the relationship between gesture and musical performance might result in a deeper understanding of observers’ perception of musical performances, Morrison et al. (2014) incorporated articulation and dynamics into a modified design in line with the expressivity research. They selected four 30-second string quartet excerpts, two of high dynamic and two of high articulatory contrast. They recorded each excerpt twice to create a minimally (E-) and maximally (E+) expressive version, for a total of eight audio recordings, such that the target expressive characteristic (articulation, dynamics) was minimized or maximized and all other performance variables (including tempo) were consistent between the two performances of the same excerpt. They also recorded four conductors and the ensemble players performing at a low (C-) and high (C+) level of expressivity toward the target expressive condition (articulation, dynamics) in synch to the four audio recordings. They paired the contrasting conductor and ensemble conditions, such that they created fully crossed conductor-ensemble performance conditions (C+/E+, C+/E-, C-/E+, C-/E-).

Undergraduate music majors and non-majors enrolled in music courses were given 8 seconds between 16 excerpts to rate the ensemble’s performance on a Likert-type scale from 1 (poor) to 10 (excellent) for five qualities: articulation, dynamics, expressivity, performance tempo, and ensemble technique. The last two qualities were added to obscure the emphasis on the target characteristics. The results demonstrated that perception of both target characteristics (articulation and dynamics) correlated strongly and positively with perception of overall

ensemble expressivity. As with prior research, they found that regardless of the ensemble's performance quality, participants gave higher ratings to the ensemble when accompanied by a more expressive conducting condition. In other words, the study revealed a significant main effect for paired expressivity conditions on the perception of ensemble performances. However, individual comparisons demonstrated no significant difference between mismatched paired expressivity conditions (between C+/E- and C-/E+), indicating that in these stimuli, a maximally expressive conductor made a minimally expressive ensemble sound relatively the same as the maximally expressive ensemble accompanied by a minimally expressive conductor.

Chapter Summary

This chapter reviewed current literature regarding the visual and aural modes of perception in ensemble performance, with the focus trending toward the construct of expressivity. Previous studies have demonstrated a clear effect and predominance of the visual mode in the perception of ensemble performances. Other studies have found some effect of ensemble performance on perception of conductor performance. Only two studies have fully crossed contrasting conducting and ensemble performance conditions (cf. Morrison et al., 2014; Bender & Hancock, 2010); however, none of these studies has fully crossed these conditions while examining their effects on both perception of conductor and ensemble.

Some of the literature has solicited participants for single-comment responses to videos. By soliciting open-ended responses to each of the video stimuli and asking a final question regarding participants' overall view of choral expressivity, the researcher sought to confirm prior findings, to gain new insights into how participants evaluate conductor and choir expressivity, and to use these replies in a phenomenological inquiry into the construct of choral expressivity.

In addition, this study simultaneously examined the effects and interactions of conductor

and choir expressivity conditions on the perception of both conductor and choir performance. By using an online survey platform, this study hoped to engage a larger portion of the target population (ensemble members) and to compare findings of this sample population to those sample pools of prior research—secondary and college student participants.

Chapter 3: Methodology

Introduction

The first two chapters of this study create a framework concerning this study's importance and the prior research that led to the conception and design of the study. As stated earlier, making and assessing music is often assumed to be exclusively or primarily an auditory process; however, research indicates that the addition of visual material impacts aural perception and sometimes vice versa. In the performance of conducting, an exclusively visual field with movements associated with and/or connected to sound, the simultaneous performance of the ensemble creates an ideal environment for researchers to examine the interaction of the aural and visual modes in the perception of musical performance.

Exploring the effects of visual perception on aural perception and of aural perception on visual perception has been of recent interest to music performers and particularly to music educators and conductors. Previous research has found that the level of expressivity demonstrated by an ensemble conductor has a significant impact on how listeners evaluate an ensemble performance. Specifically, expressive performances that feature a highly expressive conductor are evaluated as more expressive than those featuring a conductor showing a low level of expressivity even when the performances are otherwise identical. These studies have used both instrumental and choral performing forces.

More recent research has also shown that the level of specific components (dynamics and articulation) of the construct of expressivity by a conductor has a significant impact on how listeners evaluate both in the absence or presence of those components. When expressivity conditions between conductor and ensemble are mismatching, the results of the impact tend toward the center. For example, when a conductor demonstrates low-expressivity components,

despite the high presence of those components in the ensemble's performance, the ratings for that performance trend downward, while ratings for a conductor demonstrating high levels of expressive components, despite the lack of those components in the ensemble's performance, trend upward. This research has used only instrumental performing forces, not choirs. Recent research has also shown that the quality of an aural performance has an effect on the perception of the conductor's performance.

This study extended this most recent research by using choral performing forces, instead of instrumental, and by using only generally contrasting expressivity conditions for both choir and conductor, rather than specific components of expressivity. Additionally, previous research in the field has used primarily middle school, high school, and college musicians and non-musicians; this study broadened the sample to include adults from the general population who have some experience in a conducted music ensemble. Finally, this study was among the first of its kind to use an online platform.

There were four primary quantitative purposes for the current study. First, the researcher proposed a fully crossed experimental exploration of the effects of conducting expressivity conditions (low vs. high) and choir expressivity conditions (minimal vs. maximal) on the perception of choral and conductor expressivity, using identical musical passages and identical conducting conditions for comparison. Additionally, the researcher sought to understand how choir and conductor ratings would compare across presentation modes (single vs. dual). Third, the researcher tested for correlations of conductor and choir scores in each of the paired expressivity conditions. Finally, the researcher wanted to understand the predictive contributions of various collected factors on conductor and choir expressivity assessment scores.

The purpose of collecting qualitative comments was a phenomenological inquiry of the

“essence of the experience” (Creswell, 2007, p. 58) of participants while they were assessing and of their perception of the construct of expressivity in conductor and ensemble performance. This qualitative approach was used to account for themes that emerged as a means of comparison to prior research and to mine the data for explanations of the quantitative results. As a means of extending prior research, this study also purposed to allow emergent ideas of the construct of the choral expressivity to illuminate how people might differ in their evaluation processes of conductor and choir expressivity.

Context and Participants

The *Choral Expressivity Study* was submitted to the University of Washington Human Subjects Division for Institutional Review Board (IRB) approval on July 1, 2014 and was accepted on August 7, 2014. After receiving IRB approval, participants were recruited by way of a combination of convenience sampling and snowball sampling, using email, social media, and personal contact. Initial contact was made with multiple national choral and instrumental organizations, primarily through email and Facebook communications in the way of letters. Additionally, emails were sent to individual ensembles. The researcher also used a database of college and university choral directors to announce the *Choral Expressivity Study* to college choral programs. The researcher posted in online advertisements and social media groups, such as Craigslist, ChoralNet, and the Facebook groups of multiple symphonies and secondary school programs. In addition, the researcher utilized his personal musical network to recruit potential participants via email and social media. Throughout the recruitment process, the researcher requested help with the recruitment process by inviting people to share the study freely. For samples of the types of recruitment activity in which the researcher engaged, as approved by the Human Subjects Division of the University of Washington, see Appendix B: Sample

Recruitment Materials.

The target population for this study consisted of adults who had participated in a conducted vocal or instrumental ensemble (e.g., as a singer, accompanist, instrumentalist, or conductor). A conducted music ensemble was defined as a group of musicians with a director who leads the group musically without participating as a singer or player.

The sample consisted of those who successfully completed the entire survey in 10 minutes or longer; this duration was determined the minimum necessary for participants to answer all required questions and observe each stimulus in its entirety. The beginning of the survey included eligibility questions to screen those who were not of the age of majority and/or had not participated in a conducted music ensemble. No further data was collected from ineligible participants.

Of the 658 who began the survey, 376 met the criteria for involvement, correctly completed the survey, and were deemed usable. Because the online survey process was similar to a mailed survey, protocols were set in place to sort through participant responses with the goal of valid and reliable data sets. To that end, the remaining 282 surveys were excluded for one of several reasons. First, participants not of the age of majority or without experience in a conducted music ensemble were not advanced in the survey. Second, incomplete participant surveys for all required responses were removed. Third, the data of participants who indicated anything other than complete adherence to instructions for video stimuli were removed. Fourth, any data sets emulating from an Internet Protocol address that had been previously used were examined to determine the reliability of at least one of those data sets; reiterated and/or unreliable data sets were removed.

Finally, durations were expected to fall within a 10-minute to one-hour window of time;

participant responses not within that window were removed. Since each survey included approximately nine minutes of video and multiple additional questions in response to each of eight videos, the researcher determined that it was unreasonable to successfully complete the video portion of the survey in fewer than 10 minutes. Additionally, the researcher wanted to ensure that participants were not interrupted by other activity. In the pilot testing of the survey, a couple participants who wrote copious comments in response to each video took up to 45 minutes to complete the process; it was determined that an hour provided participants with enough time to properly and freely share their comments, but that allowing longer might allow for participants to be interrupted by other activities, thus, jeopardizing the validity of the online survey and possibly the reliability of the data. Participant surveys with duration under 10 minutes or over one hour were removed.

Participation in this study was anonymous and voluntary, and all specifically identifying information was kept confidential in accordance with the University of Washington Institutional Review Board. No participants or organizations received any compensation for their involvement in this process.

Research Design & Materials

Using prior research as a guide, it was decided that a quantitative experimental approach with an embedded qualitative component would be best for answering the research questions and exploring the construct of expressivity. The study design required participants to assess expressivity of performance in one of three different presentation modes of choral performance expressivity: audio-visual (conductor-choir), audio-only (choir-only), or visual-only (conductor-only). For each assessment, participants were given the opportunity to explain or comment on their rating. A final question asked participants in open-ended fashion for any additional thoughts

regarding choral expressivity. The researcher created all of the materials for the study and developed the stimuli similarly to previous research and as described below.

Audio Excerpts. To create the audio excerpts necessary for the final video stimuli, the researcher selected two musical passages from Gabriel Faure's *Madrigale, Opus 35* (Fauré, 1884) and labeled them Musical Passage #1 (measures 41-74) and Musical Passage #2 (measures 92-129). Score excerpts of Musical Passage #1 and Musical Passage #2 can be found in Appendix C: Musical Passages.

The researcher chose these passages specifically for their potential of contrasts in choral and conductor performance expressivity. For example, Fauré indicates *molto espressivo* near the beginning of Musical Passage #1 and incorporates massive dynamic swells and diminuendos from *piano* to *mezzo forte* with return to *piano* throughout the passage. Additionally, near the end of Musical Passage #1, the *molto espressivo* style is contrasted by way of accented articulation in the piano voice. In Musical Passage #2, expressive contrasts are again possible by way of indicated phrasing and dynamics; Fauré also indicates a tempo contrast with a *poco ritardando*, followed by an *a tempo* (see page 14 of score excerpt). In addition to these expressive qualities indicated by Fauré, performers may add a variety of other stylistically appropriate expressive qualities, including textual emphasis/declamation, mini-phrasing, rubato within the measure, and articulatory and dynamic contrasts not indicated in the score.

In order to distinguish between expressivity that is manipulable and that which is not, it was necessary to separate expressivity that is innate to the construction of the music from that which is superimposed by the interpretation of performers. The expressive qualities added by performers, whether notated in the score or added by the musicianship of the singers, players, and/or conductor, were defined as being externally expressive, while those expressive qualities

inherent to the composition were deemed inherently expressive.

Inherent expressivity included elements that may convey feeling created by the execution of the composition without additional effort on the part of the performer. For example, textural contrast is a compositional device that creates an expressive change in color and dynamics; in this case, performing inexpressively results in an inherently expressive performance, as the addition or reduction of voices creates a natural crescendo or decrescendo in the overall structure. External expressivity included elements of feeling that can be interpreted and manipulated by the performers, such as contrasts in dynamics, tempo, articulation, and tone. For the sake of these stimuli, the researcher allowed inherent expressivity to be present across all performance recordings, while manipulating the external expressivity in contrasting manners. Thus, unless otherwise noted, future references to choral or ensemble expressivity conditions refer to external, not internal, expressivity.

The researcher tasked a choir, collaborative pianist, and conductor from a large research university in the Pacific Northwest with recording two versions of both Musical Passage #1 and Musical Passage #2, each contrasting in external expressivity. The results were minimally and maximally expressive recordings of each musical passage performed by the same group of people in the same space in the same recording session.

To create the contrast in external expressivity, the researcher developed the categories of minimal and maximal expressivity. Minimal expressivity was defined as the reduction or removal of externally expressive elements, including variations in dynamics, tempo, articulation, and word emphasis. In the minimally expressive performance recordings, the researcher requested that the choir sing with good vocal production and intonation while maintaining the same dynamic level, strict tempo, consistent legato articulation, and textual clarity without

expression or inflection. The researcher asked the conductor and pianist to assist the singers in this neutralized performance.

Maximal expressivity was defined as the presence of externally expressive elements, including variations in dynamics, tempo, articulation, and text stress, as deemed stylistically appropriate by the conductor, choir, and pianist. The conductor, pianist, and singers performed the piece as they had rehearsed it for their concert, including the use of rubato, phrasing, dynamic and articulatory contrast, and textual expression. The performers brought to the performances their tasteful interpretations of the piece in a maximal manner.

In each of the four resultant performance recordings, the researcher and performers retained the expressivity inherent to the compositional construct while manipulating the external expressivity. In addition to maintaining inherent compositional expressivity throughout the four performance recordings, the researcher instructed the performers to preserve uniformity of balance among voices and instruments, production beautiful tone, quality of intonation and vowel formation, and unity in ensemble rhythm across the four recordings, so that the technical quality and vocal aesthetic remained consistent regardless of minimization or maximization of expressivity.

The minimally and maximally expressive performance recordings of both Musical Passage #1 and Musical Passage #2, along with other supplementary audio-visual materials can be viewed online. See Appendix C: Supplementary Audio-Visual Materials. Each excerpt lasted slightly more than one minute, a length consistent with items used in previous research (Morrison et al., 2009; Morrison & Selvey, 2014; Price, 2006; Price & Chang, 2005).

Video Stimuli. To create the video excerpts necessary for the final video stimuli, the researcher recruited two white male advanced choral conducting students of equal age and

stature from the same university. The researcher supplied each of the conductors with copies of the score and of the four audio recordings and instructed them to prepare to conduct in synchronous time with all four audio excerpts under both low- and high-expressivity conducting conditions. The result was eight conducting videos for each conductor for a total of 16 conducting stimuli.

The researcher operationally defined low- and high-expressivity conditions, described by Byo and Austin (1994) and used in recent research (Morrison et al., 2009; Morrison et al., 2014), relating to the right arm and hand, the left arm and hand, facial expression, and body movement. Direct or prolonged eye contact was minimized in low-expressivity conditions. For a detailed table of the parameters given to the conductors, see Appendix E: High- and Low-Expressivity Conducting Continuum. Conductors met once with a panel of two observers to confirm the conductors' adherence to the low- and high-expressivity conditions and ensured accuracy through multiple takes during the recording process.

The result was 16 total conducting videos that were synchronized to the audio excerpts. For each audio excerpt, there were four conducting videos: both conductors conducted each excerpt twice, once under low-expressivity conditions and again under high-expressivity conditions.

Because appearance may have an effect on the perception of performance, the researcher sought to minimize differences in the appearance between the two conductors, who each wore dark-framed glasses and a dark belt at all times. In order to give the allusion of different performances, the conductors wore two identical combinations of a shirt and pants. The first combination consisted of a long-sleeved white dress shirt with blue jeans and the second set of a long-sleeved black dress shirt and black dress slacks. For videos in which the conductors

conducted the same audio stimulus under the same conducting condition, the conductors wore opposite clothing combinations so that a particular clothing combination would not influence the overall ratings of the pairing of that audio stimulus with the conductor expressivity condition. The result was eight videos by each conductor for each conducting condition (low- and high-expressivity). However, so as to account for possible bias in how the conductor dressed and to give the idea that these were different performances, conductor #1 wore white when conductor #2 wore black and vice versa.

The researcher also recruited volunteer singers from the performing choir that created the audio excerpts to be included in the video footage of the conductors. In each video, the camera view captured a straight-on perspective of each of the conductors as well as the backs of heads and folders of four to six singers. The conductors wore similar attire and accessories; they also changed clothes between excerpts to give the appearance of separate performances. Recruited choristers sang to their own recorded performance excerpts and changed positions between excerpts to give the appearance of different rehearsals.

Final Stimuli. Using the above audio and video excerpts, the researcher created the three modes of stimuli for this study all in the form of videos, regardless of mode (audio-only, visual-only, or audio-visual). The 36 video stimuli used in the study included four choir-only (audio), 16 conductor-only (visual), and 16 choir-conductor (audio-visual) videos. Using iMovie software, the researcher set a 1-second fade-in and 1-second fade out and calibrated the audio effect to “large room” for all 36 videos. The length of each video was approximately one minute. All these files were uploaded on YouTube and embedded in the online survey. These audiovisual stimuli are also available online. See Appendix D.

The audio (choir-only) stimuli for these video stimuli consisted of the four audio excerpts

of Musical Passage #1 and Musical Passage #2, each performed under minimally and maximally expressive conditions. All excerpts were performed in one recording session, by one choir, and in one acoustic space. The visual (conductor) material for these video stimuli consisted of 16 video excerpts with footage facing the conductors and including in the foreground the backs of heads of volunteer student choristers singing along to the recordings of the four audio excerpts. A total of sixteen videos were created, eight by each conductor and labeled as A-P, according to the combinations of conductor (visual mode) and choir performance recordings (aural modes) and their expressivity conditions. See Appendix F: Labels for Combinations of Audio and Visual Modes. The audio-visual (conductor-choir) material for these video stimuli consisted of an overdubbing of the original audio excerpts onto the conductor videos; these 16 videos were labeled in the same manner as the conductor-only videos (A-P). Using iMovie software, the researcher replaced the audio of the conductor recordings with the high-quality prerecorded audio excerpts. These were then synchronized with the conducting session footage.

Presentation Modes. Participants were randomly assigned one presentation mode of the stimuli: conductor-choir, choir-only, or conductor-only. The choir-only and conductor-only formats served as baseline comparisons for the data collected in the conductor-choir versions. Data collected in the conductor-choir versions provided comparisons for matched and mismatched expressivity conditions of the choir (audio) and conductor (visual).

Survey Instrument

All data was collected by means of an online survey crafted using *PsychData*, an online survey software and questionnaire tool selected and purchased by the researcher. Because prior research of this type and magnitude have used classrooms and other controlled environments and this study used an online platform, special considerations were made. Given that this study used

an online platform rather than controlled environments as in previous research, it was determined that headphones should be used by all participants and that the environment in which participants took the survey be quiet and free from distraction.

The first eight questions of the survey collected qualifying and demographic data that the researcher determined could be helpful in comparing the results of this study to prior research. In addition, the researcher decided that the collection of information regarding geography, environment, gender, and level of education information would perhaps be useful in helping to explain possible internal differences of data collected in this online platform, as well as possible differences of data from previous research.

Participants were instructed to view each video in its entirety and without interruption before proceeding to rate the expressivity. In a classroom or group setting, this is easily monitored by use of a researcher to control the video and to instruct participants along the way. Because of the use of an online platform, the researcher found it necessary to have methods of discovering whether or not participants were compliant and to remove data sets for which participants were not. To ensure that participants fully viewed each video before beginning their ratings of that video, the survey required participants to report how much of the video they had observed--some, none, or all. Any responses other than "all" to any of the eight videos resulted in the removal of the participant's entire data set from analysis.

Dependent upon the random assignment of presentation mode (audio-only, visual-only, or audio-visual), each survey included 14 introductory questions per participant, as well as 25-33 questions, dependent on their version of the survey. These questions included multiple choice, multiple selection checkboxes, Likert-type scales, and short answer. In addition to answering questions yielding qualifying and demographic data, participants also viewed one of ten

randomly assigned survey versions, in which they rated 8 (of 36 total) video stimuli for levels of expressivity on an anchored scale of 1 (*low*) to 10 (*high*). Most questions posed to participants were required. However, participants were not given all the questions, as some questions were determined not to be applicable to participants dependent on their responses to previous questions. For example, Question 10, regarding musical identity, instructed participants to choose the category that best described the role they most often take/took in a conducted music ensemble. Answer choices included conductor, accompanist, instrumentalist, and singer. Each choice asked two additional questions specific to that role before moving on, so participants who chose “instrumentalist” skipped over questions 11-16 and 20-22, as they pertained to the other three categories.

By way of recruitment materials of various types (see Appendix B), participants were directed to the survey home page (<https://www.psychdata.com/s.asp?SID=161294>), which introduced them to the *Choral Expressivity Study*, participation requirements, and additional instructions regarding the equipment and environment needed to complete the survey. Participants continued by clicking to the Informed Consent page, which outlined the process of informed consent, the purpose and methodology of the study, confidentiality statements, contact information for both the principal investigator and the University of Washington Human Subjects Division, and the rights of participants. See Appendix G: Home Page and Informed Consent. Those who clicked “no” to Informed Consent were led to the “Thank You” page at the end of the survey. See Appendix H: Thank You.

Once participants digitally signed the Informed Consent by clicking “yes,” they were led to the introductory questions. Of the 26 introductory questions, each participant was asked to answer only 14, the selection of which were dependent on their answers to previously answered

questions. Questions 1-6 were qualifying questions, verifying a participant's age of majority, as well as experience in a conducted music ensemble. Any participants who reported not meeting one or both of these criteria was removed from participation in the study and sent to the "Thank You" page at the end of the survey. See Appendix H.

Participants who met the criteria were led through instructions prompting them to "have fully functioning headphones" and to situate themselves "in a quiet environment, free of distractions." Question 7 asked participants about the description of the environment in which they are taking the survey. Question 8 requested gender information. Participants listed city, state or province, and country in Questions 9-11. Question 12 prompted participants to select their most recent level of education.

Because an ongoing question of this line of research has been whether experience or musical roles played within an ensemble might be connected to the way that participants rate, the researcher collected this basic information. Question 13 asked for the number of years of experience in a conducted music ensemble. Question 14 asked participants to choose their primary musical identity in the role they play or played in a conducted music ensemble: conductor, accompanist, instrumentalist, or singer. Participants whose identity might fall into multiple categories were expected to select the primary role with which they identify. Participants who selected "conductor" as their musical identity continued to Questions 15-17, "accompanist" to Questions 18-20, "instrumentalist" to Questions 21-23, and "singer" to Questions 24-26. In each category of musical identity, participants were asked how many years/seasons of conducted music ensemble experience they had in the role they chose as their musical identity. For the second question regarding the role participants chose, they were asked to select one type of ensemble in which they primarily participate, and the third question allowed

them to list all the other types of ensembles in which they participate. See Appendix I: Introductory Questions.

Upon completion of the introductory questions, *PsychData* randomly assigned participants to one of the 10 stimuli versions, which are discussed in detail below. In each of these 10 randomly assigned versions, participants observed eight videos for both/either conductor and/or choir expressivity on a Likert-type scale of 1 (*low*) to 10 (*high*). For each video, participants had the option to provide a prose explanation for their ratings, and at the end of the survey, participants had yet another opportunity to speak to the general construct of choral expressivity. The video-specific questions were intended to allow the participant to write freely about how they perceived the construct of choral expressivity. The overall question at the conclusion of the survey invited participants to explain what choral expressivity is in general. It was determined that this phenomenological line of qualitative inquiry was “important to understand these common experiences in order...to develop a deeper understanding about the features of this phenomenon” (Creswell, 2007).

When the survey was completed, participants were led to a final “Thank You” page where they were thanked and invited to provide their email address in order to receive post-study information when the *Choral Expressivity Study* closed. Participants were assured that their email address would only be used for distributing the post-study information and that email information was kept separately from participants’ survey data sets in order to maintain confidentiality. See Appendix I.

Upon conclusion of data collection for the study, all participants who provided their email address were sent an email with the Post-Study Information. See Appendix J: Post-Study Information Email.

Ten Video Stimuli Versions

Embedded in the survey completed by participants were randomly assigned video stimuli, divided by presentation mode (audio-only, visual-only, and audio-visual) and further divided by alternating presentation orders and resulting in 10 survey versions. Immediately after the introductory questions and prior to the “Thank You” page, participants were randomly assigned to one of these 10 survey stimuli versions in one of the three modes, including variations on the choir-conductor (audio-visual) video stimuli (versions 1A, 1B, 2A, and 2B), conductor-only (visual) video stimuli (versions 3A, 3B, 4A, and 4B), and choir-only (audio) video stimuli (versions 5A and 5B). See Appendix K: Presentation Orders.

Participants who viewed a version of the choir-conductor video stimuli were required after each video to evaluate both choir and conductor expressivity and were given the option to explain their ratings for the video. Using the same rating scale and option for explanation of ratings, participants who viewed a version of the conductor-only or choir-only stimuli evaluated expressivity of the single stimulus for that particular presentation mode.

The three presentation modes and their various presentation orders are outlined below. One sample survey of each mode can be viewed in Appendix L: Video Stimuli 1A, 3A, and 5A. The 16 conductor-choir (audio-visual) instruments were created by overdubbing the original audio excerpts (two performances, minimally and maximally expressive, of each of two passages) onto the visual material (16 conductor videos labeled A-P). In other words, the four excerpts were each synchronized with conducting videos of two conductors, each performing under two contrasting expressivity conducting conditions (low and high). In half of the cases, the expressivity conditions of the conductor matched the expressivity conditions of the choir performance, while 50% of the pairings were intentionally mismatched with regards to levels of

expressivity. This intentional deception was necessary to ensure construct validity for the study. All supplemental audio-visual materials, including the conductor-choir stimuli, can be viewed online. See Appendix D..

Conductor-Choir Mode. The researcher designed four survey versions (1A, 1B, 2A, 2B) in the audio-visual mode, using the conductor-choir stimuli. Each survey version included 8 of the 16 total videos. In versions 1A and 1B, participants viewed Conductor #1 for each iteration of Musical Passage #1 and Conductor #2 for every iteration of Musical Passage #2. In version 2A and 2B, Conductor 1 was used for Musical Passage #2 and Conductor 2 for Musical Passage #1. Since all combinations of paired expressivity conditions for each of the four audio totals eight, it was not necessary for participants to view all 16 videos created in order to view all combinations of expressivity conditions. Additionally, by having both survey versions 1 and 2, the researcher ensured that an adequate pool of participants rated all 16 videos. In each survey, participants evaluated every combination of conducting and choral performance expressivity conditions (though not all 16 conductor videos), both low- and high-expressivity conducting and minimal and maximal choir expressivity. Specifically, participants a) viewed each conductor four times, conducting the same passage of music recorded by the choir under maximal and minimal expressivity; b) heard each of the four audio excerpts twice; and c) viewed both low- and high-expressivity conducting conditions for each of those audio excerpts.

To account for possible effects of presentation order, based on the four different expressivity conditions of the visual (conductor low- and high-expressivity) and the aural (maximally and minimally expressive choir) stimuli, these four survey versions all began with different combinations of these expressivity conditions. Specifically, both 1A and 1B began with maximally expressive musical performances of the first musical passage and contrasting

conducting conditions (low vs. high), while both 2A and 2B began with minimally expressive musical performances of the same musical passage and contrasting conducting conditions (low vs. high). In all four conductor-choir versions, the survey began with Musical Passage #1.

Conductor-Only Mode. The conductor-only (visual) video stimuli were the same as the conductor-choir stimuli except that the sound of the video was muted and no audio excerpts were overdubbed, so that only the visual stimulus of conducting remained. For the visual-only presentation mode, the researcher created four survey versions (3A, 3B, 4A, and 4B) corresponding respectively with versions 1A, 1B, 2A, and 2B. In this way, the researcher accounted for the same presentation-order effects and accounted for construct validity by use of this baseline comparison between the ratings of conductor expressivity in the conductor-only and the conductor-choir stimuli. All supplemental audio-visual materials, including the conductor-only stimuli, can be viewed online. See Appendix D.

Choir-Only Mode. In the choir-only (audio) stimuli, the videos included each of the four audio excerpts played on a black screen overlaid with text that identified the excerpt number being evaluated. These four audio excerpts each occurred twice in the video in order to create a summed score for each audio excerpt and to minimize possible extreme ratings by a participant. Additionally, the same musical passage was not heard twice a row. The researcher created two orders of the audio-only stimuli (5A and 5B), including contrasting initial expressivity levels, to account for possible presentation order effects; the specific order of 5A and 5B corresponds respectively to stimuli versions 1A and 2A. Specifically, 5A begins with a maximally expressive excerpt while 5B begins with a minimally expressive excerpt. All supplemental audio-visual materials, including the choir-only stimuli, can be viewed online. See Appendix D.

Data Collection

The researcher opened the research study on August 7, 2014. Data were then collected via the snowball sampling method, using a variety of online and email platforms (cf. Context and Participants section on p. 55 for more details). See Appendix B for sample recruitment materials, which reflect a wide sampling of the types of posts the researcher used to encourage a varied participant pool. Either reminder or follow-up emails were sent to organizations approximately two weeks following the initial contact. Posts to online forums were managed almost daily and changed in order to attract a wide range of participants. The survey stopped receiving responses on August 29, 2014. Upon ensuring that the data was sufficient for analysis, the study was official closed and post-study information was emailed to participants on October 4, 2014.

Data Analysis

Data were collected via *PsychData*, which provides the researcher with initial summaries of data per question on the survey. The researcher exported these data sets into Microsoft Excel. Before viewing the data, the researcher identified any repeats of the same Internet Protocol (IP) addresses, which were collected for the sole purpose of identifying repeated survey participants. The researcher removed data sets beyond the first use of a given IP address, and then permanently severed all IP addresses from the rest of the data. Then the researcher removed all data sets for which the participant spent less than 10 minutes completing the survey, as pre-determined for the sake of reliability of data. Finally, the researcher removed all data sets for which the participant answered anything but “all” to each of the eight questions asking how much of the video the participant observed. In other words, if participants answered “some” to one of the eight questions and “all” to the other seven, their data sets were removed.

Prior to importing data into Statistical Package for the Social Sciences (SPSS), the

researcher re-organized some of the data for analysis. For example, since there were so few accompanists who replied to the *Choral Expressivity Study*, they were re-categorized with instrumentalists. Additionally, scores were summed or averaged for certain variables that needed to be compared across presentation modes or between survey versions in the same mode. Statistical consultants assisted the analysis throughout the entire research process. Initially, a consultant worked through the survey tool to ensure that the researcher would be able to adequately address the research questions. After obtaining the participant responses and exporting the re-organized usable data into SPSS, the researcher decided to use analysis of variance (ANOVA) procedures to determine whether there were differences across various presentation orders of the conductor-choir ratings of both conductor and choir ratings. To determine whether the two conductors and two musical passages were rated similarly, the researcher decided to run *t* tests. As a form of validity, the researcher decided to use *t* tests to examine if participant ratings confirmed the intended contrasts in low- and high-expressivity conducting and in minimally and maximally expressive choir expressivity conditions in both single mode stimulus formats, as well as the dual modes.²

To answer the primary quantitative questions, the researcher used ANOVA, correlation, and linear regression procedures. ANOVA procedures were used to test for individual and interactive effects of the audio and visual stimuli on the perception of each other. The researcher also used correlation to test the relationship between conductor and choir expressivity ratings in matched and mismatched conductor/choir expressivity pairings.

The researcher was also interested in being able to explain the phenomenon by way of understanding any significant effects a dual mode stimulus would have on the ratings of either conducting expressivity or choir expressivity as compared with the same ratings from the

corresponding single-mode stimulus. It was determined that to test the direction of any effect on perception of conducting expressivity attributable to choir expressivity and vice versa, independent sample *t*-tests with Bonferroni correction for multiple comparisons would be used. Additionally, to determine the degree to which a variety of variables might predict choir and conductor expressivity ratings, the researcher decided to use two linear regression models, one for conductor, and the other for choir, ratings. Possible predictor variables included a wide variety of collected data.

The researcher determined that methods for coding and analyzing qualitative data would extend the approaches of recent research. For each of the ratings, participations were given the opportunity to explain their evaluations. At the end of the survey, participants were asked for any additional comments or thoughts regarding conductor and choir expressivity. Consistent with prior research, these comments were coded, and in this study, this was accomplished by way of phenomenological data analysis as described by Creswell (2007, pp. 61-62). First, the researcher highlighted significant statements, sentences, or quotes that provided an understanding of how the participants experienced conducting and/or ensemble expressivity. Then the researcher developed these statements into clusters of meaning or themes. The researcher used these themes to present a textural description in chapter 4 and then described in more detail the essence of the participants' experience in chapter 5, completing the cycle of phenomenological inquiry. As is expected in qualitative phenomenological inquiries (p. 62), the researcher assumed broader philosophical assumptions—specifically that themes consistent with previous literature, conducting methods textbooks, and choral techniques curricula would emerge. In addition to coding by theme, the researcher focused on comments that would help illumine quantitative findings and/or provide more information regarding how people rate expressivity. Finally, the

research allowed the combination of themes and approaches to rating expressivity to create a model for viewing the construct of choral expressivity.

Chapter Summary

The *Choral Expressivity Study* asked participants ($N = 376$) to answer questions regarding conductor and choir expressivity, using audio-only, visual-only, and audio-visual presentation modes. The study was introduced via convenience and snowball sampling and administered through an online survey platform. Data were collected from the online survey tool and processed via Microsoft Excel and SPSS.

The survey included approximately 30-40 questions in a variety of formats, including multiple choice, checkboxes, Likert-type scales, and short answer. Participants were not required to explain their ratings; however, introductory questions and numerical ratings were required to complete the survey. In addition to collecting their expressivity evaluations, the survey collected demographic and other data that could help build a profile for participant responses. The researcher used the collected data to better understand choral expressivity and to examine how conducting (visual) and choir (audio) performance relate and interact in their effects on the perception of each other.

Chapter 4: Results

Introduction

According to consensus in the conducting community and many conducting methods books, the two primary roles of a conductor involve teaching/directing in a rehearsal and directing in a performance. Rarely considered, however, is the role of conductor as a *visual* performer. Philosophically and practically, conductors disagree as to the relative importance of conductors as visual performers. The results of this chapter will help to uncover how the visual aspect of conducting may influence—and/or be influenced by—an ensemble’s performance. Although several studies have looked at this phenomenon, the particular value of this study is that it

- compared data across single- and dual-mode stimuli,
- examined matching and mismatching modes of conducting and choir expressivity,
- used an online platform for data collection,
- asked participants to explain how they determined their ratings, and
- sought to gain insight into ensemble members’ views of the construct of choral expressivity.

The goal of the data that follow is to provide an empirical foundation for affirming assumptions of methods books regarding conducting and choir expressivity and to provide scientific foundations for the philosophy and practice of the role of conductor as visual performer.

The design of this study paired two contrasting visual conditions (low- and high-expressivity conducting) and two contrasting aural conditions (minimally and maximally expressive choir performances), using every possible combination and resulting in four paired treatment conditions: conductor high and ensemble maximal (C+/E+), conductor high and

ensemble minimal (C+/E-), conductor low and ensemble maximal (C-/E+), and conductor low and ensemble minimal (C-/E-). Before answering the primary research questions, the researcher determined that addressing the following preliminary questions would help frame the results of the primary questions:

1. What effect does presentation order have on conductor and choir ratings, as measured by the summed scores for each expressive treatment condition?
2. Do participants rate conductors #1 and #2 similarly?
3. Do participants rate musical passages #1 and #2 similarly?
4. Do ratings confirm the intended effects of low- and high-expressivity conducting and minimally and maximally expressive choir conditions?

The remaining data are organized by addressing the following primary research questions:

1. Using the four possible pairs of visual and aural expressivity conditions (C+/E+, C+/E-, C-/E+, and C-/E-) as the independent variables, what are the effects of the combinations of visual and aural expressivity conditions on the perception (ratings) of choir performances?
2. How does perception of an ensemble's performance change by adding a conductor?
3. To what extent are conducting expressivity conditions, ensemble expressivity conditions, paired expressivity conditions, presentation order, role, environment, gender, level of education, experience, and ensemble type predictors of choir evaluations?
4. Using the four possible pairs of visual and aural expressivity conditions (C+/E+, C+/E-, C-/E+, and C-/E-) as the independent variables, what are the effects of the

- combinations of visual and aural expressivity conditions on the perception (ratings) of conducting performances?
5. How does perception of a conductor's performance change by adding the sound of an ensemble's performance?
 6. To what extent are conducting expressivity conditions, ensemble expressivity conditions, paired expressivity conditions, presentation order, role, environment, gender, level of education, experience, and ensemble type predictors of conductor evaluations?
 7. What is the relationship between conductor and ensemble expressivity ratings in matched and mismatched conditions (C+/E+, C-/E-)?

In order to best lay the foundation for the primary questions, this chapter begins by addressing overall demographic information and then ancillary questions. Then each of the primary questions is addressed at length. Information from the *Choral Expressivity Study* is not limited to the findings provided in this chapter; however, results in this chapter were found to be statistically significant and pertinent to the research questions. The convenience and snowball sampling methods provided the author with the ability to generalize the findings only to the sample population except to the extent that the sample population may represent the larger majority of adults who have some experience in a conducted music ensemble. Unless otherwise specified, all confidence intervals are set at 95%. For sake of comparison across tests, ratings are summed in the case of two scores (usually in the audio-visual format) and four scores (usually in the visual- or audio-only formats) so that the total possible of sum of mean ratings across tests is out of a range of 2 (*low*) to 20 (*high*) and 4 (*low*) to 40 (*high*), respectively.

Analysis and findings of the data collected in qualitative fashion follows the reporting of

demographic information and statistical findings. The questions guiding the qualitative data were grounded in the context of conductor and/or choir evaluations, as well as in participants' overall ideas concerning the construct of choral expressivity. The participants' ideas are categorized and briefly reported, laying the foundation for them to be discussed and then compared to the quantitative findings in chapter 5.

Demographic Information

The survey required information to determine whether respondents met participant criteria before allowing them to continue as participants. Of the 658 total respondents, 542 met the criteria and continued to participate. The researcher then examined the data sets of the 542 participants to determine which sets were valid and removed repeat IP addresses, incomplete surveys, and other invalid data sets. Of the 542 participants, 375 usable data sets remained.

Of those 375 final participants, 186 rated performances under audio-visual conditions, 94 under visual-only conditions, and 95 under audio-only conditions. Of the 375, 51.5% were female, 48% were male, and 0.5% were transgender. For sake of analysis, the researcher subsumed the transgender participants into the male/female category corresponding to their currently identifying gender. Also for the sake of analysis, the researcher re-organized other raw data. The researcher combined the roles of instrumentalist and accompanist into one category; the education levels of elementary, middle school, and high school into one category; years of experience into four groups (1-8 years, 9-16 years, 17-24 years, and 25+years); professional and semi-professional ensemble types into one category (professional/semi-professional); and K-12 and collegiate/university ensemble types into one category (academic).

Of the 375 final participants, 19.2% identified primarily as a conductor, 10.1% as an instrumentalist/accompanist, and 70.7% as a singer. While this was heavily marketed to all types

of ensemble members, the name of the study possibly encouraged more singers than the other two roles/identities. Participants with 25+ years in a conducted music ensemble comprised 38.9% of final participants, followed closely by those with 9-16 years of experience at 30.7%, then 17-24 years at 19.2% and 1-8 years at 11.2%. This data indicates that nearly 60% of participants had at least 17 years of experience in a conducted music ensemble. Participants were also asked to identify their primary ensemble type. Nearly half have some experience in a community ensemble (48.8%), and about 1/4 each in a pro/semi-professional (23.5%) and academic/educational (27.7%) ensemble. The researcher determined that collecting this information would allow for an examination of how certain aspects of a participant's background and experience might contribute to the response; in nearly every inquiry of this study, most of this background information did not pertain to the dependent variables being measured.

Nearly all the participants completed this survey in a quiet, private environment (97.3%), indicating that the data are less likely to be skewed or influenced by environmental factors, such as noise or interruptions. Nearly all the participants completing the survey were geographically located in the United States (97.3%). Other nationalities included Canada (1.3%), United Kingdom (0.5%), Mexico, Australia, and Germany (0.3% each).

Regarding education level, 63.2% had undergraduate schooling, while 33.9% had participated in graduate work, and 2.9% had a maximum of a high school education. Despite the use of an online platform and the convenience and snowball sampling methods, the profile of participants and the conditions under which ratings were made seem to be in line with previous research that was conducted in undergraduate and graduate classroom settings (Morrison et al. 2009; Morrison et al., 2014; Price & Mann, 2011) with two exceptions: (1) One in 5 participants in this study identified primarily as a conductor, and (2) nearly 40% of these participants were

experts in ensemble performance. These two exceptions may explain some of the outliers, as well as the observed differences in perspectives and comments regarding conductor and choir expressivity.

Preliminary Results

Presentation Order and Choir Expressivity Scores. Previous research indicates that presentation order has an effect on the evaluation of performances (Morrison et al, 2009; Morrison and Selvey, 2014; Morrison et al., 2014; Price and Mann, 2011), but usually small effect sizes are reported. One-way ANOVA procedures were conducted to examine the effect of presentation order on the four paired expressivity scores (C+/E+, C+/E-, C-/E+,C-/E-) for choir performances in the audio-visual presentation mode. As assessed by inspection of a box plot, there were no outliers in the data for the C-/E+ and C-/E- paired conditions; however, one was found in the C+/E+ conditions and two in the C+/E- conditions. Upon close examination, it was determined that these two outliers represented valid data and should be included in the analysis. Graphic assessment of Normal Q-Q Plots of each of the four paired expressivity conditions indicated normal distribution of the data in all cases. There was homogeneity of variances, as assessed by Levene's test of homogeneity of variances for each paired condition: C+/E+ ($p = .64$), C+/E- ($p = .14$), C-/E+ ($p = .92$), and C-/E- ($p = .82$). The researcher found no presentation order effects on C+/E+ ratings, $F(3, 182) = .36, p = .78$, or C+/E- ratings, $F(3, 182) = 1.03, p = .38$; C-/E+ ratings, $F(3, 182) = .03, p = 1.00$; or C-/E- ratings, $F(3, 182) = .05, p = .99$.

In order to examine the effect of presentation order on the ratings of the choir under minimally and maximally expressive conditions in the audio-only presentation mode, ANOVA procedures were used. As assessed by inspection of a box plot, one outlier was found in each of surveys 5A and 5B for differences between positive and negative scores. Upon close

examination, it was determined that these two outliers represented valid data and should be included in the analysis. Graphic assessment of Normal Q-Q Plots of each of the differences indicated normal distribution of the data in both surveys. There was homogeneity of variances, as assessed by Levene's test of homogeneity of variances for both minimally ($E-, p = .25$) and maximally ($E+, p = .52$) expressive choir performances across surveys 5A and 5B. Survey 5A began with a maximally expressive performance, while survey 5B began with a minimally expressive performance. In a given survey version (i.e., presentation order), ratings were higher for whichever expressivity condition was first presented. However, while choir ratings under maximal expressivity were higher in survey 5A ($M = 14.44$) than in 5B ($M = 14.21$), the difference is not statistically significant, $F(1,93) = .18, p = .67$. Choir ratings under minimally expressive conditions were significantly higher in survey 5B ($M = 12.24$) than in 5A ($M = 10.61$), $F(1,93) = 7.97, p = .006$, indicating that minimally expressive performances may be rated higher when there is no maximally expressive performance immediately prior (cf. Byo, 1990).

Presentation Order and Conductor Expressivity Scores. One-way ANOVA procedures were used to test the effect of presentation order on conductor ratings under the four paired expressivity conditions ($C+/E+, C+/E-, C-/E+, C-/E-$). By way of boxplot inspections, 1 outlier each was found for surveys 2A and 2B for conductor ratings under the $C+/E+$ expressivity condition. One outlier was found for survey 2A under the $C+/E-$ condition. Under the $C-/E+$ condition, three outliers were found for survey 1A, one each for 1B and 2A, and 2 for 2B, with 4 extreme outliers for 2A and 2 extreme outliers for 2B. Under $C-/E-$ treatment, survey 1B had three outliers, 1B had 2 outliers, 2A had 4 outliers, and 2B had one outlier. All outliers were determined to be genuine data and were retained for analysis. Visual assessment of Normal Q-Q Plots indicated normal distribution of the data for each of the four treatment conditions as

divided by survey version (i.e., presentation order). Since Levene's tests for homogeneity were violated, robust tests of equality of means were calculated. The matching conditions were not statistically different among presentation orders: C+/E+, Welch's $F(3, 99.13) = 1.63, p = .19$, and C-/E-, Welch's $F(3, 96.91) = .68, p = .57$. However, presentation order significantly influenced both mismatched conditions: C+/E-, Welch's $F(3, 98.59) = 4.54, p = .005$, and C-/E+, Welch's $F(3, 99.13) = 1.63, p = .19$. Games-Howell post-hoc analysis revealed that the mean was higher for conductor ratings in survey 1A compared to survey 2B in the C+/E- conditions (2.32, 95% CI [.54, 4.10]) was statistically significant ($p = .005$). Additional Games-Howell post-hoc analysis of the conductor ratings under the C-/E+ paired condition revealed statistical significance ($p = .005$) when comparing mean conductor ratings of survey 1B and 2A (-1.83, 95% CI [-3.24, -.42]).

One-way ANOVA procedures were used to examine the effect of presentation order on the ratings of the conductor under low- and high-expressivity conditions in the visual-only mode. As assessed by inspection of a boxplot when comparing the difference of conducting scores under the two contrasting conditions, no outliers were discovered in surveys 3A, 3B, or 4B; only one outlier was found in survey 4A. It was determined that it represented valid data and should be included in the analysis. Graphic assessment of Normal Q-Q Plots of each of the differences indicated normal distribution of the data in all four survey versions. There was homogeneity of variances, as assessed by Levene's test of homogeneity of variances for both low- ($p = .76$) and high-expressivity ($p = .82$) conductor ratings across the four surveys. There was no significant difference in conductor ratings between presentation orders for both the high-expressivity (C+), $F(3, 90) = .81, p = .49$, and the low-expressivity (C-) conditions, $F(3, 90) = .29, p = .83$.

Presentation order was not considered as a factor for the main analyses in chapter 4 for

three reasons. First, the survey design accounted for possibilities of presentation order effects by providing contrasting conditions and pairs of conditions and random assignment as means to control whatever presentation order effects might exist. In addition, presentation order effects sizes reported in prior research are very small (Morrison et al., 2009; Silvey, 2011; Morrison et al., 2014; Morrison & Selvey, 2014; Tsay, 2013) and not considered significant to the overall effects of the research. Finally, to confirm that analyses were robust without using presentation order as a factor, the researcher ran a linear regression that included presentation order as a possible predictor; results of the regression will be reported later in the chapter.

Conductor #1 vs. Conductor #2. For both the visual-only and audio-visual modes, a paired-samples *t*-test was used to determine whether there was a statistically significant mean difference in the ratings of conductors #1 and #2. Visual inspection of boxplots for the differences in ratings between conductor #1 and conductor #2 detected one outlier and one extreme outlier in the visual-only format and two outliers in the audio-visual format. Inspections of all outlier values determined them to be genuine data, and they were kept in the analysis. As graphically assessed by way of Normal Q-Q Plots, assumptions for normal distribution were met for both the visual-only and audio-visual formats. In the visual-only format, conductor #1 ($M = 18.15$, $SD = 3.94$) was rated significantly lower than conductor #2 ($M = 20.25$, $SD = 3.97$), $M = -2.10$ ($SE = .36$), $t(93) = -5.84$, $p < .001$, $d = .60$. In the audio-visual format, conductor #1 ($M = 19.05$, $SD = 4.97$) was rated slightly lower than conductor #2 ($M = 19.48$, $SD = 4.58$), but not with statistical significance, $M = -.43$ ($SE = .26$), $t(185) = -1.62$, $p = .11$, $d = .12$. For the sake of analysis, since no statistical difference was found between conductors in the dual-mode format and since the research design accounts for and balances out these two conductors, individual conductors were not factored into the analyses throughout the remainder of the chapter.

Musical Passage #1 vs. Musical Passage #2. For both the audio-only and audio-visual formats, a paired-samples *t*-test was used to determine whether there was a statistically significant mean difference in the ratings of musical passages #1 and #2. Visual inspection of boxplots for the differences in ratings between musical passage #1 and musical passage #2 detected two outliers in the audio-only format and five outliers in the audio-visual format. Inspections of all outlier values determined them to be genuine data, and they were kept in the analysis. As graphically assessed by way of Normal Q-Q Plots, assumptions for normal distribution were met for both the visual-only and audio-visual formats. In the audio-only format, musical passage #1 ($M = 26.53$, $SD = 4.90$) was rated significantly higher than musical passage #2 ($M = 25.04$, $SD = 5.61$), $M = 1.50$ ($SE = .52$), $t(94) = 2.90$, $p < .001$, $d = .30$. In the audio-visual format, musical passage #1 ($M = 23.41$, $SD = 5.41$) was rated slightly higher than musical passage #2 ($M = 22.96$, $SD = 5.59$), but not with statistical significance, $M = .45$ ($SE = .25$), $t(185) = 1.81$, $p = .07$, $d = .13$. Similar to the ratings of conductors, the only significant difference between musical passage ratings is found in the single-mode (audio-only) format, with the differences less pronounced in the dual-mode format. Musical passage number (i.e., #1 and #2) has been accounted for by way counterbalance in the research design and was not considered as a factor in the remaining analyses.

Validity of Conductor and Choir Expressivity Conditions. To test for the intended effects of conducting expressivity conditions (low and high) in both the visual-only and audio-visual formats, a paired-samples *t*-test was used to determine whether there was a statistically significant mean difference in the conductor ratings under the contrasting conditions. Visual inspection of boxplots for the differences in ratings between low- and high-expressivity conducting conditions detected only one extreme outlier in the audio-visual format. Inspection of

this extreme outlier determined it to be genuine data, and it was kept in the analysis. The differences for the conducting ratings under low- and high-expressivity conditions were normally distributed for the visual-only format, as assessed by Shapiro-Wilke's test ($p = .399$). For the audio-visual mode, graphic assessment by way of Normal Q-Q Plots indicated non-violation of assumptions for normal distribution. In the visual-only format, conductor ratings under high-expressivity conditions ($M = 14.54, SD = 2.39$) were significantly higher than conductor ratings under low-expressivity conditions ($M = 4.65, SD = 2.35$), $M = 9.89$ ($SE = .31$), $t(93) = 31.68, p < .001, d = 3.27$. In the audio-visual mode, conductor ratings under high-expressivity conditions ($M = 13.93, SD = 2.79$) were rated significantly higher than conductor ratings under low-expressivity conditions ($M = 4.74, SD = 2.39$), $M = 9.19$ ($SE = .24$), $t(185) = 39.04, p < .001, d = 2.86$.

Two contrasting conditions were used to create differing amounts of aurally expressive information in the audio portions of the study's video stimuli. Minimally expressive performances neutralized contrasts or variations in expressive elements, and maximally expressive performances appropriately and fully engaged externally expressive elements. To test for the intended effects of minimally and maximally expressive choir performance conditions in both the audio-only and audio-visual modes, a paired-samples t -test was used to determine whether there was a statistically significant mean difference in the choir ratings under the contrasting conditions. Visual inspection of boxplots for the differences in ratings between minimally and maximally expressive choir conditions detected four outliers each in the audio-only and audio-visual formats. As graphically assessed by way of Normal Q-Q Plots, assumptions for normal distribution were met for both the audio-only and audio-visual formats. In the audio-only format, choir ratings under maximally expressive conditions ($M = 14.32, SD =$

2.65) were significantly higher than choir ratings under minimally expressive conditions ($M = 11.47$, $SD = 2.91$), $M = 2.85$ ($SE = .32$), $t(94) = 8.99$, $p < .001$, $d = .92$. In the audio-visual format, choir ratings under maximally expressive conditions ($M = 12.45$, $SD = 2.63$) were significantly higher than choir ratings under minimally expressive conditions ($M = 10.731$, $SD = 3.12$), $M = 1.72$ ($SE = .18$), $t(185) = 9.58$, $p < .001$, $d = .70$. Comparisons across the three presentation mode formats revealed that the intended effects of both conducting and choir expressivity were observed by participants, giving validity to the treatment conditions and contributing reliability to the evaluations of choral and conductor expressivity in this study.

Choir Performance Expressivity Ratings

Question 1. For each of the four pairings of conductor and ensemble expressivity conditions (C+/E+, C+/E-, C-/E+, and C-/E-) in the audio-visual format (Surveys 1A, 1B, 2A, and 2B), mean scores for participants' evaluations of choir expressivity were calculated. Repeated-measures ANOVA procedures compared the effects and interactions of the two independent variables (conducting and ensemble expressivity) and their two contrasting levels (low/high and minimal/maximal, respectively) on choir ratings, as measured under the four paired expressivity treatment conditions (C+/E+, C+/E-, C-/E+, and C-/E-). As assessed by boxplot analysis, no outliers were found in the ratings under C-/E+ or C-/E- conditions; one and two outliers were found in the choir ratings under C+/E+ and C+/E- conditions, respectively. All outliers were considered to be genuine data and were retained in the analysis. The data was normally distributed as determined by visual inspection of Normal Q-Q Plots, and because there were no between-subject factors, sphericity assumptions were not evaluated. Conductor and ensemble expressivity conditions each contributed significantly to choir ratings, $F(1,185) = 174.60$, $p < .001$, partial $\eta^2 = .49$, and $F(1, 185) = 91.68$, $p < .001$, partial $\eta^2 = .33$, respectively,

but the interaction of the two conditions did not significantly influence choir ratings, $F(1, 185) = .25, p = .62, \text{partial } \eta^2 = .001$. It is interesting to note that, among the stimuli used in this study, the effect size of conductor expressivity ($\eta^2 = .49$) is slightly higher than that of choir expressivity ($\eta^2 = .33$) on the perception of the choir expressivity. See Figure 3.

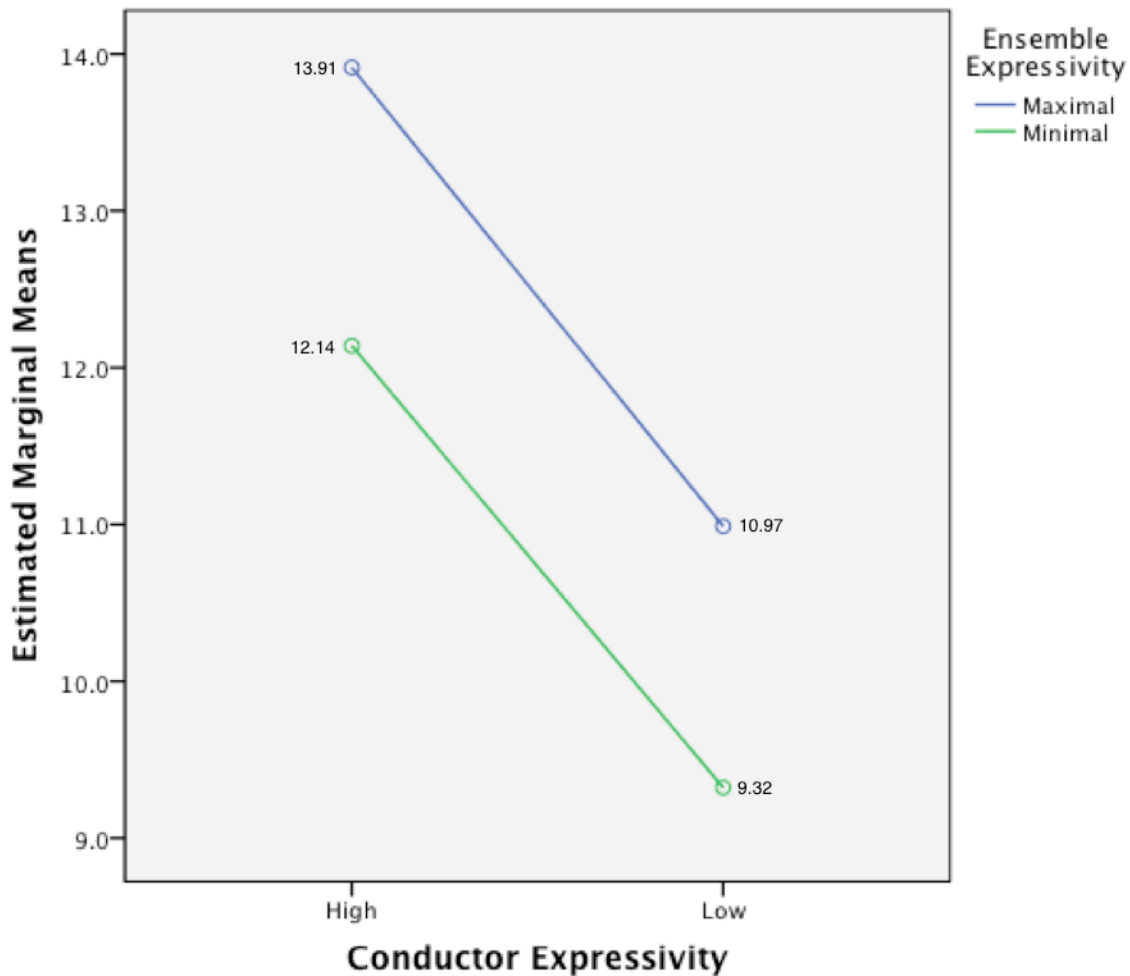


Figure 3. Estimated Marginal Means for Choir Ratings Under Paired Expressivity Conditions

Overall, paired expressivity conditions (C+/E+, C+/E-, C-/E+, and C-/E-) elicited statistically significant differences in choir ratings with a large effect size, $F(1, 185) = 3651.73, p$

< .001, partial $\eta^2 = .95$, and decreasing scores from C+/E+ ($M = 13.91$, $SD = 2.85$) to C+/E- ($M = 12.14$, $SD = 3.38$) to C-/E+ ($M = 10.97$, $SD = 3.41$) to C-/E- ($M = 9.32$, $SD = 3.64$). Using Bonferroni correction for multiple comparisons, significant individual differences were found between each of the four paired expressivity conditions, $p < .001$.

Question 2. Testing for differences within the audio-visual mode produced significant paired-expressivity effects on choir ratings. However, to test for the direction and magnitude that conductor expressivity may have on the perception of choir performances, an independent-samples t -test was run, comparing each of the choir expressivity scores across two presentation modes (audio-only and audio-visual). As assessed by examination of boxplots, 9 outliers were found in the E+ scores of the visual-only test mode; 1 outlier was discovered in the C+/E+ and 2 in the C-/E- scores of the audio-visual mode. All outliers were determined to be genuinely unusual values and retained for analysis. By visual inspection of Normal Q-Q Plots, all choir ratings for each level of presentation mode were normally distributed. As assessed by Levene's test for equality of variances, there was homogeneity of variances among test modes for C+/E+ choir ratings ($p = .13$) and C+/E- choir ratings ($p = .27$), but the assumption for homogeneity of variances was violated for C-/E+ choir ratings ($p = .001$) and C-/E- choir ratings ($p = .007$). To account for violations of homogeneity of variances and to allow for generalization to the sample population, the more robust Welch's t -test was used for the C-/E+ and C-/E- choir rating comparisons.

Choir ratings of maximally expressive performances in the audio-only mode ($n = 95$) ($M = 14.32$, $SD = 2.65$) were rated lower in the audio-visual mode ($n = 186$) under both low- ($M = 10.97$, $SD = 3.42$) and high-expressivity ($M = 13.91$) conducting, though only the low-expressivity conducting (as measured in the C-/E+ score) produced a statistically significant

decrease, Welch's $t(235.22) = 9.05, p < .001$. Ratings of minimally expressive choir performances in the audio-only mode ($M = 11.47, SD = 2.91$) were rated higher in the audio-visual mode ($n = 186$) when accompanied by high-expressivity conducting ($M = 12.14, SD = 3.38$) and lower when accompanied by low-expressivity conducting ($M = 9.32, SD = 3.64$); again only the low-expressivity conducting yielded a significant difference, Welch's $t(229.44) = 5.36, p < .001$. See Table 1.

Table 1
Choir Ratings Paired Differences Between Presentation Modes

	<i>M</i>	<i>SE</i>	<i>t</i>	<i>p</i> *
C+/E+ vs E+	.41	.35	1.16	.25
C+/E- vs E-	-.67	.41	-1.65	.10
C-/E+ vs E+	3.35	.40	8.35**	< .001
C-/E- vs E-	2.15	.43	4.99**	< .001

*2-tailed, Bonferroni correction for multiple comparisons, **Welch's t -test

Question 3. To further understand the relationship of expressivity treatments and other independent variables and choir ratings in the audio-visual mode, a multiple regression was run to predict choir ratings from conducting expressivity conditions, ensemble expressivity conditions, paired expressivity conditions, presentation order, role, environment, gender, level of education, experience level, and ensemble type. The assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met. Tests for multicollinearity revealed that the range of all results were within the accepted limits (tolerance = .80-.97, VIF = 1.03-1.32), indicating that the model was not compromised by multicollinearity.

These variables statistically significantly predicted choir ratings, $F(9, 734) = 21.08, p < .001$, $\text{adj. } R^2 = .20$. However, only conductor expressivity and paired treatment conditions of conductor and choir expressivity added statistically significantly to the prediction, $p < .001$, supporting the idea that the visual stimuli accompanying a musical performance may be the best predictor of evaluations of that performance (cf. Tsay, 2013; Mitchell & MacDonald, 2014; Morrison et al. 2014) and that the pairing of conducting and choir conditions, both matching (cf. Morrison et al. 2014) and mismatching, may also be a strong predictor of ensemble performance evaluations. Of particular note is that ensemble expressivity, presentation order, role, and experience level are not statistically significant predictors of ensemble performance evaluations in this bi-modal exploration. It is shocking that ensemble expressivity itself is not a strong predictor of evaluations of ensemble expressivity.

Conductor Performance Expressivity Ratings

Question 4. For each of the four pairings of conductor and ensemble expressivity conditions (C+/E+, C+/E-, C-/E+, and C-/E-) in the audio-visual mode (surveys 1A, 1B, 2A, and 2B), mean scores for participants' evaluations of conductor expressivity were calculated. Repeated-measures ANOVA procedures compared the effects and interactions of the two independent variables (conducting and ensemble expressivity) and their two contrasting levels (low/high and minimal/maximal, respectively) on conductor ratings, as measured under the four paired expressivity treatment conditions (C+/E+, C+/E-, C-/E+, and C-/E-). As assessed by boxplot analysis, two outliers were found in the conductor ratings under C+/E+, 3 under C+/E- conditions, 8 under C-/E+, and 3 under C-/E- conditions. No extreme outliers were found, except 6 in the C-/E+ scores. All outliers were considered to be genuine data and were retained in the analysis. The data were normally distributed as determined by visual inspection of Normal Q-Q

Plots, and because there were no between-subject factors, sphericity assumptions were not applicable. Conductor and ensemble expressivity conditions each contributed significantly to conductor ratings, $F(1,185) = 1523.79, p < .001, \text{partial } \eta^2 = .89$, and $F(1, 185) = 11.88, p < .001, \text{partial } \eta^2 = .06$, respectively, but the interaction of the two conditions did not significantly influence conductor ratings, $F(1, 185) = 1.24, p = .27, \text{partial } \eta^2 = .01$. See Figure 4.

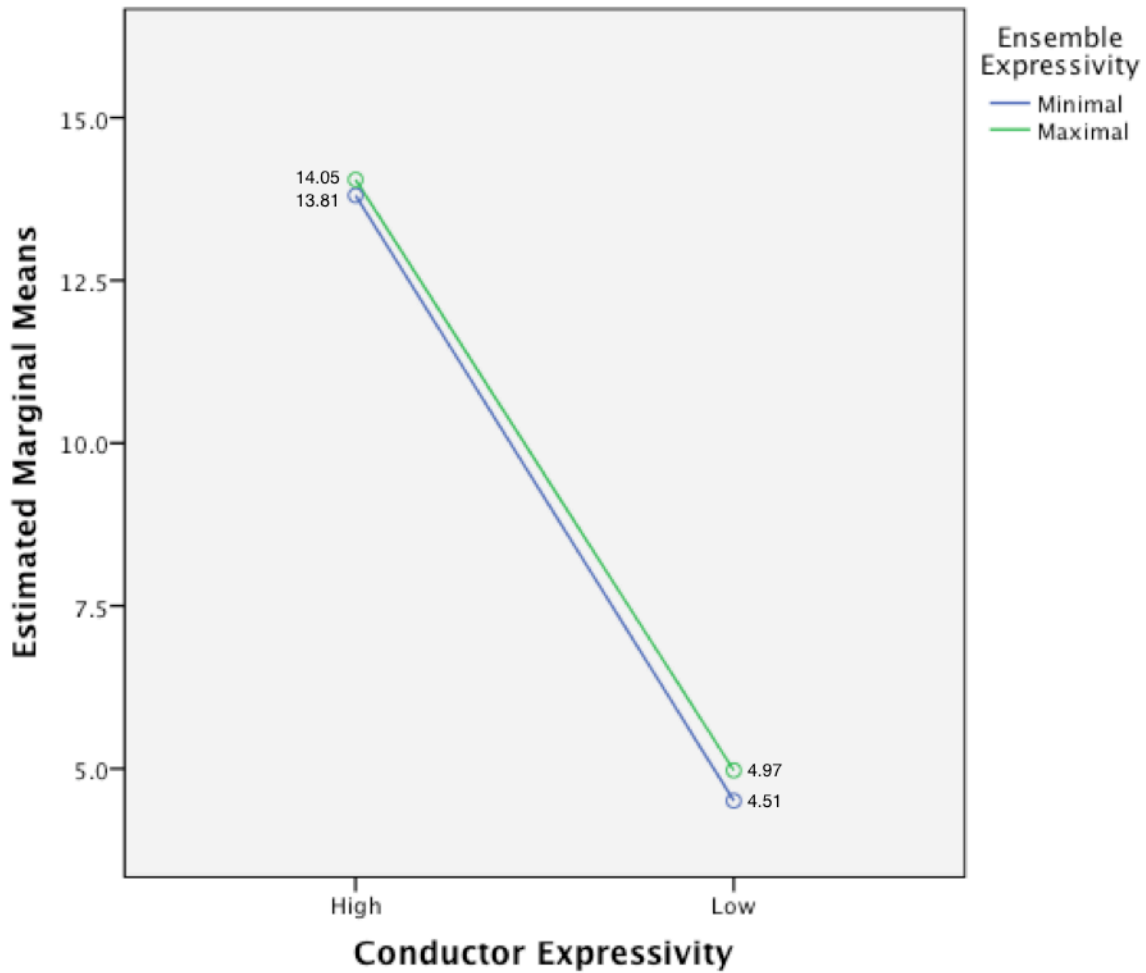


Figure 4. Estimated Marginal Means for Conductor Ratings Under Paired Expressivity Conditions

Overall, paired expressivity conditions (C+/E+, C+/E-, C-/E+, and C-/E-) elicited statistically significant differences in conductor ratings with a large effect size, $F(1, 185) = 3883.60, p < .001$, partial $\eta^2 = .96$, with individual means decreasing from C+/E- ($M = 14.05, SD = 3.07$) to C+/E+ ($M = 13.81, SD = 2.89$) to C-/E- ($M = 4.97, SD = 2.54$) to C-/E+ ($M = 4.51, SD = 2.57$). Using Bonferroni correction for multiple comparisons, five of the six comparisons produced significant individual differences between conductor scores under the paired expressivity conditions. See Table 2 for paired differences.

Table 2

Conductor Ratings Paired Differences of Paired Expressivity Conditions

	<i>M</i>	<i>SE</i>	<i>t</i>	<i>p</i> *
C+/E+ vs C+/E-	-.24	.15	-1.57	.71
C+/E+ vs C-/E+	9.30	.27	34.61	< .001
C+/E+ vs C-/E-	8.83	.24	36.17	< .001
C+/E- vs C-/E+	9.54	.27	35.47	< .001
C+/E- vs C-/E-	9.07	.24	37.30	< .001
C-/E+ vs C-/E-	-.47	.13	-3.47	.004

* 2-tailed, Bonferroni correction for multiple comparisons.

Question 5. To determine the direction and magnitude that aural information (choral expressivity) may have had on visual experience (perceived conducting expressivity), an independent-samples *t*-test was run, comparing each of the conductor expressivity scores across two different test modes (audio-only and audio-visual). As assessed by examination of boxplots for the two modes under each of the four paired conditions, 3 outliers were found in the C- scores of the visual-only test mode and none in the C+ scores. Boxplots for the audio-visual

mode revealed 2, 3, 8, and 8 outliers in the conductor scores for the C+/E+, C-/E+, C+/E-, and C-/E- paired conditions, respectively. Additionally, C-/E+ revealed six extreme outliers. All outliers were determined to be genuinely unusual values and retained for analysis. Visual inspection of Normal Q-Q Plots revealed small, but similar, violations of normal distribution assumptions among conductor scores between visual-only and audio-visual modes. Because of the similarities across modes, it was determined that a *t*-test would be appropriately robust to deal with some of the extreme data points and account for possible Type I error. As assessed by Levene's test for equality of variances, there was homogeneity of variances among test modes for C-/E+ ($p = .612$) and C-/E- conductor ratings ($p = .49$), but the assumption for homogeneity of variances was violated for C+/E+ ($p = .04$) and C+/E- conductor ratings ($p = .02$). To account for violations of homogeneity of variances and to allow for generalization to the sample population, the more robust Welch's *t*-test was used for the C+/E+ and C+/E- conductor rating comparisons.

Conductor ratings of highly expressive performances in the visual-only mode ($n = 94$) ($M = 14.54$, $SD = 2.31$) were rated lower in the audio-visual mode ($n = 186$) under both minimally ($M = 14.05$, $SD = 3.07$) and maximally ($M = 13.81$, $SD = 2.89$) expressive choir performance conditions, though only the maximally expressive choir condition (as measured in the C+/E+ score) produced a statistically significant decrease, Welch's $t(226.67) = 2.31$, $p = .03$. Ratings of low-expressivity conducting performances in the visual-only mode ($M = 4.65$, $SD = 2.35$) were rated lower in the audio-visual mode ($n = 186$) when accompanied by maximally expressive choir performances ($M = 4.51$, $SD = 2.57$) and higher when accompanied by minimally expressive choir performances ($M = 4.97$, $SD = 2.54$); however, low-expressivity conducting performances between visual-only and audio-visual modes were not statistically significantly

different.

Question 6. To further understand the relationship of expressivity treatments and other independent variables and conductor ratings in the audio-visual mode, a multiple regression was run to predict conducting ratings from conducting expressivity conditions, ensemble expressivity conditions, paired expressivity conditions, presentation order, role, environment, gender, level of education, experience level, and ensemble type. The assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met. These variables statistically significantly predicted choir ratings, $F(9, 734) = 230.21, p < .001, \text{adj. } R^2 = .74$, indicating that this regression model was a good fit of predictive factors on conductor scores. Paired expressivity conditions, conductor expressivity condition, ensemble expressivity, presentation order, and primary ensemble type each statistically significantly predicted conductor scores. See Table 3.

Tests for multi-collinearity revealed that the range of all results were within the accepted limits (tolerance = .80-.97, VIF = 1.03-1.32), indicating that the model was not compromised by multicollinearity. Furthermore, conductor expressivity was significantly and positively correlated with conductor scores (Pearson's $r = .86, p < .001$), suggesting that as conductor expressivity increased, so did the ratings of conducting expressivity. Paired expressivity conditions significantly and negatively correlated with conductor scores ($r = .75, p < .001$), indicating that conductor scores decreased when compared across the four paired expressivity conditions.

Table 3

Linear Regression Analysis Summary for Variables Predicting Conductor Ratings (N = 734)

Variable	<i>B</i>	<i>SE B</i>	β
Conducting Expressivity Condition	21.89	.90	**
Presentation Order	-.24	.09	-.05*
Role/Musical Identity	.18	.15	.03
Primary Ensemble Type	.37	.15	.05*
Ensemble Expressivity Condition	-4.95	.23	-.46**
Paired Expressivity Condition	-4.60	.10	-.96**
Environment	.15	.58	.01
Gender	.26	.21	.02
Education Level	.23	.22	.02
Experience Level	.14	.11	.03

adj. $R^2 = .74$, * $p < .02$, ** $p < .001$

Relationship of Conductor and Choir Expressivity Ratings

Question 7. Finally, to determine the relationship of conductor and choir expressivity scores under similar paired expressivity conditions, Pearson's correlations were used.

Preliminary analyses for each of the paired conditions showed the relationships to be linear with both variables normally distributed, as assessed by Normal Q-Q plots. Several outliers were found for most of the scores under all four paired expressivity conditions; all outliers and extreme outliers were considered genuine data and were retained for analysis. There was a moderate positive correlation between conductor and choir ratings in the two mismatched conditions: 1) C+/E-, $r(186) = .49$, $p < .001$, with conductor ratings contributing 23% of the

variability to choir ratings, and 2) C-/E+, $r(186) = .32, p < .001$, with conductor ratings contributing 10% of the variability to choir ratings. However, a strong correlation between conductor and choir ratings in the matched expressivity conditions was found: 1) C+/E+ $r(186) = .68, p < .001$, with conductor ratings contributing 46% of the variability to choir ratings, and 2) C-/E-, $r(186) = .58, p < .001$, with conductor ratings contributing 33% of the variability to choir ratings.

Findings of Qualitative Responses

Anecdotal references reflecting expert conductors' experiential wisdom appear in methodology books and videos and often become accepted as truth. In an effort to bridge the gap between this anecdotal wisdom and that of research, this study sought to understand the different perspectives on choral expressivity that would emerge as participants evaluated expressivity. In this study, raters responded with a numerical score and then commented on or explained their answers. Additionally, at the end of the survey, participants were asked to openly share their views on choral expressivity in general. This chapter attempts to reasonably reflect the ideas that emerged from the participants who chose to contribute by way of open-ended comments.

It was originally the intent of the author to code every comment in manners similar to prior research (Silvey 2011; Morrison et al., 2009), but upon sorting through the data, it became apparent that a different approach might honor both the qualitative research process and the actual responses of the participants. Upon the fourth time through the data, the researcher decided to take note of themes or ideas as they occurred and especially to highlight ideas that were common or similar.

Three questions guided the researcher in the analysis of the qualitative data:

1. Which themes/ideas were new and/or stated in a new way?

2. In what ways does the qualitative data support or help explain and/or clarify the quantitative data?
3. How do the participants' comments and the relationships between comments aid in understanding the construct of choral expressivity?

These questions led to the findings that follow and, together with the quantitative results, contribute a solid foundation for the discussion that ensues in the final chapter.

Emergent Themes/Codes for Conductor and Choir Expressivity

The researcher attempted to summarize and organize the categorical and thematic findings of the qualitative data with particular attention to key words and phrases that were used to describe or refer to the given theme, whereas prior research has coded themes by numbers of occurrence and categories of positive, negative, or neutral. Consistent with prior research, this study chose to organize comments regarding conductor expressivity separate from those of choir expressivity. The goal of the organization of the data that follows is to aid the reader in gaining a comprehensive overview into the types of comments and perspectives that were represented in the participants' comments.

Themes for Conductor Expressivity. The results of the emergent themes/codes for conductor expressivity can be found in Table 4. A few items merit comment. First, the word “meaningless” signifies the expectation of conductor intention and perception of that intention by the choir; this was a fairly common assumption (especially among conductors and seasoned singers or players). Second, there were only a few comments regarding the conductor's attention to the pianist, but those participants who commented felt very strongly from two opposing viewpoints. Some commenters felt that the conductor should be ignoring the pianist, so as to give the pianist artistic freedom, while others felt the conductor was right to direct the pianist (like he

would any other instrumentalist). Third, several participants commented on the ascending soprano line and its contrasts between the expressive and neutral performances of this melodic line; this soaring melody was one of the most important moments of contrast between the minimally and maximally expressive audio excerpts. In addition, some viewed an open conductor’s mouth as indicating vowel shape or raised soft palate, while others viewed the openness as a neutral or negative form of expression. Finally, tensions in the prioritization of clarity of gesture vs. expression of the music seemed to exist throughout the qualitative data; this tension will be discussed further in chapter 5.

Table 4

Inductively Developed Thematic Categories for Conductor Expressivity

Category	Thematic Category	Key Words/Phrases
General Expressivity	Positive	Good, decent, somewhat expressive
	Negative	Obtuse, bland
Leadership	Intent (or lack)	Direction, clarity, specificity
	Connection	Awareness of and anticipates choir’s needs, connection to OR engagement with choir, authenticity/match with personality, empathy (lack)
	Posture/Gestalt	Straight, hunched over, leaning forward, movement of whole body, comfortable OR at ease
Spirit / Attitude	Positive	Animated, lively, impassioned
	Negative	Bored, cold, going through the motions, lacking passion

Face	Overall Positive	Engaged, surprised, present OR absent, unchanging, convey/communicate music
	Overall Negative	Obtuse, bland
	Mouth	Vowel shape, gaped open, modeling raised soft palate
	Eye contact (or lack)	With singers vs. in the music/score, minimal, lazy, with accompanist
Gesture	Articulation	Flexibility, bounce, (stylistic) legato, smooth, flowing, heavy
	Pattern	Clear, varied size, below plane, changing ictus, small OR minimal, misplaced, mirroring
	Overall Descriptors	Emotive (or not), varied, sameness, good, bad, mimicking instruments, conveyed drama
	Arms/Hands	Restricted movement, use of only one OR both arms/hands, use of fingers OR wrist for beat, hand independence, palm direction, elbow
	Left Hand	No swells, indicates phrasing, cues, breath preps, gesture for ascending soprano line (lovely vs. ineffective)
	Technical/Neutral	Default, too technical, neutral, robot, time-keeping, beating time, plank of wood, stiff, “looks like conducting class”
Cues	Positive	Present, on, cut offs, breath prep, signaled entrances, left hand
	Negative	Non-specific, absent, pointless, meaningless

Themes for Choir Expressivity. The results of the emergent themes/codes for choir expressivity can be found in Table 5. Comments on the choir’s expressivity seemed to focus primarily on visual aspects, including the conductor, as well as overall expressivity, tone, dynamics, phrasing, articulation, tempo and diction. Fewer comments addressed intonation or

aspects of ensemble. This dominance of focus on musical expression over tuning or blend may be in part due to the use of high-quality performers (cf. Geringer & Johnson, 2007)

Table 5

Inductively Developed Thematic Categories for Choir Expressivity

Category	Thematic Category	Key Words/Phrases
General Expressivity	Compared to conductor	Amazing, awesome (despite inexpressive conductor)
	Positive	Intense, beautiful, expressive, sound excited
	Negative	Okay, lower excitement, tentative
	Inherent	Innately expressive music, contrasting textures are expressive
Ensemble	Rhythm	Together, not together, following (or not) the conductor
	Blend	Blend, passing off of from one voice to another
Sound	Tuning	Flat, under pitch, especially tenors and basses, dull
	Tone	Rich, heavy, light, bland
	Diction	Clear, muddy, inflected, communicated meaning, pronunciation poor, proper text declamation
Shape	General	Shape (or not), nuance (or not)
	Phrasing	Movement OR traveling of musical lines, arc
	Articulation	Flexibility, bounce, legato, no clarity, elegant flow
	Dynamics	Varied, great control in extreme registers, beautiful crescendo/decrescendo on final phrase, flat, <i>mf</i> for the entire excerpt
	Tempo	Rubato, stretching, metronome, pushes forward, too fast, stylistically appropriate, slight pauses in between phrases

Visual measures	Singer movement (or lack)	Bodily movement, head movement, little engagement or activity, static posture, always looking at their scores
	Singer facial expression	Hard to gauge choir's emotion without seeing faces
	Conductor influences	Conductor effects/influences, conductor gets in the way, tried to ignore conductor

Interplay Between Conductor and Choir

When developing emergent codes and themes for choir and conductor expressivity, it became readily apparent that the two were strongly connected in the perception of each. Most participants assumed the choir was either “responsive” or “non-responsive” and/or that the conductor was (or should be) “connected to the choir” or “engaged with the singers.” Some realized that there was a “disconnect,” “no relationship,” or that the “conductor seemed to be conducting to an audio recording.” All these perspectives point to the assumption that conductor and choir expressivity are dependent on each other. The idealized success of this relationship (or lack thereof) between the conductor and choir seemed to be a prominent foundation in participants’ assessments of general expressivity for both conductor and choir, according to their own explanations.

Some participants went so far as to expect the conductor to be in non-verbal dialogue with the choir as a demonstration of that connection. In other words, according to the perspectives represented in the participant’s comments, just as the choir was responding to the nonverbal communication of the conductor, so too should the conductor be responsive to the aural communication of the choir’s singing. In these cases, the conductor was described as being successful or failing at responding/adjusting to the choir’s needs, in addition to anticipating

them. For example, a singer with 9-16 years in a semi-professional ensemble wrote, “At times the conductor’s gestures were large and swooping for long periods of time, which caused desensitization of his gesture.... As a result, the conductor had to reduce his gesture in order to regain the attention of the singers.”

This expectation of choir responsiveness to the conductor led to a perceived change in the choir’s sound, even between identical performances. For example, when rating an identical aural stimulus, the same singer used the term “reflective expression” to illustrate that the conductor’s heavier conducting resulted in a heavy choir tone and that the conductor’s more flexible, bouncing gesture resulted in a lighter, more agile sound for an identical aural performance stimulus.

Conclusion

This analysis of the data revealed the importance of the visual mode of perception in musical performance, confirming prior research (Mitchell & MacDonald, 2014; Morrison et al., 2014; Tsay, 2013). Additionally, this data reveals the importance of the interplay between conductor and ensemble as a seemingly central part of the evaluation process of expressivity (cf. Bender & Hancock, 2010; Morrison et al., 2009; Price & Mann, 2011; Silvey, 2011). This expected interplay between conductor and choir seemed to assist in explaining some of the variance in and robust results of the quantitative data, specifically that the visual stimulus is overwhelmingly influential on the perception of both conductor and ensemble. In addition to this discussion, further discussion of the what and the how of choral expressivity will be discussed in more detail in chapter 5, with implications toward a proposed model of choral expressivity.

Chapter 5: Discussion

Introduction

Using quantitative procedures, this study aimed to discover the individual and interactive effects of contrasting visual and aural expressivity conditions on the perception of conductor and choir expressivity by way of evaluation scores. Additionally, the study engaged in an open-ended phenomenological inquiry into the construct of choral expressivity (conductor and choir) as explained by participants in the context of assessing expressivity. This chapter is organized by discussing the quantitative and qualitative results regarding conductor and choir expressivity; clarifying implications of the research, including a model for choral expressivity; and concluding with suggestions for future research.

The discussion and implications sections that follow will assist the reader in understanding how the assumed process laid out in chapter 1 (see Figures 1 and 2)—how an audience member perceives an ensemble’s performance—is perhaps incomplete. The discussion and implications that unfold will also reveal the need for both reform in and reconceptualization of the fields of conducting pedagogy and performance, accounting for the proposed expanded role of the conductor in the performance of his ensembles.

Discussion

Introduction to Quantitative Discussion. A discussion of the qualitative data as presented at the end of chapter 4 will continue, but first an overview of the discussion of the quantitative findings will help to give guidance and direction to this discussion. Assumed as a foundation to the study is the fact that music performance is perceived through visual and aural modes of perception; thus, visual information must also be considered.

Choir Expressivity. The study’s overall findings suggest that identifying contrasts of

expressivity conditions may be easier in the visual mode of perception than in the aural mode, even in a bi-modal context. More specifically, the results reported for Question 1 suggested that not only did conductor expressivity contribute in a statistically significant way to the perception of the choir's expressivity, it also contributed more than the actual expressivity of the ensemble. Examination of the results of Question 2 suggest that it is better for an audience to listen to a conductor's ensemble in the dark than for them to see the conductor directing the same performance with minimal expressivity. Question 3 continues to support the dominance of visual information as a predictor of aural performance and suggests that future research may eliminate the need to continue to consider many of these other variables, including experience, musical identity/role, age, or type of ensemble experience when examining their relationship to ensemble expressivity scores.

Conductor Expressivity. The results of Question 4 were in conflict with prior research and reveal that more research examining the effect of ensemble performance on the perception of conductor performance is needed in order to better understand this relationship. The findings of Question 5 reveal that, when both conductor and ensemble are maximally expressive, the aural experience is elevated (as previously noted), while the visual experience is lowered, begging the question of how the *overall* performance might be perceived with the C+/E+ paired expressivity condition. Again, the results of Question 6 dispel the notion or assumption that level of experience and/or musical role/identity might influence the ratings of conductor expressivity.

Question 7. The fact that a moderate correlation exists between conductor and choir expressivity ratings—despite mismatching conditions—and that a strong correlation exists in matching conditions adds to the preponderance of evidence that the visual aspect of conducting corresponds to the way an ensemble's performance is perceived.

Qualitative Data Concerning Choral Expressivity. Prior to going into more detail discussing the larger quantitative findings of this study, it is important to discuss additional worthwhile ideas that emerged in the qualitative data submitted by participants. The discussion of this qualitative data is also interwoven throughout the quantitative discussion; the qualitative data that do not relate directly to the quantitative discussion are discussed first.

Several participants alluded to innate or inherent expressivity versus expressivity of the performance. According to a professional instrumentalist with more than 25 years of experience, “By simply singing it [the piece], the ensemble tends to sound expressive.” This attention to different levels of expressivity makes compositional sense and gives credence to the study’s differentiation between inherent and external expressivity. For example, textures (layering of voices) are written into the music such that, even if the ensemble controls for dynamics by performing at a *mf* the whole time, the structure will naturally reveal dynamic contrast, evident merely by the use of texture as an innately expressive compositional device.

A professional ensemble instrumentalist with 17-24 years of experience was “amazed at how much the conductor’s obvious marking of breaths makes a difference.” Jordan, Moliterno, and Thomas (2011) emphasize the idea that inspiration carries with it all the intent and character of the expression for the exhalation or execution of the music. This holistic cueing—connecting the breath to all expression—as noted by this participant, seems to suggest a powerful tool for choral expressivity. Pedagogue Geoffrey Boers at the University of Washington advocates for the concept of using each moment in conducting as a cue for breath and borrows from the *bel canto* technique for his labeling of this technique—“*appoggio*.” Boers teaches that each moment in conducting contains the preparation, breath, and intent of what is to come. Maintaining the balance of the present and the future is called conducting “in the moment,” is connected to

breath, and leads to successful conducting “*appoggio*.”

A minor, though not insignificant, theme emerged several times regarding conductor authenticity and gesture in the evaluation of expressivity. After reading through all the qualitative comments multiple times and wrestling with the perspectives, the researcher determined that a desire for authenticity seemed to be expressed or assumed in many of the participants’ comments. In the minds of the participants, authenticity seemed to indicate a match among all or most of the nonverbal cues a conductor displayed. For example, speaking of the matching of the conductor’s cues, size of movements, facial expressions, gestures, and spirit, a collegiate singer with 17-24 years of experience stated that the performance was “authentic all the way through.” Another seasoned conducting teacher and a conductor of community ensembles explained that a conductor uses all the elements of conducting technique “in service of the personal response to music.” In other words, the conductor’s personal response to music emerges in her conducting. In this way, the aesthetic qualities of the music naturally and authentically exude from both choir and conductor. Holistic authenticity is reflective of a desire for consistency throughout the conductor’s nonverbal communication process. This idea of multi-dimensionality as a form of effective emotional communication is alluded to in prior research (Bergee, 2005; Byo, 1990; Byo & Austin, 1994; Frederickson et al., 2003; Morrison et al., 2014; Wöllner, 2008) which also suggests that when two or more elements of expression are in alignment, expressive intent is better received and understood.

Lenses for Evaluating Conductor and Choir Expressivity. It appears that participants’ evaluations of conductor and choir ratings reflected in part their overall assessments of that performance’s efficacy. Quantitative findings revealed that in matched conditions of conductor and choir expressivity ratings, conductor and choir evaluations were strongly correlated with

conductor expressivity ratings contributing a third to a half of the variability to choir ratings. Even in the mismatched expressivity conditions there was a modest correlation, indicating that part of the evaluation process included overall performance evaluations.

The qualitative data seem to support the moderate and strong correlations of conductor to choir, as measured quantitatively. It was not uncommon for participants to comment on the desire for a match between conductor and choir expressivity, particularly indicated by the phrases “responsive” or “non-responsive” and “connected” or “engaged.” Some even implied an ongoing dialogue where the conductor is also “aware of” and “attentive to the needs of the choir.” While this assumption seemed common, the lens through which they seemed to judge the perceived match or response varied. In matched expressivity situations, some participants seemed to favor minimal expressivity in conducting, as they felt it brought out more expression in the ensemble (even when it sounded neutral) or allowed for more expressivity to result from minor changes. However, most participants found minimal expressivity to be “boring” or “lazy” and made the ensemble sound “less excited” or “bored.” Most participants seemed to favor high-expressivity conducting and expressed how much more beautiful and expressive the choir was under these conducting conditions. Still, some participants viewed these high-expressivity conducting performances as less expressive because they viewed the conductor as “over the top.” Not all viewed “over the top” as less expressive; some participants acknowledged excessive conducting and thoroughly enjoyed it. For example, one expert university singer found the “over the top” conducting to be “charming.”

Out of the qualitative data emerged two primary lenses through which participants seemed to examine choral expressivity. Cognitive measurement assumed a particular gestural connection to a choral response; affective transfer assumed an equivalence of emotive dynamism between

conductor and choir. These two lenses are discussed in detail below.

Cognitive Measurement. The tendency to rate matched expressive conditions lower and neutral conditions higher can be explained in part by how a subgroup of participants explained the rating process. This subgroup was clear that the reason they rated a highly expressive conductor lower or a minimally expressive conductor higher had nothing to do with the perceived amount of expressive movement or action in the conductor, rather the level of *conveyed* expression as measured in the way the choir responded. In other words, the assumption for these evaluators was that expressivity implied meaningful communication of emotion from conductor to ensemble and was, at least in part, measured by the perceived responsiveness of the ensemble. Any expressive activity above and beyond that which was perceivable in the sound of the ensemble was superfluous and not “conveyed” or communicated; as such, “over the top” conducting, according to this subgroup, did not fit the definition of expressivity.

These participants seemed to view the expressivity of the conductor through the lens of a cognitive transfer of information through nonverbal communication from conductor to choir. This subgroup assumed specificity of gesture and facial expression as a communicative tool, the efficacy of which was measured by the presence or absence of the sound associated with the gestural communication. One collegiate ensemble member with 9-16 years of experience explained this perspective in the following way: “The conductor is trying to be very expressive, but a lot of his motions...do not really convey the feeling of the piece. If I was singing, I would be able to tell that he wants emotion, but I would not know which emotion.”

Serving as an extreme example of the bias of what is expected from a cognitive perspective, a singer with 9-16 years of experience in a semi-professional ensemble commented, Conductor hand/arm movements should match the dynamic range (for *pianissimo*—arms

should not move at all, and his hands only slightly; whereas *forte* arms should be waving vigorously) one hand/arm should provide overall meter and dynamics—the other should indicate entrance points for the different parts and how soft or loud that entrance should be. Also, if a cutoff is important that should also be indicated with appropriate hand motions... [sic]

This specificity regarding conducting technique and expected ensemble outcomes is representative of a subgroup of participants who expected exacting responses and interactions between conductor and choir. Expectations such as these match the general message of conducting textbooks with regard to economy of gesture and accuracy of stylistic gestures more so than expressive gestures.

Affective Transfer. By contrast, on the other extreme was another college singer, who favored “expansive, grand gestures and facial expressions,” which caused the participant to feel “a lifting and a sense of joy” in the choir’s “profoundly moving performance.” This contrasting perspective was shared by many other participants, who looked for a responsiveness to the conductor as measured in the ensemble’s sound through an affective lens, rather than by way of a cognitive measurement. This second subgroup of participants seemed to determine the conveying of expressivity by their own emotional reaction to the conductor, whether by amount of movement or sheer intuitive individual response. An expert singer in a professional ensemble indicated that “dynamics, suspensions, pacing...the overall effect of the piece was communicated through the director’s style.”

These participants seemed to rely more heavily on their emotive responses to the visual of the conductor and then tested whether or not their emotive response matched the level of the choir’s perceived level of expressivity. If the choir matched, then higher scores were given. For

example, another professional singer responded with raw emotion, saying, “Hallelujah, the conductor smiled! And the choir responded appropriately to his gestures with very, very pretty phrasing.” This professional singer did not specify what part of the gesture was influential, but the emotional gestalt of the conductor somehow seemed to connect positively to the ensemble’s sound.

Comparing the Lenses. These different lenses shed light on the differences in the perception of participants—often of similar events. Similar to prior research (Bender & Hancock, 2010; Price & Mann, 2011), some participants greatly appreciated the highest levels of conductor expressivity while others indicated that the expressive conducting was “over the top” or “inappropriate” for the ensemble’s skill level or the style of the piece. On multiple occasions these different lenses and perspectives caused participants to judge the same set of conditions differently, as indicated below in the discussion regarding these two lenses and their implications to the choral performance process.

The two lenses have implications for not only for audience perception, but also for the perception of ensemble members. It is likely that, in general, ensembles and audiences will be comprised of singers and observers that experience one or both lenses in their perception of choral expressivity. The consummately effective conductor should be able to meld her approach to conducting so as to accommodate the two lenses of perception; tailoring movement to both perception styles will more likely result in the ability to connect and communicate with all the singers and audience members. Focusing on merely one or the other (e.g., cognitive measure or affective transfer) may alienate a large portion of ensemble members and/or audience. Conducting that caters to the observer who favors cognitive measurement may leave little room for those who view the expressive process more affectively and/or less technically. Likewise,

approaching conducting exclusively in favor of the affective transfer perception might cause the cognitive measurement observer to miss the directive information that happens between conductor and ensemble, often with much specificity. Perhaps a middle ground, where both approaches are considered equally important, should be considered. It is conceivable that conducting methods and techniques could approach the art in such a way that both directive information and general affect are in tandem with each other and synergistically support the overall expressive communication of musical intent. This middle ground seems to resound the call that Bergee (2005) made for more holistic reforms to the education of conductors.

One participant noted that the conductor sometimes seemed to be “conducting for show rather than leading the group.” This latter perspective raises an interesting question: Is it possible for expressivity to become showmanship, rather than leadership or directorship, particularly in a context where an ensemble is less expressive? Even more important is the following question: How is that same expressivity perceived by someone who believes that the conductor’s role in performance is to direct or lead an ensemble by way of nonverbal leadership versus someone who believes that the conductor is indeed a visual performer (like a dancer) simultaneous to the ensemble’s aural performance? Most specifically, in performance what is the role of the conductor, leadership of the ensemble or performing visually for the audience? Perhaps it is both. The model proposed below will take both performance roles into account and propose that, because of these two lenses, conductors might be both dancers and directors in a given performance, carefully balancing between the two roles as needed for the optimum overall choral performance, as measured by both acoustical and perceptual measures.

Based on the qualitative data reported in the *Choral Expressivity Study*, it appears that observers started with the visual cues of the conductor, and using their own lens of interpretation

(cognitive or affective), tested for an appropriate response for the choir. Both conductor and choir ratings seem to have been influenced at least in part by this process. This will become a part of the model proposed below.

Preliminary Quantitative Results. In the preliminary quantitative results, the current study indicated significant differences between the ratings of conductors in the visual-only mode and of musical passages in the audio-only modes, but neither comparison was significantly different in the audio-visual mode. It seems that differences in the expressivity conditions of both visual (conductors) and aural (musical passages) stimuli seem to be less noticed with the addition of the other stimulus. In other words, clarity of contrasts between expressivity conditions in one mode of perception (either visual or aural) seems to be reduced when presented in a bi-modal context. This concept has profound implications for musicians. Foundationally, music performance is perceived through visual and aural modes of perception; thus, visual information must also be considered.

Further analysis of qualitative data indicates that, in this bi-modal experiment, participants had the ability to acknowledge that the added stimulus influences their perceptions of the evaluations of both conductor and choir. For example, some participants made assumptions about the experimental design, as if it were a game to try to figure it out. Of those who made assumptions about the design, most surmised it was about the influence of the conductor's expressivity on the sound of the ensemble (which it was not). Some assumed that the conductor stimuli were the same (which they were not). Others were adamant that the audio clips were all the same. In only a few cases did a participant indicate definitive understanding that there were four audio stimuli, and two explicitly acknowledged retrospectively having been deceived by the experiment. In all these cases, participants identified a experimental design with

an influential visual stimulus, and despite some participants' incorrect assumptions regarding the study's design, this study's quantitative results are powerful in their conclusions; additionally, the qualitative perspectives provided by way of these foundational assumptions are helpful to future research.

The preliminary results of this study also indicated with statistical significance that conductor and choir treatment conditions were perceived as they were intended with a large effect size in both modes for conductor expressivity and in the audio-only mode for choir expressivity. Additionally, the preliminary results of this study indicated with statistical significance that conductor and choir treatment conditions were perceived as they were intended with a medium effect size in the dual-mode format for choir expressivity. For both conductor and choir expressivity comparisons, the effect size was larger in the single-mode presentation than in the dual-mode presentation. Also of interest is that the effect size for conductor expressivity comparisons were very large ($d = 3.27$, $d = 2.86$) compared to those for choir expressivity comparisons ($d = .92$, $d = .70$) in the single- and dual-mode presentations, respectively. It is also interesting to note that, while contrasting expressivity conditions for both conductor and choir were perceived with $p < .001$, the effect sizes for the visual conditions were more than three times larger than for the aural conditions in the comparable test mode. This interesting note indicates that identifying contrasts of expressivity conditions may be easier in the visual mode of perception than in the aural mode, even in a bi-modal context (cf. Tsay, 2013).

Choir Performance Expressivity Ratings. Even when rating the choir performances, some participants indicated that it was difficult to evaluate expressivity from the “back of their [choir members'] heads.” Participants commented that they wished they could see their facial expressions and full body movement. Out of what seems like desperation, some even alluded to

their perception of “minimal head movement” by the singers, relying in part on the comparative amount of head movement in the videos for their assessment of choral expressivity.

Question 1. One of the purposes of this study was to examine differences in choir expressivity ratings observed for performances featuring various combinations of low- and high-expressivity conducting and minimally and maximally expressive ensemble recordings. The results of this study indicated that conductor and choir expressivity each (but not their interaction) had a significant effect on the perception of the choir’s performance, suggesting two persisting relationships, one between visual information and auditory perception and another between aural information and auditory perception. These results also suggest that the variation of that visual information in the form of expressivity (cf. Luck, Toivianen, & Thompson, 2010) is positively related to evaluations of ensemble performances (Morrison et al, 2009; Morrison et al., 2014; Morrison & Selvey, 2014; Price & Mann, 2011). Since no interaction seems to exist between the two treatment conditions on the perception of choral performance, it might be assumed that aural information would more prominently contribute to the aural perception of the choir’s expressivity. Interestingly, not only did conductor expressivity contribute in a statistically significant way to the perception of the choir’s expressivity, it also contributed more than the actual expressivity of the ensemble. The effect size of the visual treatment (conducting, $\eta^2 = .49$) is approaching medium, while that of the aural treatment (choir performance, $\eta^2 = .33$) is small, despite the fact that the component being measured is the aural. Consistent with prior research (Madsen, 2009; Mitchell & MacDonald, 2014; Morrison et al., 2009; Morrison et al., 2014; Morrison & Selvey, 2014; Napoles, 2012; Peddell, 2008; Price and Mann, 2011; Tsay, 2013), the results of this study seem to support the dominance of visual information in the perception of a musical performance.

The qualitative data provide numerous examples of the visual dominating the aural experience in the bi-modal context, including that of a professional singer with 17-24 years of experience. This participant rated the identical audio excerpt lower under low-expressivity conducting and higher under high-expressivity conducting. When the conductor was expressive, the participant “felt that the conductor was very expressive facially. The fluidity of his gestures was perceived by the choir and they responded nicely.” However, the identical musical performance was considered as “static and ‘blocky’—conductor is getting what he is giving to the singers. Very chunky and heavy sounding.” In addition, a collegiate singer with 17-24 years of experience indicated that the choir sang “beautifully” when the conductor was “almost too expressive” and described the second iteration of the identical choir performance as “rigid,” as a result of the conductor’s “militant style.”

These findings imply that, because the visual perception of a conductor can radically alter the perception of an ensemble’s performance (e.g., from “beautiful” to “rigid” or from “fluid” to “static and ‘blocky’”), conductors have the responsibility to conduct with maximal expressivity so as to elevate the audience’s perception of the performance, thereby honoring the composer and ensemble’s intent and artistry. A seasoned conductor wrote, “This almost prompts me to rethink my concert experience as an audience [member].” This participant understood that, since the conductor is part of the visual aspect of performance, the conductor has a role in adding to or detracting from the ensemble’s musical performance. This participant also wrestled with the tension of the conductor acting as a director or performer. An expert collegiate singer provided a balanced view of conducting expressivity, indicating that it includes reflecting the musical elements for the singers and guiding the audience in hearing those salient musical elements, as well as embodying the technical elements for singers to produce the desired effects toward a

congruent performance. A singer with 9-16 years of experience in a collegiate ensemble “suspected” that, just as visual expression by the conductor seems to be important, so the visual “expression from the singers becomes equally important to engaging the audience,” giving credence to the idea that the visual is crucial in musical performance.

The following short narrative illustrates the power of the visual aspect of conducting for an audience’s perception of an ensemble’s performance:

In a moment of epiphany, an expert professional chorister listened so carefully to the choir that he noticed the choir was not necessarily singing what the conductor was showing. Realizing that he had been deceived, he commented on the dominating power of the visual, “I think the power of visual suggestion for an audience member is strong. If we see a conductor show something, we want to hear it.”

Question 2. To determine the direction and magnitude that visual information may have on aural experience, researchers have compared ratings of an aural performance across aural-only and dual-mode presentations (Morrison & Selvey, 2014; Napoles, 2012; Price & Mann, 2011; Tsay, 2013). Morrison and Selvey (2014) found that choir performances in an audio-only recording were rated higher than the same performances accompanied by low-expressivity conducting. However, Rodger, Craig, and O’Modhrain (2012) reported no decrease in performance ratings when expert aural performance was accompanied by a novice video. By way of such inconsistencies, research seems to indicate that, when the visual and aural modes are mismatched, the effect of the addition of visual information on the aural performance may not simply be additive or detractive. Rather, overlaying visual information may make way for other contextual variables that the dual-mode experience distinctly highlights.

This study found that adding the visual stimulus of high-expressivity conducting

conditions produced mixed and statistically insignificant results, while the addition of low-expressivity conducting conditions negatively impacted choir ratings, suggesting that the absence of expressive (or the presence of neutral) conducting can negatively influence a listener's perception of an ensemble's performance. In prior research (Morrison & Selvey, 2014), the ability of the conductor to detract from an observer's perception of the performance applied only to a maximally expressive performance; this study confirmed this finding is true when applied to both minimally and maximally expressive choir performances. In other words, no matter how expressive or inexpressive an ensemble may be, a neutral or low-expressivity conductor can negatively influence the perception of that performance—again illuminating the dominance of the visual mode in the perception of an ensemble's performance. The finding implies that it is better for an audience to listen to a conductor's ensemble in the dark than for them to see the conductor directing the same performance with minimal expressivity. Minimalist conductors, beware.

Prior research demonstrated that participants rated ensemble performances as more expressive when the performances were associated with matching conducting expressivity conditions, even when those performances were identical (Morrison et al. 2009; Morrison et al., 2014; Morrison & Selvey, 2014; Price & Mann, 2011) and that mismatching levels of expressivity (C+/E- and C-/E+) resulted in no significant difference in the evaluations of the ensemble's performance (Morrison et al., 2014). However, when making multiple comparisons of the four paired expressivity conditions, this study found significant individual differences in all six individual comparisons. Differing results between the mismatched conditions across the two studies is indicative of the ambiguity these paired conditions embody.

The qualitative data helped to illuminate this ambiguity, created by mismatched

conditions, which may have caused conflicting results across studies. Comments, as compared among the participants, seemed to reveal many more discrepancies in perspectives for video stimuli with mismatched paired expressivity conditions. For example, the same conductor in the same video of mismatched paired expressivity conditions might be called “graceful,” “beautiful,” or “refreshing” by some participants and “distracting,” “unclear,” and “meaningless” by others. Across participants, an identical choir performance under mismatched paired expressivity conditions might be described as “boring,” “dynamically static,” “flat,” “bad,” “beautiful tone,” “flowing musical lines,” “blended” or “amazing.”

According to an instrumentalist from a community ensemble with 17-24 years of experience, when conducting expressivity is not matched by that of the choir, conductors look more “inept,” but when matched, they look more “skilled and in tune with the music.” While this may represent the perceived experience for some participants, the quantitative analysis by the sample population does not always support this, except under low-expressivity conditions. Additionally, according to research (Acklin, 2009), both singers and audience members favor a more expressive conductor. A collegiate singer with 25+ years of experience agreed: “It is more interesting to sing with a director who is animated and expressive. The choir appeared to respond with more expression.... I was much more drawn into the performance.” Since expressive conducting is generally favored over a non-expressive conductor, perhaps a contrasting level of ensemble expressivity highlights the conductor's expressivity (or lack thereof) even more. Second, and even more surprising, a minimally expressive conductor is perceived as more expressive when accompanied by an ensemble that matches her/his level of expressivity, probably because of a perceived effectiveness or appropriateness.

A semi-professional singer with 9-16 years of experience serves as a prime example of

the majority of evaluators who rated the expressive ensemble less expressive because “the singers seemed as disinterested as the conductor was.” This illusion of matching expressivity conditions, when in fact conditions are mismatched (in this case, C-/E+), perhaps helps to explain why there is only a moderate correlation of conductor and choir ratings in the mismatched paired expressivity. Interestingly, this participant indicated that the choir was responsive in all mismatched conditions, such that the perception of the choir was opposite of its intended condition of expressivity. While not every participant was equally deceived, the quantitative results indicated that the visual conditions of the conductor indeed had a significant effect, even in the mismatched conditions.

A community ensemble conductor with 25+ years of experience, assuming that the experimental design included mismatched conditions, indicated a mismatched condition when one was not there. Both conductor and ensemble were intended to be maximally expressive, and this participant rated the conductor lower because the “left hand gestures did not fully convey expressivity.” Despite all of these potential conflicts in perspectives, the data in this study still resulted in a significant difference among all paired expressivity conditions. Based on this highly experienced conductor’s perspective and many like him, perhaps using examples less contrasting in expressivity conditions would yield less definitive results.

Question 3. In trying to discover what the predictive relationship of various factors to choir ratings might be, this study ran a linear regression and found two factors were statistically significant predictors of choir ratings, including conductor expressivity (visual treatment) conditions and paired expressivity conditions (visual and aural). While it is important to note that both of these factors involve the visual stimulus and that this supports the notion that visual stimuli in the context of a musical performance may be the strongest predictor of the evaluations

(cf. Tsay, 2013) of the musical performance, what seems particularly interesting are those factors which fail to predict choir performance evaluations. Because participants are rating, one would expect that the expressivity of the ensemble would be a strong predictor; in the current experiment, it is clear and astonishing that the visual dominated the perception of the aural to the point that the aural was not able to predict the aural evaluations.

Previous research has suggested influences of visual over aural perception across a broad range of experience (from less than a year to more than 10 years) and musical identity (ensemble members, music majors, graduate music students). Additionally, an anecdotal assumption the researcher commonly hears is that singers and players with conducting training are not (or should not be) influenced by the visual stimuli. This study eliminates the need to continue to consider many of these other variables, including experience, musical identity role, age, or type of ensemble experience when examining their relationship to ensemble expressivity scores.

The qualitative examples above illustrate that most conductors—even highly experienced conductors—are indeed swayed. The quantitative data also support the idea that the visual dominance in the perception of musical performance is no respecter of persons, roles/musical identity, or experience levels. This study included perspectives from conductors (1 out of 5 participants), ensemble members at every level (including 25% at the professional and semi-professional levels), and participants with more than 25 years of experience in the field of ensemble performance (nearly 40% of participants). According to the regression of this study, while there may be some indicators of influence among these categories, none reached statistical significance. In other words, differentiation of role in ensemble performance (i.e., conductor, singer, or instrumentalist/accompanist) did not predict ensemble performance scores. Ensemble type and level of experience were also not strong predictors of ensemble performance scores.

This implies that even conductors, highly experienced ensemble performers, and professional musicians were heavily influenced by the visual in their assessment of aural performance.

Conductor Performance Expressivity Ratings. This study reported that the four paired expressivity conditions significantly affected conductor ratings, with both conductor and ensemble expressivity treatments, but not their interaction, contributing significantly. It is interesting to note that among the stimuli used in this analysis, the large effect size of the conductor expressivity condition ($\eta^2 = .89$) is much greater than the small effect size of the ensemble expressivity condition ($\eta^2 = .06$) on the perception of the conductor expressivity. This contrast indicates that the visual stimulus indeed has the stronger influence on evaluations of a visual performance in a dual-modal context, as one might expect. In the evaluation of both the choir and conductor, the level of conductor expressivity seemed to carry more weight.

Question 4. Prior research demonstrated that participants rated high-intensity conductors significantly higher when accompanied by high quality performance than by low-quality performance (Bender & Hancock, 2010; Silvey, 2011), but no significant differences between ratings of low-intensity conductors accompanied by low- and high-quality performances (Bender & Hancock, 2010). By way of multiple individual comparisons, this study produced five significant differences between conductor scores under the paired expressivity conditions. Among these reports of significance, the most interesting finding is that low-expressivity conductors were rated significantly lower when the ensemble was maximally expressive, suggesting that the contrast in expressivity between ensemble and conductor exaggerated the conductor's lack of expressivity.

In contrast, Bender and Hancock (2010) reported that high-intensity—not low-intensity—conducting was affected by performance quality. Since Bender and Hancock (2010) did not

report multiple comparisons, it is difficult to further understand the difference in results between the two studies. Silvey (2011) also reported significant differences in the perception of highly expressive conductors under poor and excellent ensemble conditions, but the design did not examine any effects on low-expressive conducting. The current study utilized the same ensemble and did not sacrifice quality of performance, only external elements of musical expression, perhaps accounting for the difference in the findings. Both Bender and Hancock (2010) and Silvey (2011) used high school and college/professional recordings as the contrasting audio stimuli. The fact that prior research used qualitatively different groups and that the current study used the same group and varied expressivity but not quality, suggests that ensemble performance *quality* may influence maximally expressive conducting, while ensemble performance *expressivity* may influence minimally expressive conducting. However, this idea seems to be in possible conflict with the equivocation of quality and expressivity as measures of musical performance, as suggested by prior research (Morrison et al., 2014; Price & Chang, 2005, 2006; Price & Mann, 2011).

Question 5. When examining how adding a choir might impact the perception of a conductor's performance, this study revealed no significant differences of conductor ratings between visual-only and audio-visual modes, except when expressive conductors were paired with an expressive ensemble performance. These results seem to indicate that assessment of visual performance is not impacted by the addition of an aural experience, except in the case where both are maximally expressive. When both are maximally expressive, the aural experience is elevated (as previously noted), while the visual experience is lowered. The qualitative data helped to shed light on these results. When both conductor and ensemble were maximally expressive, some participants (mostly participants with conducting experience) viewed the

conductor as “over the top” or “not stylistically appropriate.” Perhaps this perceived mismatch of maximally expressive conditions resulted in giving the conductor a lower score. These comments echo many of the comments of Silvey’s research (2011, p. 169), which also concluded the entire report with a quote from page 15 of Treviño’s 2008 dissertation, saying that perhaps “the determining factor of success of the conductor should be the expressive performance of the ensemble” (p. 171). This perspective seems to dominate the world of conducting pedagogy and choral methodology and might account for the fact that differences in conductor scores between the two modes did not reach significance in the mismatched expressivity conditions.

While no other paired expressivity condition comparison (other than the C+/E+) reached statistical significance, a trend was observed. High-expressivity conductors were rated more positively when adding a minimally expressive ensemble to the mix, possibly indicating that participants viewed the conductor as more expressive in contrast to the less expressive ensemble performance. Conversely, by way of the addition of a maximally expressive choir, low-expressivity conductors were more negatively rated. These same conducting conditions were viewed as more expressive when a minimally expressive choir was added. While none of these results reach statistical significance, the profile trend is worth noting, as it could be possible that a mismatched level of expressivity in an ensemble impacts how a conductor might be seen without that added ensemble in a directly opposite way. In other words, it is conceivable that the contrast of expressivity condition in an ensemble might be a way to influence the perception of a conductor’s expressivity. Further research is needed.

Question 6. Previous research (Bender & Hancock, 2010; Silvey, 2011) has found influences of the aural on the perception of the visual among participants across a limited range of experience (undergraduate and graduate students) and musical identity (ensemble members,

music majors, graduate music students). The current study tested for effects across a larger range of experience and included additional categories in a linear regression to explore what factors might predict conductor scores. Expressive conditions, both individually and paired, were all strong predictors of conductor scores; however, the strongest predictors were the visual (conductor's expressivity) and the audio-visual expressivity combinations (which includes the visual), once again pointing to a dominance of the visual mode of perception in the evaluation of visual expressivity. However, in contrast to linear regression for choral expressivity scores, other factors also predicted conducting scores with some statistical significance, including ensemble type and presentation order. In other words, how a conductor was rated could in part be predicted by the survey version and by the type of ensemble (e.g., professional/semi-professional, academic, or community) with which the participant primarily performed. However, whether the participant identified as a conductor, singer, or instrumentalist/accompanist, or whether the participant had 2 or 25+ years of experience, were not predictors of conductor expressivity scores, dispelling the notion or assumption that experience and musical role or identity might influence the ratings.

It seems that, since presentation order and ensemble type are predictors, looking to the qualitative data might help to explain why they might contribute in evaluating visual expressivity but not aural expressivity. As discussed earlier, perhaps more than expressivity contributes to the evaluation process in the contexts with ambiguity of expressivity conditions (C+/E-, C-/E+). Participants often used comparative language, such as "better"/"more" or "worse"/"less." A collegiate conductor with 9-16 years of experience intimated that she compared expressivity between conductors by way of fluidity. Perhaps the expectations dictated by comparative context and experiential bias (what level/type of ensemble one is in) play a larger role in these

ambiguous instances. In other words, in times of ambiguity, experiential bias and associated assumptions seem to take a larger role. Finally, it makes sense that, if the visual mode of perception dominates the aural in this bi-modal examination, in moments of ambiguity, visual perception would be more susceptible to these other additional factors.

Relationship of Conductor and Choir Expressivity Ratings.

Question 7. This study found moderate correlations of conductor and choir expressivity ratings under mismatched treatment conditions but strong correlations under matched treatment conditions, indicating that as conducting expressivity increases, so does ensemble expressivity. In both matched and mismatched conditions, the relationship was stronger for high-expressivity conducting. The fact that a moderate correlation exists—despite mismatching conditions—and that a strong correlation exists in matching conditions adds to the preponderance of evidence that the visual aspect of conducting corresponds to the way an ensemble’s performance is perceived.

Implications

Expressivity Implies Contrast/Variety. Stressing the importance of contrast and variety for expressivity to be evident, a community ensemble conductor with 25+ years of experience commented on a highly expressive conductor: “The most expressive (and enjoyable) aspects of this conductor is [sic] his face. He has great facial affect, from stern to goofy.... with much more ‘expressive’ gesture, showing more phrasing, dynamics, and lifts.” It appears that both conductor and choir expressivity, whatever one’s philosophy or view, embrace elements that are varied and/or contrasted. This idea is present in prior research as high vs. low magnitude teachers (Yarborough, 1973) and high vs. low-variety conductors with regards to expressivity (Morrison et al., 2009).

Conductor and Audience. For conducting expressivity, not only is contrast important in

overall expressivity, but also awareness of the “audience.” When considering the ensemble internally, the conductor’s “audience” is the ensemble; however, when in a live performance, the conductor’s “audience” expands to include the patrons. In this case, the conductor is a visual performer while simultaneously a director to the ensemble. Common among choral conductors is a saying made famous by esteemed pedagogue Rodney Eichenberger: “What they see is what you get” (Eichenberger & Dunn, 1994), indicating that the choir’s perception results in the sound they produce. Several participants directly referred to this mantra and many indirectly; it seems to be ingrained in the culture of choral music, even among choristers. For example, a collegiate singer with 25+ years of experience wrote, “The choir responds to what they see. If a conductor is expressionless, so will be the choir. If the conductor is enthusiastic, so will be the choir.” However, in this experiment, many with a similar philosophical belief—which is based on anecdotal and experiential wisdom—were deceived into thinking there was a connection between conductor and choir when one did not actually exist. Additionally, the scientific verdict regarding the direct effect of conductor on ensemble performance remains inconclusive, yet hopeful (Acklin, 2009; Price & Chang, 2006; cf. Grady, 2014a, 2014b, 2014c). Furthermore, a professional chorister expressed that “expressivity is more caught up in what we see than in what we hear. We can play with [expressive elements] all we want, but [they] have to come with visual representation.... Expressivity has to come through in the way both singers and conductors breathe, look, and relate to the music.”

This study robustly demonstrates that audiences perceive an ensemble’s performance differently, dependent on the amount of expression visually seen in a conductor. Based on the findings of this study—that the visual expressivity of the conductor has a significant effect on the perception of the ensemble’s performance—Eichenberger’s philosophy can be modified and

adapted to a performance setting: “What they see is what *they hear*.” In other words, what the audience visually perceives largely determines what they hear. The responsibility of the conductor continues beyond merely directing an ensemble, to making more apparent the salient features of the sonic experience in a way that makes sense to the audience. According to another collegiate singer with 25+ years of experience, the conductor “should always at least subtly reflect what the conductor wants the singers and the audience to feel when hearing the piece.”

Since it appears that some people tend to view the effectiveness of gesture, as measured in an expected response by the ensemble, as conveyed emotion in conducting (cognitive) while others look for a congruent gauge of general emotional content between conductor and ensemble to measure conveyed emotion in conducting (affective), it seems that a model accounting for both lenses is key. Perhaps melding the technique of conducting with the art of dancing will accomplish both the “appropriateness” that the cognitive lens desires and the embodiment of free and varied expression that the affective lens seeks. A community choir singer, who is also a conductor of both bands and choirs, advocated for this balance:

While it is vastly important for your conducting to convey and connect with the ideas of the piece, it is also pivotal that the choir be able to read and understand your conducting.... You do not want your audience to feel like they are sitting in a six-hour church sermon, but you also do not want them to feel that they are in a gaudily over-done off-Broadway show.

A collegiate singer with 25+ years of experience implied, from a more negative perspective, that the inexpressive conducting must be considerably more boring from an audience member’s perspective.

Whatever an audience member’s bias may be, it seems clear that most want to experience

a performance “where the choir and conductor are clearly connected...where there seems to be a give-and-take between choir and conductor,” as stated by one collegiate conductor with 25+ years of experience. This preference for high levels of expressivity has been consistently reported in research regarding ensembles and conductors. This sort of symbiotic responsiveness seems to provide corroborating, affirming evidence to the audience that the expressive intentions and musical nuances of the conductor and ensemble are authentic and present, suggesting the ideal congruence that seems to heighten the expressivity of a live musical performance. Therefore, the role of the conductor in performance is not simply to direct an ensemble and to stay out of the way of the music, but also to create a visual experience that maximizes the aural experience of the audience and so honors the composer and the live art.

Role of Conductor for Choral Expressivity. The following implications flow directly out of the emergent data and quantitative findings of this research study and reflect the perspectives of participants. The implications for a conductor who wants to be perceived as expressive and as contributing positively to the overall expressivity of her ensemble’s performance are fairly complex and demanding. Foundationally, the expressive conductor must master nonverbal communication and leadership skills. Then the expressive conductor will learn to demonstrate these foundational skills in rehearsal as both a director and a movement specialist for the audience of the choir. Finally, in performance, the expressive conductor will continue the roles of director and dancer in service to the choral art and its profound service to humanity.

Foundation: Nonverbal Communication and Leadership. According to the emerging ideas from the participants’ comments, the two elements that build a solid foundation for an expressive conductor are nonverbal communication skills and exemplary leadership. The participants’ ideas regarding nonverbal communication skills and exemplary leadership are

reflected in the next few paragraphs. From a technical standpoint, expressive conductors will have a holistically authentic command of nonverbal communication, including gesture, independence of arms/hands, meaningful eye contact, and facial expressions with intent. Gesture should be appropriate and intentional, and consist of more than size and activity; nuances on every level should constantly be explored for maximal expressivity. Musical sound has multi-dimensional shape; if visual embodiment of that shape is a goal of conducting, then independence of hands must be mastered. Musical scores should be prepared and learned almost to the point of memorization, if possible; this preparation enables increased and meaningful eye contact with singers. Finally, various aspects of facial expression and the emotion conveyed in those various aspects must be explored with diligence.

In the minds of the participants, ideally it is the mastering of each of these nonverbal skills individually and collectively that creates an authentic foundation for the expressive conductor. These fundamentals tend to be the where conducting curricula reside, but for the truly expressive conductor, this is merely a part of the foundation. According to participant responses, exemplary leadership must also be learned.

Specifically, participants commented that conductor leadership demands that an expressive conductor know the score, the inherent musical intentions of the score, and the externally expressive intentions she desires to include in production of the living art. She must have a collaborative connection with the instrumentalists, such that they become a part of the creative process. Finally, the expressive conductor must learn to be a psychological caretaker of her singers.

A variety of representative comments from the qualitative data revealed that the leadership conductors provide may influence the sound they get from their choirs. Psyches are

attached to the “instruments” of the choir, and as such, perhaps conductors should expand their role to be a little more human in their connection and leadership. A community chorus singer with 9-16 years of experience gave great advice when writing, “Keeping the body relaxed and inviting encourages healthy sound.” Singers want to be reminded, encouraged, and validated, even in a professional ensemble context. A professional chorus singer with 17-24 years of experience shared, “The conductor of the choir I’m in could do more to help us singers. He sometimes feels like it should be ‘up to us,’ but then why is he standing in front of us? To remind, encourage, and validate us.”

As indicated by the participants, the most expressive conductors seem to have something in the way of leadership that less experienced conductors do not possess (cf. Bergee, 2005). In order to convey a broad and deep gamut of expression, a conductor must have life experience, rapport with people, and significant study and practice of conducting. According to a conductor with 25+ years of experience, “Comfort and naturalness in conducting can only be accomplished through years of practice and experience...As our life progresses, our experiences accumulate, and we become rich human beings. Being able to convey...life experiences to a choir is a gift, talent, and learned ability that evolves over time...much like a fine wine.”

Director/Dancer for Choir and Audience. The most successfully expressive conductor will understand that, while working for specificity of gesture is crucial to the conducting process, not every chorister perceives success by specificity. Just as different learners require pedagogues to adapt their approaches to fit the variety of learning styles, so must an effectively expressive conductor adapt his conducting style to fit the contrasting lenses through which singers and audience members perceive conductor movement. In this way, a conductor may sometimes convey specific gestures and sometimes overall moods; in other words, the conductor may

conduct between various levels of micro- and macro-expressivity, dependent on the needs of the ensemble and/or individuals within the ensemble.

In this sense, the role of conductor is that of pedagogue, rehearsal technician, visionary, and driver—all in balance. According to participants' comments, the rehearsal process clarifies technical and emotive intent that is hopefully present in the nonverbal communication and leadership of the conductor, and the rehearsal also serves as the opportunity for the conductor to develop technical and musical skills toward those technical and emotive expressions. Participants stated the assumption that throughout this process, the expressive conductor is incorporating both verbal and nonverbal directions to assist the singers in the mechanics and technique of their performance, including breath, tone, resonance, and diction; mechanics of the music, including beat clarity and clear entrance and cut-off cues; as well as musical intent, including dynamics, phrasing, articulation, and character.

As dancers incorporate both technical and expressive elements into their performances, so also can conductors incorporate both technical and expressive elements into their performances for their choirs, and by extension for their audiences (in the traditional sense of the term). By approaching conducting as a visual art, both specificity of communication and overall intent can be fused in a way that accounts for the choir's perception of what the conductor wants. "What they see is what you get" is true to the extent that a conductor does not reduce what they see exclusively to a cognitive realm. The most truly expressive conductor engages and connects on both cognitive and affective levels.

Role of Ensemble Members for Choral Expressivity. The following implications flow directly out of the emergent data and quantitative findings of this research study and represent the perspectives of participants. The implications for the role of the choir are fewer, since the

vast majority of the explanations expounded upon the visual component. Nonetheless, the implications for a choir that wants to be perceived as expressive and as contributing positively to the overall expressivity of the performance are also important. Foundationally, the expressive choir must be able to listen and create the music in alignment with each other, understand what is emotionally expected of the music, and know how to convey those emotions like a good actor. An expressive choir must understand and have command of the technique required to create emotion in the voice, including variations and contrast in breath management, tone, vibrato, resonance, consonants and vowels, dynamics, and articulation. Finally, the expressive choir will be able to communicate nonverbally the emotion of the music in the body, including facial expression, orientation of the body in posture and gestalt, and appropriate movement of the body.

Model for Choral Expressivity: Performer Roles and Audience Perception

Foundation for a Model. Because of the current study's findings regarding both the importance of conductor expressivity in the perception of both conductor and ensemble expressivity and the lenses through which people evaluate conductor and choir expressivity, the beginnings of a model for choral expressivity in performance is proposed. This model calls for a maximally expressive conductor, defined in balance by both the cognitive and affective ways in which people assess expressivity, as well as the elements that seem to contribute to the assessment of expressivity. The assumptions and foundations of this model are founded in the quantitative and qualitative findings of this study.

Many of the qualitative comments indicated that evaluator preferences for certain aspects of expressivity became the bar by which the evaluator perceived expressivity in a performance. While attempting to account for the complexity of possible biases, the researcher proposes a model of choral expressivity that allows for a multiplicity of biases and lenses and expands the

current role of conductor to include not only rehearsal technician/pedagogue and director/communicator, but also visual performer/dancer, such that biases and preferred lenses for evaluating a choral performance (as discovered in this study) are taken into account.

Assumptions of the Model. The model assumes that choral expressivity involves both the ensemble and conductor and that choral performance is both aural and visual, the aural experience being the music and the visual being the singers, players, and conductor. Interplay between conductor and choir (balance of expression and being meaningful) is also assumed. The model that follows assumes the integration of all the technical elements that, according to participants and most conducting methodologies, seem to contribute to conveyed expression in conducting and singing. Additionally, leadership, conductor-to-choir rapport, knowledge of the formal structure and historical background of a piece, and historically informed performance practice all contribute to greater, more authentic, and appropriate expressivity. A singer with more than 25 years of experience in a university ensemble said it eloquently:

The sincerity, enthusiasm, energy, musicality, skill and passion of the conductor, as well as her/his patience with, love for, and kindness to the choir, are the most important factors for obtaining a high quality production from the choir.... Then choir members want to share the conductor's vision.

This attention to the whole human being is rarely discussed in conducting classes or techniques classes and yet may be fundamental to successful artistry, particularly among amateur musicians.

It is even more rare for a conducting textbook to address the conductor as a visual performer/dancer for the audience. Traditionally, college conducting courses teach a linear model for a performance by ensemble and conductor, where the conductor communicates to the choir (acting as the conduit between the printed music and the choir's performance) and the choir

communicates to the audience. However, this study and prior research have robustly demonstrated that the visual aspects associated with a musical performance influence the perception of outside observers. As another university choir singer with 25+ years of experience simply stated, “A good conductor inspires and connects with his group *and the audience*” (italics added). Another singer with 25+ years of experience who sings in a semi-professional chorus implied that “the conductor influences the perception of phrasing from the perspective of the audience.” If the visual aspect of conducting influences an observer’s perspective of the choir’s performance, then the conductor is also a part of the choral performance. It would behoove conductors around the world to begin considering approaching their role in performance to include that of a visual performer/dancer in their ensemble’s performances.

In seeking to account for all of the perspectives represented in the qualitative data, this model stresses the importance of the conductor and choir collectively bringing the audience into the intimacy of their relationship and expression, such that the music becomes equally meaningful for all, including the audience. In the moment of the performance, the goal is to allow the audience to be as much on the inside of the art as is humanly possible. The current study rigorously indicates that the level of conductor expressivity is important and effects the perception of that performance.

Conductors—young and old—would be wiser for considering the implications of this study. Perhaps the choir needs nothing from the conductor in a given moment, but what about the needs of the audience? Perhaps the audience needs to understand/perceive more fully the salient features of the music. Conductors may be able to serve the audience’s engagement with and understanding of the art in a more profound way by being aware of the needs of the audience as well. While many conductors still advocate that the conductor should not “get in the way” of the

choir's performance, this study and the body of research in which this study is situated profoundly illustrate that such minimalist approaches to conducting may actually be “getting in the way” of the choir's performance!

Model for Choral Expressivity. The model below (see Figure 5) illustrates the interplay of visual and aural information between choir and conductor and these performers and the audience, accounting for the two primary lenses of interpretation that emerged from the present study's exploration of the participants' views of choral expressivity. This exploration led to a theoretical construction about how people perceive conducted musical performances. Particularly, the researcher discovered that, while outside observers *evaluate* similarly (cf. quantitative scores), they may *perceive* differently (cf. lenses), the performance of both conductors and choirs. Chapter 5 has laid the foundation for this model and explained the assumptions toward the present model as a pictorial combination of the discoveries of the quantitative and qualitative inquiries of this study. While this model may be conceived as pedagogical or used to frame conducting curricula, in this immediate context, the model serves as a visual representation of the process of expressivity perception in choral performance, as it was discovered in this study and presented and discussed in chapters 4 and 5.

Ultimately, this model illustrates the process of perception as it occurs in the minds of the audience (observers outside the ensemble). In the illustrated model, the audience observes continual transmissions of visual information between conductor and choir and of aural information from choir to conductor and makes perceptive judgments based on criteria through one or both of two lenses—cognitive measurement and affective transfer. The practical implications of this model indicate that the most effective conductor will cater to both lenses in

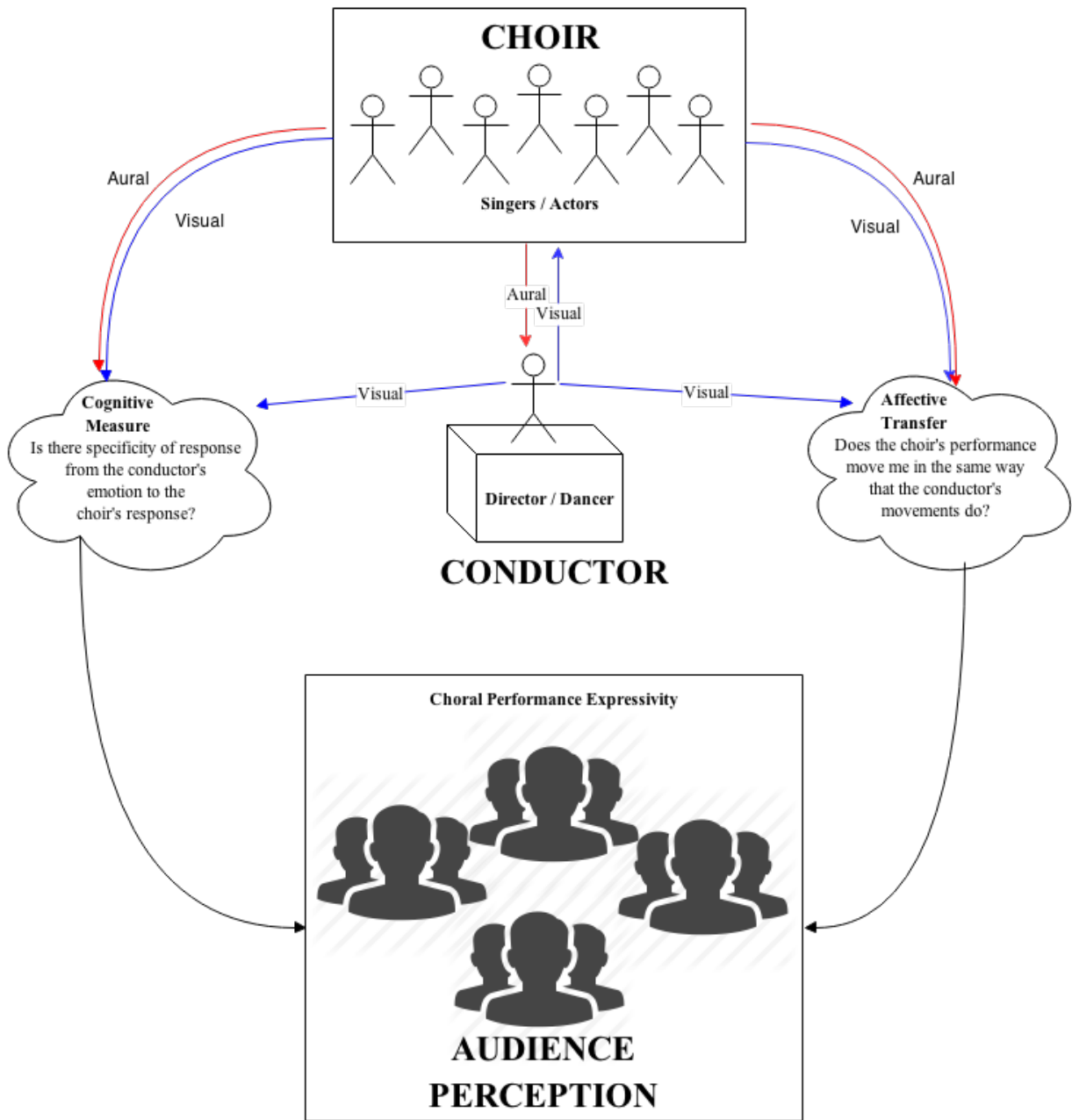


Figure 5. Model for Choral Expressivity: Performer Roles and Audience Perception

the visual information she gives, such that each person in the audience perceives the performance in the best light possible. This extends the role of the conductor beyond that of teacher/director (“director” in the model) also to include visual performer/dancer (“dancer” in the model). This model lays the foundation for conducting that is not merely about communication with the ensemble members, but also encompasses communicating with and connecting to the audience by way of movement—not all that different from a dancer who communicates both by specific gesture and general embodiment in his movements.

Future Research

This study raises a few important questions for future research to continue to explore. First, given what this study and prior research show regarding the dominance of visual information in the perception of an audio-visual musical performance—and particularly visual information by way of the conductor—do differing sources of that visual information have the same effect? In other words, would the visual aspects of an ensemble’s performance have similar effects to those of a conductor, or is the effect and this phenomenon unique to the musical leader’s visual communication of information?

Additionally, this study reveals ambiguity as to the difference between the effects of ensemble performance quality and ensemble expressivity on the perception of an ensemble. Would comparing differing levels of treatment conditions of both quality and expressivity yield similar or different results on identical conducting performances? Asking this question will help clarify the difference between ensemble quality and expressivity and help us to understand more clearly how conductor performance perception is altered.

This study revealed that expectations of observers led to two ways of perceiving the performance of conductor and ensemble: cognitive measurement (directive conducting) and

affective transfer (general expressivity). It would be interesting to see if these expectations and the alignment or misalignment of these expectations with conductor intent (directed expressivity or general expressivity) might influence both scores and descriptions of participants.

Extending Explorations of Expressivity. Further research extending the literature's exploration of expressivity in ensemble performance is needed. Similar explorations into ensemble expressivity might consider fewer videos or shorter clips, various camera angles, a wider variety of musical styles, more nuanced representations of expressivity, and/or split screens showing both choir and conductor. As a means of control, this study chose not to explore the visual expressivity of the choir's performance; however, perhaps future explorations should, especially given that many participants of the current study hoped to gauge the choir's performance based on visual information from the singers. This study was also limited to clear contrasts of conducting and choir expressivity; moderate differences in expressivity conditions might yield different results. Because it seems clear that authentic connection between conductor and choir is assumed and valued, perhaps future research should consider live performances in their natural contexts. This study revealed the need for additional explorations into the effect of ensemble expressivity on conductor expressivity. The current research examined modes differing in visual and audio stimuli combinations; in line with prior literature, future research might also consider presentation modes that vary the perspectives of sound and sight.

Visual Expressivity of Ensemble Performers. It is commonly accepted that experienced directors, teachers, and conductors often emphasize to their singers the importance of their facial expressions, gestalts, and, in cases such as gospel choir or show choir, movements that are in line with the character and expression of the music. Does this focus on the visual contributions by ensemble members achieve a more fulfilling aural experience for the audience? The current

study did not address this visual aspect of the ensemble performance, as it left this potentially confounding factor was left out of the experimental design. Future research should include explorations into the effects of the singers as visual stimuli on the perception of performances by both the conductor and the choir. One participant, speaking for many who echoed this sentiment, wrote, “It would have been useful and interesting to see the performer’s (singer’s) faces as well. This also helps in assessing expression during a performance and probably effected [sic] the ratings.” Another participant indicated that it is “exceedingly difficult to determine emotional involvement without seeing body language and facial expression. *Performance is more holistic than that*” (italics added).

Varying Levels of Expressivity. It would seem that varying levels of expressivity, rather than distinctively contrasting levels of expressivity would yield different, and perhaps illuminating, results. Future explorations of both ensemble and conductor expressivity might consider moderate differences in levels of expressivity, including representative examples from varying levels of performance.

Authentic Live Performances. Future research should continue to examine the effect of both maximally and minimally expressive conductors and ensembles on the perception of the ensemble and conductors. This line of research has traditionally used lab performances as a means of controlling for the experimental treatments. As a means toward authentic performances and explorations into real-life application, these explorations might consider examining these effects in live performances and their natural contexts.

Ensemble Performance Effects on Perception of Conductor. Continued research is needed to best understand the effects that an ensemble performance has on the perception of its conductor. This study’s findings regarding the effect of ensemble performance on the perception

of conductor were opposite of those of Bender and Hancock (2010) and Silvey (2011). It remains unclear whether ensemble performance *quality* affects the perception of *maximally* expressive conducting or ensemble performance *expressivity* influences the perception of *minimally* expressive conducting. In prior research, performance quality was compared between secondary and professional or college wind ensemble performance; the current study compared expressivity using the same collegiate ensemble and varied the level of externally expressive elements of that ensemble's performance. Researchers should consider comparing ensemble performance quality and expressivity effects on the perception of conductor performance.

Other Presentation Modes and Stimuli. The current study revealed differences between single- and dual-mode presentations of aural and visual performances by choir and conductor, respectively. Further investigations might include various perspectives in each of the presentation modes, such as various camera angles, a wider variety of musical styles to test for similar results.

Presentation Order and Additional Factors. Future research should examine more specifically what additional factors should be considered when expressivity conditions are not matched. Future research could further explore how the type of ensemble and presentation order might be influencing the ratings of conductors. Perhaps the participant's ensemble type has to do with how much or how little is expected from a conductor and the level of specific gestural communication assumed to be necessary.

The implications of these explorations into expressivity have significance for performances that connect with and engage choral audiences. As one academic conductor with 25+ years of ensemble experience so humorously stated,

The most stirring performances—the best of the best—are always led by a conductor

who...appears to be engaged. Humans are strongly visual creatures (you SEE my point), so we cannot help but be influenced by what we see. So once we get all conductors looking engaged, we are going to talk about the singers...

Exploring the Model of Choral Expressivity. In the vein of extending this study's findings, researchers may desire to explore specific or general aspects of the Model of Choral Expressivity. Future research could use the model to explore various facets of the roles of performers and audience perception. Investigations of the model in part or as a whole could be explored in a laboratory or live performance experience. This study illuminated the cognitive measure and affective transfer lenses of perception, which future explorations could seek to replicate and/or measure.

The model includes the perspective of aural and visual information transfer between conductor and choir. As literature continues studying the directive measures of conductor-ensemble relationships and effectiveness, it would be helpful to conducting pedagogy and rehearsal techniques if researchers would use this study's theoretical lenses to understand better the rehearsal process from both angles of perception. While this study (and consequently, this model) did not specifically address the perspectives of ensemble members, a handful of participants indicated and/or assumed that ensemble members processed the visual information in much the same way as the audience, that is, through the two lenses (cognitive measure and affective transfer). The results of the study are definitive in indicating that the visual mode of perception contributes more to the evaluation of both the conductor and the ensemble in choral performance; however, little is known regarding the theoretical lenses through which audiences and ensemble member's perceive expressivity. Future research could include more exploration of these theoretical lenses through which people view expressivity in an ensemble context,

specifically cognitive versus affective means of conductor-choir responsiveness. More specifically, future research may wish to distinguish between lenses to assess if ratings differ dependent on styles of expressive conducting. Additionally, simultaneously addressing both lenses of perception may be important to future explorations of the connection of neuroscience in an expressive conducting setting (cf. Erdemir et al., 2012).

If affective measures are present in outside observer's perception of conductors, so too they must be in ensemble members' perspectives. Researchers should explore how approaching conducting as a visual performance art, where both directive and affective communication to both ensemble and audience occurs through the use of signature movements and gestures, perhaps similar to dance, might satiate the desire for expressivity for those viewing it through either a cognitive or affective lens. More specifically, in order to understand the phenomenon of ensemble expressivity in performance, future research could quantitatively and/or qualitatively explore the proposed model of choral expressivity in part or in whole. Such explorations might incorporate the use of Laban Movement Analysis (cf. Jordan, Wyers, & Andrews, 2011), or other systems of movement through time and space, to encourage the development of expressively technical conducting. Gambetta (2005) strongly suggests that "LMA instruction would be a valuable addition to any conductor's training and practice regimens regardless of experience, proficiency, or area of specialization."

When discussing the confluence of physical movement and musical expression, Gambetta (2008) emphasizes that "Eurhythmics encourages the integration of kinesthetic and musical intelligences through bodily movements made in response to *external* musical stimuli, while LMA [Laban Movement Analysis] reaches beyond the stimulus/response model to recognize that movement is also the channel through which *internal* musical abstractions become

transformed into audible musical expression." Since conducting, similar to dance, seeks to communicate internal expression through movement and gesture, it seems appropriate that conducting should explore what LMA may have to offer. Furthermore, since audiences are accustomed to the communication of expressive intent through movement in the art of dance, together with this study's findings, it seems reasonable that conducting pedagogy should begin to explore how incorporating LMA may address both directive/cognitive and affective roles that a conductor plays in the perception of performance.

Additional reforms in conducting pedagogy and rehearsal techniques should also be explored. The current study reveals the need to investigate the current content of conducting technique and pedagogy curricula for their content and approaches, including how they teach expressivity (cf. Krudop, 2003) and how they incorporate the philosophy of conductor as a visual performer. Further research could integrate the use of the model into an existing undergraduate conducting curriculum to test its effectiveness. Specifically, researchers could explore the simultaneous teaching of conducting technique and expressivity by use of corresponding movement/dancer training—such as the incorporation of the Laban effort actions, states and drives into conducting fundamentals from the first day of conducting class through the final sequence of conducting courses—to determine if this process contributes to creating conductor-performers who are simultaneously non-verbal communicators/directors and visual performers/dancers. Examining possible reforms to incorporate holistic expression are indicated by prior research as well (Bartee, 1977; Byo & Austin, 1994; Bergee, 2005; Krudop, 2003).

Conclusion

As Edmonds, Berlioz, and a myriad of master conductors have advocated for expanding the conductor role beyond that of beating time, this study, supported by the body of research in

which it is situated, recommends expanding the role of conductor beyond that of directive communication of information to include also that of affective display of visual information. It appears that, if the visual performance of a conductor can fully embody both the directive specificity and general embodiment of the music, she will enhance the perception of the ensemble's performance. What a profound responsibility and privilege!

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Appendix A

Glossary of Terms for the Average Choral Conductor

Glossary of Terms for the Average Choral Conductor

ANOVA. Analysis of Variance (ANOVA) are used to analyze differences between group means and their associated procedures.

Bonferroni correction. In statistical analysis, the Bonferroni correction method is used to examine individual comparisons after multiple comparisons have been made. It is considered the simplest and most conservative way to control for possible error in multiple comparisons.

Construct Validity. According to Creswell and Clark (2011), construct validity refers to whether or not the instruments measure what they intend to measure (p. 210).

CRDI. Continuous Response Digital Interface (CRDI) is an instrument created by Florida State University that measures participant response to or perception of one or more musical stimuli in real time.

Homoscedasticity. According to Laerd Statistics (2014), homoscedasticity is one of the assumptions of linear regression where the variances along the line of best fit remain similar as the data moves along the line.

Linear Regression. This statistical test looks for a linear or scalar relationship between two or more variables with a dependent variable, such that as one variable is increased, so is the dependent variable.

“McGurk effect.” The “McGurk effect” is the pairing of one sound with the visual component of a different sound whereby the observer interprets or perceives a third sound.

Normal Q-Q Plot. A Normal Q-Q Plot uses patterns of data points to compare the quantiles (or estimation of quantiles) of two distributions.

Sphericity. According to Laerd Statistics (2014), “Sphericity is the condition where the variances of the differences between all combinations of related groups (levels) are equal. Violation of sphericity is when the variances of the *differences* between all combinations of related groups are not equal. Sphericity can be likened to homogeneity of variances in a between-subjects ANOVA.

Single vs. Dual Mode. When using two modes for stimuli (e.g., aural and visual) in a research study, the presence of both modes is considered to be dual mode, while the presence of one or the other mode is considered to be a single-mode presentation.

***t*-test.** A *t*-test is an inferential statistical determination whether two data sets are significantly different from each other. There are various types of *t*-tests for comparing different kinds of data sets, each requiring slightly differing assumptions.

Appendix B

Sample Recruitment Materials

The following is an example of a letter, email, or message that the researcher shared with directors of ensembles and organizations:



[insert date]

Dear [Director of {Name of Ensemble or Organization}],

I am a doctoral candidate at the University of Washington doing some research in conducting and choral performance expressivity for my dissertation. I am writing to ask for your assistance and permission to invite the members of your organization to participate in my online research study regarding expression in choral performance. *Participation in this research furthers the causes of music education and the art of choral music.*

The University of Washington Choral Expressivity Study examines the important phenomenon of the interaction of sensory perception modes in choral performance expression. In 20 minutes, participants will evaluate choral performances for their levels of expression.

I am relying on people like you to help me find participants. You can help me out in two ways:

1. Invite the members of your organization to participate.
2. Publish to your audiences and other organizations and colleagues in the music ensemble fields (via Facebook, email, etc.).

I hope to have all data collection complete by [insert date]. *Timeliness and participation in the research are important. Please pass along the information as soon as you are able.*

The only initial requirements for participation are:

- **18+ years old**
- **Has participated in a conducted music ensemble**

I need a wide variety of **conductors, choristers, and band/orchestra players**. Your help in *spreading the word to anyone inside and outside your organization* is particularly helpful.

Attached are two documents. The first is a **template for your introduction of the study to your group, on Facebook, or via email to other people**. *Please use this in part, in whole, or not at all; it is merely an option that may save you time.*

The second document is the body of my letter to any potential participants. *I ask that you not alter the text of my letter, but simply copy/paste it into any platforms you use to share it. My letter includes a brief description of the purpose and methods of the research, as well as a*

link to the home page for the study (<https://www.psychdata.com/s.asp?SID=161294>). (If you want a shorter version for posting online, I have several versions approved by the Institution Review Board I can send you upon request.)

Again, thank you for helping me to get as many participants as possible by way of your network. If you have any questions or concerns, please contact me anytime. *I also encourage you to take the survey, if you have not already done so.*

With gratitude,

Jeremiah Selvey, Doctor of Musical Arts in Choral Conducting Candidate (ABD)
University of Washington, School of Music, Choral Division
404-242-4195 cell / jselvey@uw.edu
[insert date]

The following is a template for leaders or directors of organizations to introduce the study to their members, if they so chose:

Dear Ensemble Members [or Conductor and Music Ensemble Performers],

I was recently made aware of a great opportunity for all of us to further the causes of music education and the art of choral music by way of participating in an interesting research study. The Choral Expressivity Study at the University of Washington examines the important phenomenon of the interaction of sensory perception modes in choral performance expression.

In 20 minutes, you will take an online survey that involves evaluating choral performances for their levels of expression.

I encourage you to take part and to have fun in the process. Click the link for more information and to get started: <https://www.psychdata.com/s.asp?SID=161294>.

Hurry. The study closes soon!

Cheers,
[your name/signature]

The following is a letter, email, or message shared directly by the researcher or a leader/director of an organization or ensemble:

Dear Potential Participant,

Are you at least 18 years old? Have you ever been in a conducted music ensemble? If you answered yes to both questions, **I WANT YOU**.

I am a doctoral candidate at the University of Washington in Seattle, and I need singers, instrumentalists, and conductors for my **Choral Expressivity Study**. *This study examines the interaction of sensory perception modes in choral performance evaluations. The interactive survey, involving the rating of choral performances for their level of expression, will take you about 20 minutes.*

By taking the survey, you will be furthering the causes of music education and the art of choral music. Not only that, donating your time will help me finish my dissertation more quickly, for which I am deeply grateful. The research depends on volunteers like you. **Click the link for more information and to get started: <https://www.psychdata.com/s.asp?SID=161294>.**

The study closes soon, so go for it now. Thank you for your contributions to music education and the choral art.

Thank you!

Jeremiah Selvey, Doctor of Musical Arts in Choral Conducting Candidate (ABD)
University of Washington, School of Music, Choral Division
404-242-4195 cell / jselvey@uw.edu

The following are representative samples of online media templates. Minor adaptations for tailored recruitment were made, in accordance with the policy of the Institutional Review Board:

Sample 1

Help me finish my dissertation and further the cause of music education and the art of choral music at the same time.

1. Take the survey: <https://www.psychdata.com/s.asp?SID=161294>
2. Share the survey with your friends, family, and colleagues. I need **conductors, singers, and instrumentalists**.

The Choral Expressivity Study examines how people rate expression in choral performances. You get to rate YouTube videos of choral performances.

Hurry! The survey closes soon!

Questions? Contact Jeremiah Selvey, Lead Researcher, University of Washington Choral Expressivity Study (jselvey@uw.edu)

<https://www.psychdata.com/s.asp?SID=161294>

Sample 2

Music ensembles:

Please invite your performers and conductors to participate in the Choral Expressivity Study at the University of Washington. This research examines how people rate expression in choral performances and furthers the cause of music education, conducting, and the choral art.

More information is found on the website...

<https://www.psychdata.com/s.asp?SID=161294>

Thank you,
Jeremiah Selvey (jselvey@uw.edu)

Sample 3

The University of Washington Choral Expressivity Study needs YOU.

Are you 18+ years, and have you ever participated in a conducted music ensemble?

Click on <https://www.psychdata.com/s.asp?SID=161294> to find out more about how you can further the cause of music education, conducting, and choral expressivity.

Sample 4

Conductor friends:

Please help me recruit participants for my doctoral dissertation. I need **conductors, singers, and instrumentalists**. The Choral Expressivity Study examines how people rate expression in choral

performances and benefits music education, conducting, and the choral art.

More information is found on the website...

Thank you for your help!

<https://www.psychdata.com/s.asp?SID=161294>

Sample 5

Instrumental friends:

Please help me recruit participants for my doctoral dissertation. I need **conductors, singers, and instrumentalists**. The Choral Expressivity Study examines how people rate expression in choral performances and benefits music education, conducting, and the choral art.

More information is found on the website...

Thank you for your help!

<https://www.psychdata.com/s.asp?SID=161294>

Sample 6

Singer friends:

Please help me recruit participants for my doctoral dissertation. I need **conductors, singers, and instrumentalists**. The Choral Expressivity Study examines how people rate expression in choral performances and benefits music education, conducting, and the choral art.

More information is found on the website...

Thank you for your help!

<https://www.psychdata.com/s.asp?SID=161294>

Sample 7

[Insert Name]:

Please help me recruit participants for my doctoral dissertation. I need **conductors, singers, and instrumentalists**. The Choral Expressivity Study examines how people rate expression in choral performances and benefits music education, conducting, and the choral art.

More information is found on the website...

Thank you for your help!

Jeremiah (jselvey@uw.edu, 404-242-4195)

<https://www.psychdata.com/s.asp?SID=161294>

Sample 8

Volunteer opportunity for Music Ensemble Performers.

The Choral Expressivity Study at the University of Washington needs **conductors, singers, and instrumentalists** to evaluate levels of expression in choral performances. It only takes 20 minutes.

More information is found on the website...

<https://www.psychdata.com/s.asp?SID=161294>

Sample 9

Dear Potential Participant [or Insert Name],

Are you at least 18 years old? Have you ever been in a conducted music ensemble? If you answered yes to both questions, **I WANT YOU**.

I am a doctoral candidate at the University of Washington in Seattle, and I need participants for my **Choral Expressivity Study**. *This study examines the interaction of sensory perception modes in choral performance evaluations. The interactive survey, involving the rating of choral performances for their level of expression, will take you about 20 minutes.*

By taking the survey, you will be furthering the causes of music education and the art of choral music. The research depends on volunteers like you. **Click the link for more information and to get started:** <https://www.psychdata.com/s.asp?SID=161294>.

The study closes soon, so go for it now. Thank you for your contributions to music education and the choral art.

Sincerely,

Jeremiah Selvey, Doctor of Musical Arts in Choral Conducting Candidate (ABD)
University of Washington, School of Music, Choral Division
404-242-4195 cell / jselvey@uw.edu

Sample 10

Support Choral Research!

University of Washington doctoral candidate Jeremiah Selvey is running the Choral Expressivity Study, in which he is examining how **singers, instrumentalist, and conductors** compare in their evaluations of conductor and choral expressivity.

It only takes 20 minutes. Click on the link for more information...

<https://www.psychdata.com/s.asp?SID=161294>

Sample 11

Support Choral Conducting Research!

University of Washington doctoral candidate Jeremiah Selvey is running the Choral Expressivity Study, in which he is examining how **singers, instrumentalist, and conductors** compare in their evaluations of conductor and choral expressivity.

It only takes 20 minutes. Click on the link for more information...

<https://www.psychdata.com/s.asp?SID=161294>

Sample 12

Support Conducting Research!

University of Washington doctoral candidate Jeremiah Selvey is running the Choral Expressivity Study, in which he is examining how **singers, instrumentalist, and conductors** compare in their evaluations of conductor and choral expressivity.

It only takes 20 minutes. Click on the link for more information...

<https://www.psychdata.com/s.asp?SID=161294>

Sample 13

Support Research on Music Expression in Performance!

University of Washington doctoral candidate Jeremiah Selvey is running the Choral Expressivity Study, in which he is examining how **singers, instrumentalist, and conductors** compare in their evaluations of conductor and choral expressivity.

It only takes 20 minutes. Click on the link for more information...

<https://www.psychdata.com/s.asp?SID=161294>

Sample 14

Support Music Research!

University of Washington doctoral candidate Jeremiah Selvey is running the Choral Expressivity Study, in which he is examining how **singers, instrumentalist, and conductors** compare in their evaluations of conductor and choral expressivity.

It only takes 20 minutes. Click on the link for more information...

<https://www.psychdata.com/s.asp?SID=161294>

Sample 15

The Choral Expressivity Study at the University of Washington closes soon [or insert date]!

If you have not yet participated, NOW is your chance.

<https://www.psychdata.com/s.asp?SID=161294>

Sample 16

Choral Expressivity Study at University of Washington

How do YOU rate musical expression?

<https://www.psychdata.com/s.asp?SID=161294>

Sample 17

How do YOU rate musical expression?

<https://www.psychdata.com/s.asp?SID=161294>

Sample 19

Have you always wanted to be one of the judges for American Idol or The Sing-Off? Now is your chance to be the judge...

Judge these performances...

<https://www.psychdata.com/s.asp?SID=161294>

Sample 20

You be the judge...Let's see which performance you think is most expressive...

<https://www.psychdata.com/s.asp?SID=161294>

Sample 21

Do you have access to major email lists of musicians? Please consider allowing me to advertise my research study through you. Contact me, and I will send you information (jselvey@uw.edu).

Choral Expressivity Study at the University of Washington:

<https://www.psychdata.com/s.asp?SID=161294>

Appendix C

Musical Passages (Fauré, 1884)

à André Messager.

Madrigal.

à 4 voix (Soli ou Choeur.)

Poésie d'Armand Silvestre.

Gabriel Fauré, Op.35.

Andante quasi Allegretto.

Musical Passage #1

7

p molto espressivo
Sa - chez, ô cru - el - les Beau -

Ped. à chaque mesure

mf
tés — que les jours d'ai - mer — sont comp - tés —

J. 2158 H.

p *molto espressivo* *mf*

Sa - chez, A-mou-reux in-cons - tants — Que le

bien d'ai - mer — n'a qu'un temps! Ai - mez quand ou vous

Ai -

p Ai - mez — quand on vous

p Ai - mez — quand on vous ai - - -

J. 2158 H.

ai - - me, *cresc.* Ai - mez quand on vous ai - -
- - mez, *cresc.* Ai - - -
ai - - me, Ai - mez quand on vous ai - -
me, Ai - mez, Quand on vous ai - - - me, Ai -

The first system consists of four vocal staves and a piano accompaniment. The vocal parts are in a minor key and feature a melodic line with lyrics. The piano accompaniment is in the right hand, with a steady eighth-note pattern in the left hand. The word *cresc.* is written above the vocal lines.

f
me,
f
mez,
f
me,
f
mez,

The second system continues the vocal and piano parts. It features four vocal staves and a piano accompaniment. The vocal parts are in a minor key and feature a melodic line with lyrics. The piano accompaniment is in the right hand, with a steady eighth-note pattern in the left hand. The word *f* is written above the vocal lines.

J. 215 H.

The image shows a musical score for five staves. The top four staves are empty, while the bottom two staves contain a piano accompaniment. The piano part consists of two staves (treble and bass clef) with notes, rests, and dynamics. The first measure of the piano part has a dynamic marking of *p*. The piano part features a rhythmic pattern of eighth notes and quarter notes, with some measures containing a sharp sign (#).

Musical Passage #2

12

dolce
Un mê-me des-

p Et no-tre fo-li-e est la mê-me
pp Et no-tre fo-li-e est la mê-me—
tin nous poursuit C'est cel-le d'ai-nier qui nous fuit.

J. 215 H.

En mê-me destin nous poursuit, et no-tre fo-

pp

C'est cel - le de fuir qui nous ai - me; C'est cel - le dai -

pp

C'est cel - le de fuir qui nous ai - me; C'est cel - le dai -

p

C'est cel - - le dai -

li - cest la mê-me; c'est cel - le dai - mer qui nous fuit, c'est cel - le de fuir qui nous

mer qui nous fuit — qui nous fuit

mer qui nous fuit — qui nous fuit

mer qui nous fuit qui nous fuit

J. 2158 B.

ai - me, qui nous ai - me, C'est cel - le de fuir qui nous
cresc. *poco rit.*
 C'est cel - le de fuir, C'est cel - le de fuir
cresc. *poco rit.*
cresc. C'est cel - le de fuir, de fuir
poco rit.
 C'est — cel - le de fuir, de fuir

ai - - - me C'est cel - - - le de
p *a tempo* *pp*
 qui nous ai - - - me C'est cel - - - le de
p *a tempo* *pp*
 qui nous ai - - - me C'est cel - - - le de
p *a tempo*
 C'est cel - - - le de fuir

fuir — qui nous ai — me,
 fuir — qui nous ai — me,
 fuir — qui nous ai — me,
 qui nous ai — me,

pp

Qui nous ai — me —
 Qui nous ai — me —
 Qui nous ai — me —
 Qui nous ai — me —

J. 2158 H.

Imp. E.M.P.L. 93130-9-1987

Appendix D

Supplementary Audio-Visual Materials

Please visit the following website for access to all audio and video stimuli used in this research study: www.jselvey.com/supplementary-materials. If you have trouble finding this site or gaining access to these materials, please contact the researcher at jselvey@me.com.

Appendix E

High- and Low-Expressivity Conducting Continuum

(adapted from Byo and Austin, 1994)

CATEGORIES	High-Expressivity	Low-Expressivity
Right Arm/Hand	<p>Patterned or non-patterned motion indicating musical style and volume</p> <p>Patterned or non-patterned motion that is appropriately variable with regard to spatial dimensions (vertical, horizontal, and sagittal planes)</p> <p>Congruency with the dictates of the music</p>	<p>Pattern is neutral, static, unchanging, or strict time beating</p> <p>Any non-patterned motion that is void of expression.</p>
Left Arm/Hand	<p>Independence from right hand, not functioning as a cue, and expressive in nature</p> <p>Gesture to indicate volume</p> <p>Congruency with the dictates of the music</p>	<p>Mirroring of right hand gesture or pattern</p> <p>Cueing without expression or prominence</p> <p>No movement or idleness</p> <p>Does not use movement to affect expressive elements</p> <p>Turning pages</p>
Eye Contact	<p>Intense looks or fixations on the ensemble</p>	<p>Looking at the score</p> <p>Looking at the floor or ceiling</p>
Facial Expressions	<p>Furrowed (or raised) eyebrows, smiles, grimaces, pursed lips, open mouth, tilted head</p>	<p>Neutral, expressionless</p>
Body Movement	<p>Turning toward a group of performers</p> <p>Forward leans</p> <p>Movement from knee bending</p>	<p>Static and stationary</p> <p>Stick figure-like</p>

Appendix F

Labels for Combinations of Audio and Visual Modes

AURAL MODE

VISUAL MODE

		Expressivity Conditions	Musical Passage #1		Musical Passage #2	
			MAXIMAL	MINIMAL	MAXIMAL	MINIMAL
Conductor #1	HIGH		A	D	I	J
	LOW		C	B	L	K
Conductor #2	HIGH		E	F	M	N
	LOW		H	G	P	O

Appendix G

Home Page and Informed Consent

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



The Choral Expressivity Study is a part of the dissertation work for graduate student Jeremiah Selvey (jselvey@uw.edu) at the University of Washington. The researcher seeks to understand how conductors and ensemble performers rate and perceive expressivity in choral performance. This research may have compelling implications for music performance, conducting, and pedagogy.

Participants will be rating the level of conveyed feeling in eight video excerpts of choral performances. Participation in the study will take participants about 20 minutes, and full completion of all materials is necessary to be included in the research analysis.

Participant Requirements:

1. You must be at the age of majority, for most locations at least 18 years old (and in some states/provinces or countries, up to 21 years).
2. You must be, or have been, a member of any conducted vocal or instrumental ensemble (e.g., as a singer, instrumentalist, accompanist, or conductor).

Additional Requirements:

1. You should be situated in an environment with no competing sounds or events.
2. Please have a fully functioning set of headphones ready to use.
3. Please confirm that the sound on your device is functioning.
4. Read the Informed Consent.
5. Set aside the next 20 minutes.

If you would like to participate, but English is not your primary language, please contact Jeremiah Selvey (jselvey@uw.edu) for assistance.

On the next page, you will read about Informed Consent. Upon giving your consent, you will be advanced to the online survey.

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Informed Consent

Researchers

Principal Investigator & Contact Person for Questions or Concerns

Jeremiah Selvey, Doctoral Candidate, School of Music
Contact Information: 404-242-4195, jselvey@uw.edu

Faculty Advisor

Geoffrey Boers, Director of Choral Studies, School of Music

Researchers' Statement

We are asking you to participate in a research study. The purpose of this consent page is to give you the information you will need to help you decide whether or not to be in the study. Please read the page carefully. You may ask questions about the purpose of the research, what we would ask you to do, your rights as a volunteer, and anything else about the research or this consent that is not clear. When we have answered all your questions, you can decide if you want to be in the study or not. This process is called "informed consent."

PURPOSE OF THE STUDY

The purpose of this study is to explore the phenomenon of how music ensemble performers evaluate and perceive expressivity related to choral performances. Expressivity refers to conveyed feeling in performance. More specifically, participants will be examining the expressivity of choral performances and the conductors of those performances.

STUDY PROCEDURES

Once participants have confirmed proper setup, have dedicated 20 minutes to take the survey, and have answered qualifying questions, they will be led through a series of questions regarding education level, experience in a conducted ensemble, location of residence, and musical identity/experience. None of this information will be specifically linked to participants.

Participants will then watch 8 videos containing choral performance excerpts and rate one or more components of the expressivity level of the performance for that excerpt using a scale of 1 (low) to 10 (high). Participants will also have the option to include an explanation for their ratings. Each of the eight performance excerpts will last about 1 minute.

CONFIDENTIALITY OF RESEARCH INFORMATION

Excepting Internet Protocol (IP) addresses, no specifically identifiable information will be recorded or collected as part of the survey. The researcher will collect IP addresses for the sole purpose of removing repeated data sets from the same user. Before viewing any data, the researcher will check for repeat IP addresses, remove any data sets beyond the first iteration of the given IP address, and then sever IP addresses from data sets prior to analysis. In this way, data that could be connected to individuals will not be linked to participants in the analysis. Confidentiality and anonymity will be maintained in the analysis and reporting.

OTHER INFORMATION

Participation is voluntary. Participants may refuse to answer optional questions or withdraw from this study at any time. Refusing to participate or withdrawing from this study will involve no penalty or loss of benefits to which the subject is otherwise entitled. Initial consent will be confirmed by clicking "yes" below. Ongoing consent will be confirmed by continued participation and/or completion of the survey. Any questions, concerns, complaints, or reports of research-related injuries can be directed to Jeremiah Selvey (jselvey@uw.edu, 404-242-4195).

Participant's Statement

I am at the age of majority (no longer a minor). I have experience as a conductor, accompanist, singer, and/or instrumentalist in a conducted music ensemble. I have in no way (e.g., as participant, performer, or researcher) been a part of any University of Washington study on expressivity before today.

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions or concerns later about the research, I can contact one of the researchers listed above. If I have questions about my rights as a research subject, I can call the Human Subjects Division of the University of Washington at (206) 544-0098.

***1)** Do you give your consent and wish to continue to the online survey?

By answering "yes," you are giving your consent and indicating full agreement with the Participant's Statement above.

Yes [Value=1]

No [Value=2]

Question Logic

If **[Yes]** is selected, then skip to survey **[#161290]**, question **[after #0, Text]** (See "Edit Logic" for details)

If **[No]** is selected, then skip to survey **[#161292]**, question **[after #0, Text]** (See "Edit Logic" for details)

Appendix H

Thank You

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

THANK YOU!

Your responses have been submitted.

If you have any questions or concerns regarding the online survey, please contact Jeremiah Selvey, jselvey@uw.edu.

Please allow the researcher to send you Post-Study Information when this study closes...

- 1) If you would like to receive a summary of this research, please include a valid email address below.

This email address will not be linked to your responses. Additionally, this email address will only be used to send you a summary of the Choral Expressivity Study research.

Appendix I
Introductory Questions

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***1) Do you reside in any of the following locations?**

NOTE: Your country may be listed without your state or province. If your country is not listed OR if your country is listed but your specific province/state is not listed, click "NO, I RESIDE IN A DIFFERENT LOCATION."

--Select--

- ALGERIA [Value=1]
- AZERBAIJAN [Value=2]
- BAHRAIN [Value=3]
- BOTSWANA [Value=4]
- CAMEROON [Value=28]
- CANADA - British Columbia, New Brunswick, Northwest Territories, Nova Scotia, Nunavat, or Yukon [Value=5]
- CHAD [Value=6]
- COTE D'IVOIRE [Value=29]
- EGYPT [Value=7]
- GUINEA [Value=30]
- HONDURAS [Value=8]
- INDONESIA [Value=9]
- JAPAN [Value=10]
- KUWAIT [Value=11]
- LESOTHO [Value=12]
- MADAGASCAR [Value=13]
- MONACO [Value=31]
- NAMIBIA [Value=14]
- NEW ZEALAND [Value=15]
- PHILIPPINES [Value=32]
- PUERTO RICO [Value=16]
- SINGAPORE [Value=17]
- SOUTH KOREA [Value=18]
- SWAZILAND [Value=19]
- TAIWAN [Value=20]
- THAILAND [Value=21]
- TUNISIA [Value=22]
- UNITED ARAB EMIRATES [Value=23]
- UNITED STATES - Alabama or Nebraska [Value=24]
- UNITED STATES - Mississippi or Puerto Rico [Value=25]
- ZAMBIA [Value=26]
- NO, I RESIDE IN A DIFFERENT LOCATION. [Value=27]

Question Logic

- If [ALGERIA] is selected, then skip to question [after #1, Text] (See "Edit Logic" for details)
- If [AZERBAIJAN] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [BAHRAIN] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [BOTSWANA] is selected, then skip to question [after #1, Text] (See "Edit Logic" for details)
- If [CAMEROON] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [CANADA - British Columbia, New Brunswick, Northwes...] is selected, then skip to question [after #1, Text] (See "Edit Logic" for details)
- If [CHAD] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [COTE D'IVOIRE] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [EGYPT] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [GUINEA] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [HONDURAS] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [INDONESIA] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [JAPAN] is selected, then skip to question [after #2, Text] (See "Edit Logic" for details)
- If [KUWAIT] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [LESOTHO] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [MADAGASCAR] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [MONACO] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [NAMIBIA] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [NEW ZEALAND] is selected, then skip to question [after #2, Text] (See "Edit Logic" for details)
- If [PHILIPPINES] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [PUERTO RICO] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [SINGAPORE] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [SOUTH KOREA] is selected, then skip to question [after #1, Text] (See "Edit Logic" for details)
- If [SWAZILAND] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [TAIWAN] is selected, then skip to question [after #2, Text] (See "Edit Logic" for details)
- If [THAILAND] is selected, then skip to question [after #2, Text] (See "Edit Logic" for details)
- If [TUNISIA] is selected, then skip to question [after #2, Text] (See "Edit Logic" for details)
- If [UNITED ARAB EMIRATES] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [UNITED STATES - Alabama or Nebraska...] is selected, then skip to question [after #1, Text] (See "Edit Logic" for details)
- If [UNITED STATES - Mississippi or Puerto Rico...] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [ZAMBIA] is selected, then skip to question [after #3, Text] (See "Edit Logic" for details)
- If [NO, I RESIDE IN A DIFFERENT LOCATION....] is selected, then skip to question [after #4, Text] (See "Edit Logic" for details)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***2) Age.**

How old are you?

--Select-- ▾

- 18 or younger [Value=1]
- 19-25 [Value=2]
- 26-35 [Value=3]
- 36-45 [Value=4]
- 46-55 [Value=5]
- 56-65 [Value=6]
- 66-75 [Value=7]
- 76 or older [Value=8]

Question Logic

If **[18 or younger]** is selected, then skip to survey **[#161292]**, question **[after #0, Text]** (See "Edit Logic" for details)

If **[19-25]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[26-35]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[36-45]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[46-55]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[56-65]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[66-75]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[76 or older]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***3) Age.**

How old are you?

--Select-- ▾

- 19 or younger [Value=1]
- 20-25 [Value=2]
- 26-35 [Value=3]
- 36-45 [Value=4]
- 46-55 [Value=5]
- 56-65 [Value=6]
- 66-75 [Value=7]
- 76 or older [Value=8]

Question Logic

If **[19 or younger]** is selected, then skip to survey **[#161292]**, question **[after #0, Text]** (See "Edit Logic" for details)

If **[20-25]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[26-35]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[36-45]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[46-55]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[56-65]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[66-75]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

If **[76 or older]** is selected, then skip to question **[after #5, Text]** (See "Edit Logic" for details)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***4) Age.**

How old are you?

--Select-- ▾

- 20 or younger [Value=1]
- 21-25 [Value=2]
- 26-35 [Value=3]
- 36-45 [Value=4]

- 46-55 [Value=5]
- 56-65 [Value=6]
- 66-75 [Value=7]
- 76 or older [Value=8]

Question Logic
 If [20 or younger] is selected, then skip to survey [#161292], question [after #0, Text] (See "Edit Logic" for details)
 If [21-25] is selected, then skip to question [after #5, Text] (See "Edit Logic" for details)
 If [26-35] is selected, then skip to question [after #5, Text] (See "Edit Logic" for details)
 If [36-45] is selected, then skip to question [after #5, Text] (See "Edit Logic" for details)
 If [46-55] is selected, then skip to question [after #5, Text] (See "Edit Logic" for details)
 If [56-65] is selected, then skip to question [after #5, Text] (See "Edit Logic" for details)
 If [66-75] is selected, then skip to question [after #5, Text] (See "Edit Logic" for details)
 If [76 or older] is selected, then skip to question [after #5, Text] (See "Edit Logic" for details)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***5) Age.**

How old are you?

--Select-- ▾

- 17 or younger [Value=1]
- 18-25 [Value=2]
- 26-35 [Value=3]
- 36-45 [Value=4]
- 46-55 [Value=5]
- 56-65 [Value=6]
- 66-75 [Value=7]
- 76 or older [Value=8]

Question Logic
 If [17 or younger] is selected, then skip to survey [#161292], question [after #0, Text] (See "Edit Logic" for details)
 If [18-25] is selected, then skip to question [No logic applied]
 If [26-35] is selected, then skip to question [No logic applied]
 If [36-45] is selected, then skip to question [No logic applied]
 If [46-55] is selected, then skip to question [No logic applied]
 If [56-65] is selected, then skip to question [No logic applied]
 If [66-75] is selected, then skip to question [No logic applied]
 If [76 or older] is selected, then skip to question [No logic applied]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***6) Conducted Music Ensemble Experience.**

Click the description that best describes your experience in a conducted music ensemble.

(A conducted music ensemble is a group of musicians with a director who leads the group musically without participating as a player or singer.)

- I have never participated in a conducted music ensemble. [Value=1]
- I have participated in a conducted music ensemble. [Value=2]

Question Logic
 If [I have never participated in a conducted music ens...] is selected, then skip to survey [#161292], question [after #0, Text] (See "Edit Logic" for details)
 If [I have participated in a conducted music ensemble....] is selected, then skip to question [No logic applied]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Headphones

When you have fully functioning headphones attached to your desktop, laptop, or mobile device, please continue.

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Environment

Once you have situated yourself in a quiet environment, free of distractions, please continue.

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***7) Description of Environment.**

How would you describe the environment in which you are taking this survey?

- Private (e.g., home or office) [Value=1]
- Public (e.g., library or coffee shop) [Value=2]
- Other (please specify) [Value=3]

***8) Gender.**

What is your gender?

- Male [Value=1]
- Female [Value=2]
- Other (please specify) [Value=3]

***9) Location of Residence.**

City

***10) Location of Residence.**

State/Province

***11) Location of Residence.**

Country

***12) Level of Education.**

Please choose the level of education that most accurately represents your current or most advanced educational experience.

- Elementary [Value=1]
- Middle School [Value=2]
- High School [Value=3]
- College or University Undergraduate [Value=4]
- Graduate [Value=5]

***13) Experience in a Conducted Music Ensemble.**

How many years of experience do you have in a conducted music ensemble? Please round to the nearest whole year/season.

- 0 [Value=1]

- 1 [Value=2]
- 2 [Value=3]
- 3 [Value=4]
- 4 [Value=5]
- 5 [Value=6]
- 6 [Value=7]
- 7 [Value=8]
- 8 [Value=9]
- 9 [Value=10]
- 10 [Value=11]
- 11 [Value=12]
- 12 [Value=13]
- 13 [Value=14]
- 14 [Value=15]
- 15 [Value=16]
- 16 [Value=17]
- 17 [Value=18]
- 18 [Value=19]
- 19 [Value=20]
- 20 [Value=21]
- 21 [Value=22]
- 22 [Value=23]
- 23 [Value=24]
- 24 [Value=25]
- 25+ [Value=26]

***14) Musical Identity.**

Please choose the category that best describes the role you most often take/took in a conducted music ensemble.

Conductor
[Value=1]

Accompanist
[Value=2]

Instrumentalist
[Value=3]

Singer
[Value=4]

Question Logic

If **[Conductor]** is selected, then skip to question **[No logic applied]**

If **[Accompanist]** is selected, then skip to question **[after #17, Text]** (See "Edit Logic" for details)

If **[Instrumentalist]** is selected, then skip to question **[after #20, Text]** (See "Edit Logic" for details)

If **[Singer]** is selected, then skip to question **[after #23, Text]** (See "Edit Logic" for details)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***15) Musical Identity Experience.**

How many seasons/years of experience do you have as a conductor?

--Select-- ▾

- 1 [Value=1]
- 2 [Value=2]
- 3 [Value=3]
- 4 [Value=4]
- 5 [Value=5]
- 6 [Value=6]
- 7 [Value=7]
- 8 [Value=8]
- 9 [Value=9]
- 10 [Value=10]
- 11 [Value=11]
- 12 [Value=12]
- 13 [Value=13]
- 14 [Value=14]
- 15 [Value=15]
- 16 [Value=16]
- 17 [Value=17]
- 18 [Value=18]
- 19 [Value=19]
- 20 [Value=20]
- 21 [Value=21]
- 22 [Value=22]
- 23 [Value=23]
- 24 [Value=24]
- 25+ [Value=25]

***16) PRIMARY Experience.**

As a conductor, with which type of ensemble do you primarily work?

Professional
[Value=1]

Semi-professional
[Value=2]

College or University
[Value=3]

Secondary or Elementary
[Value=4]

Community
[Value=5]

17) SECONDARY Experience.

As a conductor, with what other type(s) of ensemble(s) do you work? (Select all that apply.)

Professional
[Checked=1]

Semi-professional
[Checked=1]

College or University
[Checked=1]

Secondary or
Elementary
[Checked=1]

Community
[Checked=1]

Not Applicable
[Checked=1]

Skip Logic

Skip to question **[GO TO END OF SURVEY]**

-----Skip Logic-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

***18) Musical Identity Experience.**

How many seasons/years of experience do you have as an accompanist?

--Select--

- 1 [Value=1]
- 2 [Value=2]
- 3 [Value=3]
- 4 [Value=4]
- 5 [Value=5]
- 6 [Value=6]
- 7 [Value=7]
- 8 [Value=8]
- 9 [Value=9]
- 10 [Value=10]
- 11 [Value=11]
- 12 [Value=12]
- 13 [Value=13]
- 14 [Value=14]
- 15 [Value=15]
- 16 [Value=16]
- 17 [Value=17]
- 18 [Value=18]
- 19 [Value=19]
- 20 [Value=20]
- 21 [Value=21]
- 22 [Value=22]
- 23 [Value=23]
- 24 [Value=24]
- 25+ [Value=25]

***19) PRIMARY Experience.**

As an accompanist, with which type of conducted ensemble do you primarily work?

Professional
[Value=1]

Semi-professional
[Value=2]

College or University
[Value=3]

Secondary or Elementary
[Value=4]

Community
[Value=5]

20) SECONDARY Experience.

As an accompanist, with what other type(s) of conducted ensemble(s) do you work? (Select all that apply.)

Professional
[Checked=1]

Semi-professional
[Checked=1]

College or University
[Checked=1]

Secondary or
Elementary
[Checked=1]

Community
[Checked=1]

Not Applicable
[Checked=1]

Skip Logic

Skip to question **[GO TO END OF SURVEY]**

-----Skip Logic-----

Choral Expressivity Study

***21) Musical Identity Experience.**

How many seasons/years of experience do you have as an instrumentalist?

- Select-- ▾
- 1 [Value=1]
 - 2 [Value=2]
 - 3 [Value=3]
 - 4 [Value=4]
 - 5 [Value=5]
 - 6 [Value=6]
 - 7 [Value=7]
 - 8 [Value=8]
 - 9 [Value=9]
 - 10 [Value=10]
 - 11 [Value=11]
 - 12 [Value=12]
 - 13 [Value=13]
 - 14 [Value=14]
 - 15 [Value=15]
 - 16 [Value=16]
 - 17 [Value=17]
 - 18 [Value=18]
 - 19 [Value=19]
 - 20 [Value=20]
 - 21 [Value=21]
 - 22 [Value=22]
 - 23 [Value=23]
 - 24 [Value=24]
 - 25+ [Value=25]

***22) PRIMARY Experience.**

As an instrumentalist, in which type of ensemble do you primarily participate?

- Professional [Value=1] Semi-professional [Value=2] College or University [Value=3] Secondary or Elementary [Value=4] Community [Value=5]

23) SECONDARY Experience.

As an instrumentalist, in what other type(s) of ensemble(s) do you participate? (Select all that apply.)

- Professional [Checked=1] Semi-professional [Checked=1] College or University [Checked=1] Secondary or Elementary [Checked=1] Community [Checked=1] Not Applicable [Checked=1]

Skip Logic
Skip to question **[GO TO END OF SURVEY]**

-----Skip Logic-----

Choral Expressivity Study

***24) Musical Identity Experience.**

How many seasons/years of experience do you have as a singer?

- Select-- ▾
- 1 [Value=1]
 - 2 [Value=2]
 - 3 [Value=3]
 - 4 [Value=4]
 - 5 [Value=5]
 - 6 [Value=6]
 - 7 [Value=7]
 - 8 [Value=8]
 - 9 [Value=9]
 - 10 [Value=10]
 - 11 [Value=11]
 - 12 [Value=12]
 - 13 [Value=13]
 - 14 [Value=14]
 - 15 [Value=15]
 - 16 [Value=16]

- 17 [Value=17]
- 18 [Value=18]
- 19 [Value=19]
- 20 [Value=20]
- 21 [Value=21]
- 22 [Value=22]
- 23 [Value=23]
- 24 [Value=24]
- 25+ [Value=25]

***25) PRIMARY Experience.**

As a singer, in which type of choir do you primarily participate?

- Professional [Value=1]
 Semi-professional [Value=2]
 College or University [Value=3]
 Secondary or Elementary [Value=4]
 Community [Value=5]

26) SECONDARY Experience.

As a singer, in what other type(s) of choir(s) do you participate? (Select all that apply.)

- Professional [Checked=1]
 Semi-professional [Checked=1]
 College or University [Checked=1]
 Secondary or Elementary [Checked=1]
 Community [Checked=1]
 Not Applicable [Checked=1]

Appendix J

Post-Study Information Email

From: Jeremiah Selvey <jselvey@siu.edu>
Subject: Choral Expressivity Study: Post-Study Information
Date: October 4, 2014 4:52:15 PM CDT
To: Jeremiah Selvey <jselvey@UW.edu>

Dear Choral Expressivity Study participant,

You are receiving this email because you recently participated in the Choral Expressivity Study of the University of Washington and submitted your email for further information regarding the study. Thank you again for participating. I apologize for the delay in getting this post-study information out to you. I was recently appointed to a new faculty position (in choral and vocal music at Southern Illinois University-Carbondale). Between that transition and trying to complete my statistical analyses to ensure that no further data collection was necessary, it has taken some time. I can say that the study is officially closed, so what follows is information that will help you to better understand the study.

The purpose of this email is to give you additional information regarding the study and to allow you to address any additional questions or concerns you may have.

Respectfully,

Jeremiah Selvey

Jeremiah Selvey, DMA Candidate, MM, BMus
Lecturer of Choral/Vocal Music, Southern Illinois University-Carbondale
Office: Altgeld 0243
Email: jselvey@siu.edu
Office Phone: 618-453-5850
Voice Studio Website: www.jselvey.com/studio

POST-STUDY INFORMATION
Choral Expressivity Study
University of Washington

Researchers

Jeremiah Selvey, Doctoral Candidate, School of Music

Principal Investigator & Contact Person for Questions or Concerns

Contact Information: 404-242-4195, jselvey@uw.edu

Geoffrey Boers, Director of Choral Studies, School of Music

Faculty Advisor

Purpose

The evaluation of a music performance is generally considered to be an aural phenomenon. Among educationally affiliated performance groups (e.g., school bands, choirs, orchestras), evaluations and assessment often isolate the various sonic qualities of performance. However, in live or video-recorded contexts, music performances of these groups include a significant visual component, the focal point of which is the ensemble conductor.

In these performances, the attention and expectations of the listener may be focused and directed by the visual cues of the conductor. In other words, the visual cues of the conductor may affect a listener's perception, and in turn, the listener's assessment of an ensemble's performance. Conversely, the musical performance may affect the perception of conductor's performance. This study examines the interaction of the visual movements of the conductor and sonic qualities of choir performances.

The primary purpose of this study was to examine the interaction of visual and aural information on the perception of conductors (visual) and choir performances (audio). The researcher collected information that will allow him to explore how each component of the performance

process may impact the other with regards to expressivity. In other words, the researcher is seeking answers to the following questions:

- How does conducting (visual) affect the perception of choral performances (audio)?
- How does a choral performance (audio) affect the perception of a conductor's performance (visual)?

A secondary purpose of this study is to understand participants' views of the construct of expressivity. In particular, the researcher is interested in comparing and contrasting perception among conductors, choristers, and audience members. The researcher seeks to answer the following two questions:

- What are the elements that participants consider significant in their ratings of expressivity?
- How do conductors, singers, and other members (and their levels of experience) compare in their descriptions of expressivity?

Procedures

Participants evaluated one of three types of surveys: conductor-choir, choir-only, or conductor-only. You may have received the conductor-choir version of the survey, in which you would have evaluated conductors under high- and low-expressivity conducting conditions, accompanied by maximally and minimally expressive choral music excerpts. Some of these conducting and choral performance expressivity conditions were intentionally aligned and others mismatched. In other words, you may have observed a conductor conducting under low expressivity while the choir performance was maximally expressive. In order to validly test for the effects of each condition on the others, deception by way of mismatched expressivity conditions was necessary. Thank you for your understanding; the reason for this deception will become even clearer as you continue to read.

The conductor-only versions of the survey asked participants to evaluate conductor-only videos, without the accompanying musical excerpts. If you rated this version, you would have been evaluating conductors under high- and low-expressivity conducting conditions.

A third version of the survey asked participants to evaluate choir-only excerpts, without the visual stimulus of a conductor. If you evaluated this version, you would have been evaluating performances that were controlled for minimal and maximal expressivity.

The data collected among these various versions will help to answer the questions regarding the interactions of the aural and visual information in choral performance, including how the expressivity conditions of conducting affect human perception of choral performance expressivity and how the expressivity conditions of choral performances affect human perception of conducting expressivity. More specifically, the conductor-only and choir-only versions will serve as a baseline for comparison to ratings given in the conductor-choir version, and then by comparing the matched and mismatched ratings within the conductor-choir version, the researcher will be able identify the causes for any differences in evaluations.

Regardless of the survey version you took, you also may have given explanations regarding your ratings. These explanations will be coded and compared across three groups--choristers, conductors, and others--and will contribute to answering the researcher's questions regarding the construct of expressivity.

If you have additional questions or concerns, please feel free to contact Jeremiah Selvey, Doctoral Candidate at the University of Washington School of Music, at jselvey@uw.edu.

Appendix K
Presentation Orders

TEST 1A & 3A - ORDER

		AURAL MODE				
		Musical Passage #1		Musical Passage #2		
		Expressivity Conditions	MAXIMAL	MINIMAL	MAXIMAL	MINIMAL
V I M S O D A E L	Conductor #1	HIGH	1	7		
		LOW	5	3		
	Conductor #2	HIGH			8	2
		LOW			4	6

TEST 1B & 3B - ORDER

		AURAL MODE				
		Musical Passage #1		Musical Passage #2		
		Expressivity Conditions	MAXIMAL	MINIMAL	MAXIMAL	MINIMAL
V I M S O D A E L	Conductor #1	HIGH			4	6
		LOW			8	2
	Conductor #2	HIGH	5	3		
		LOW	1	7		

TEST 2A & 4A - ORDER

		AURAL MODE				
		Musical Passage #1		Musical Passage #2		
		Expressivity Conditions	MAXIMAL	MINIMAL	MAXIMAL	MINIMAL
V I M S O D A E L	Conductor #1	HIGH			2	8
		LOW			6	4
	Conductor #2	HIGH	7	1		
		LOW	3	5		

TEST 2B & 4B - ORDER

		AURAL MODE				
		Musical Passage #1		Musical Passage #2		
		Expressivity Conditions	MAXIMAL	MINIMAL	MAXIMAL	MINIMAL
V I M S O D A E L	Conductor #1	HIGH	3	5		
		LOW	7	1		
	Conductor #2	HIGH			6	4
		LOW			2	8

TEST 5A - ORDER

		AURAL MODE				
		Musical Passage #1		Musical Passage #2		
Expressivity Conditions			MAXIMAL	MINIMAL	MAXIMAL	MINIMAL
			1, 5	3, 7	4, 8	2, 6

TEST 5B - ORDER

		AURAL MODE				
		Musical Passage #1		Musical Passage #2		
Expressivity Conditions			MAXIMAL	MINIMAL	MAXIMAL	MINIMAL
			3, 7	1, 5	2, 6	4, 8

Appendix L

Video Stimuli Versions 1A, 3A, and 5A

Survey 1A

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Sound Test

Using headphones, play 1:18 to 2:00 of the following video. Set your volume as high as you can without creating sound distortion or discomfort to your ears. This volume will become the volume for the remaining videos you will play.

Once you have set your volume level, please continue.



-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Instructions

You are about to watch 8 different videos. For each of the videos, you will rate the expressivity level of BOTH conductor and choir on a scale of 1 (low) to 10 (high). Expressivity refers to conveyed feeling in performance. For each video, you may also EXPLAIN your rating, tell the researcher WHAT INFLUENCED your rating, or CLARIFY PARTICULAR ELEMENTS that entered into your assessment.

Important Guidelines:

1. Please **listen and watch--with undivided attention--to the entirety of each video** before entering your ratings and explanation.
2. Please **play the video only once**; the researcher is interested in understanding your initial responses.
3. Please **do not rewind or fast forward the video**; the researcher is interested in your response to the excerpt as a complete experience.
4. Please **do not alter the volume in between or during videos**.

Thank you for your attention to these details.

Note: Once you click to the next screen, you will not be able to scroll back to a previous screen or change your previous responses.

If at any point, you have questions or concerns, please contact Jeremiah Selvey, 404-242-4195 or jselvey@uw.edu.

Once you feel you understand how the process will work, please continue.

-----Page Break-----

Choral Expressivity Study

University of Washington



Please play the video **without interruption**.

Remember you will be evaluating **BOTH conductor and choir** in their level of expressivity.

Expressivity is conveyed feeling in performance.

*1) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*2) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

*3) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

4) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study



Please play the video **without interruption**.

Remember you will be evaluating **BOTH conductor and choir** in their level of expressivity.

Expressivity is conveyed feeling in performance.

*5) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*6) **CONDUCTOR Expressivity**

Low

1 [Value=1] 2 [Value=2] 3 [Value=3] 4 [Value=4] 5 [Value=5] 6 [Value=6] 7 [Value=7] 8 [Value=8] 9 [Value=9] 10 [Value=10]

High

*7) **CHOIR Expressivity**

Low

1 [Value=1] 2 [Value=2] 3 [Value=3] 4 [Value=4] 5 [Value=5] 6 [Value=6] 7 [Value=7] 8 [Value=8] 9 [Value=9] 10 [Value=10]

High

8) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study



Please play the video **without interruption**.

Remember you will be evaluating **BOTH conductor and choir** in their level of expressivity.

Expressivity is conveyed feeling in performance.

*9) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*10) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

*11) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

12) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **BOTH conductor and choir** in their level of expressivity.

Expressivity is conveyed feeling in performance.

*13) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*14) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

*15) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

16) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **BOTH conductor and choir** in their level of expressivity.

Expressivity is conveyed feeling in performance.

*17) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*18) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

*19) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

20) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **BOTH conductor and choir** in their level of expressivity.

Expressivity is conveyed feeling in performance.

*21) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*22) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

*23) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

24) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **BOTH conductor and choir** in their level of expressivity.

Expressivity is conveyed feeling in performance.

*25) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*26) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

*27) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

28) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **BOTH conductor and choir** in their level of expressivity.

Expressivity is conveyed feeling in performance.

*29) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*30) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

*31) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

32) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

33) Final Comments/Thoughts.

Do you have any additional comments or thoughts regarding conductor/choral expressivity and/or your experience of evaluating expressivity?



(28000 characters remaining)

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Instructions

You are about to watch 8 different videos. **Note: There will be NO AUDIO, only visual.** For each of the videos, you will rate the expressivity level of the conductor on a scale of 1 (low) to 10 (high). Expressivity refers to conveyed feeling in performance. For each video, you may also EXPLAIN your rating, tell the researcher WHAT INFLUENCED your rating, or CLARIFY PARTICULAR ELEMENTS that entered into your assessment.

Important Guidelines:

1. Please **watch--with undivided attention--to the entirety of each video** before entering your ratings and explanation.
2. Please **play the video only once**; the researcher is interested in understanding your initial responses.
3. Please **do not rewind or fast forward the video**; the researcher is interested in your response to the excerpt as a complete experience.

Thank you for your attention to these details.

Note: Once you click to the next screen, you will not be able to scroll back to a previous screen or change your previous responses.

If at any point, you have questions or concerns, please contact Jeremiah Selvey, 404-242-4195 or jselvey@uw.edu.

Once you feel you understand how the process will work, please continue.

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video **without interruption**.

Remember you will be evaluating **the conductor** in his level of expressivity.

Expressivity is conveyed feeling in performance.

★1) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington
Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

***2) CONDUCTOR Expressivity**

Low

- 1 [Value=1] 2 [Value=2] 3 [Value=3] 4 [Value=4] 5 [Value=5] 6 [Value=6] 7 [Value=7] 8 [Value=8] 9 [Value=9] 10 [Value=10]

High

3) EXPLANATION.

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington
Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video **without interruption.**

Remember you will be evaluating **the conductor** in his level of expressivity.

Expressivity is conveyed feeling in performance.

***4) How much of the above video did you play?**

- Some [Value=1] None [Value=2] All [Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington
Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

***5) CONDUCTOR Expressivity**

Low

- 1 [Value=1] 2 [Value=2] 3 [Value=3] 4 [Value=4] 5 [Value=5] 6 [Value=6] 7 [Value=7] 8 [Value=8] 9 [Value=9] 10 [Value=10]

High

6) EXPLANATION.

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video **without interruption**.

Remember you will be evaluating **the conductor** in his level of expressivity.

Expressivity is conveyed feeling in performance.

***7) How much of the above video did you play?**

- Some [Value=1] None [Value=2] All [Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

***8) CONDUCTOR Expressivity**

Low

- 1 2 3 4 5 6 7 8 9 10

High

9) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video *without interruption*.

Remember you will be evaluating *the conductor* in his level of expressivity.

Expressivity is conveyed feeling in performance.

*10) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*11) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

12) **EXPLANATION.**

9) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video **without interruption**.

Remember you will be evaluating **the conductor** in his level of expressivity.

Expressivity is conveyed feeling in performance.

*10) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*11) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

12) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video **without interruption**.

Remember you will be evaluating **the conductor** in his level of expressivity.

Expressivity is conveyed feeling in performance.

*13) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*14) **CONDUCTOR** Expressivity

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

15) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video **without interruption**.

Remember you will be evaluating **the conductor** in his level of expressivity.

Expressivity is conveyed feeling in performance.

*16) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*17) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

18) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video **without interruption**.

Remember you will be evaluating **the conductor** in his level of expressivity.

Expressivity is conveyed feeling in performance.

*19) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*20) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

21) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the (silent) video **without interruption**.

Remember you will be evaluating **the conductor** in his level of expressivity.

Expressivity is conveyed feeling in performance.

*22) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*23) **CONDUCTOR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

24) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

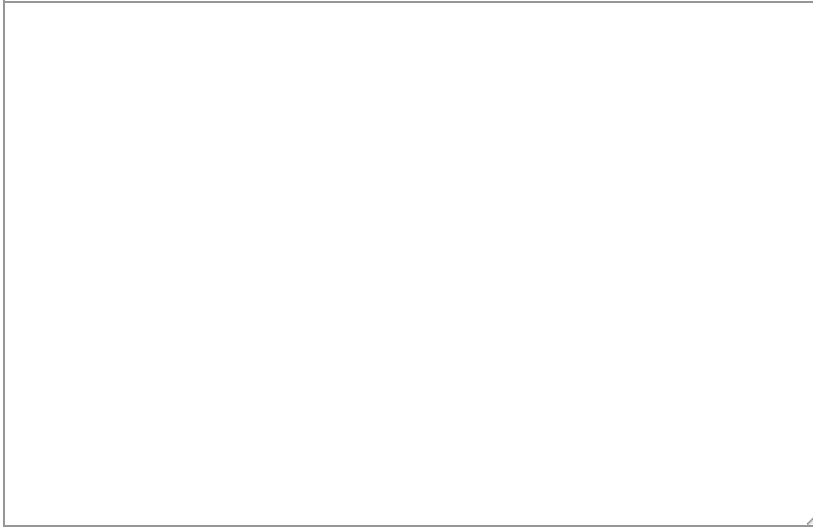
Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

25) Final Comments/Thoughts.

Do you have any additional comments or thoughts regarding conductor/choral expressivity and/or your experience of evaluating expressivity?

A large, empty rectangular box with a thin black border, intended for the user to provide final comments or thoughts. The box is currently blank.

(28000 characters remaining)

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Sound Test

Using headphones, play 1:18 to 2:00 of the following video. Set your volume as high as you can without creating sound distortion or discomfort to your ears. This volume will become the volume for the remaining videos you will play.

Once you have set your volume level, please continue.



-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Instructions

You are about to watch 8 different videos. **Note: You will hear a choral performance without visual elements.** For each of the videos, you will rate the expressivity level of the choir on a scale of 1 (low) to 10 (high). Expressivity refers to conveyed feeling in performance. For each video, you may also EXPLAIN your rating, tell the researcher WHAT INFLUENCED your rating, or CLARIFY PARTICULAR ELEMENTS that entered into your assessment.

Important Guidelines:

1. Please **listen--with undivided attention--to the entirety of each video** before entering your ratings and explanation.
2. Please **play the video only once**; the researcher is interested in understanding your initial responses.
3. Please **do not rewind or fast forward the video**; the researcher is interested in your response to the excerpt as a complete experience.
4. Please **do not alter the volume in between or during videos**.

Thank you for your attention to these details.

Note: Once you click to the next screen, you will not be able to scroll back to a previous screen or change your previous responses.

If at any point, you have questions or concerns, please contact Jeremiah Selvey, 404-242-4195 or jselvey@uw.edu.

Once you feel you understand how the process will work, please continue.

-----Page Break-----

Choral Expressivity Study



Please play the video **without interruption**.
Remember you will be evaluating **the choir** in its level of expressivity.
Expressivity is conveyed feeling in performance.

*1) How much of the above video did you play?

- Some [Value=1] None [Value=2] All [Value=3]

-----Page Break-----

Choral Expressivity Study

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*2) **CHOIR Expressivity**

Low

- 1 [Value=1] 2 [Value=2] 3 [Value=3] 4 [Value=4] 5 [Value=5] 6 [Value=6] 7 [Value=7] 8 [Value=8] 9 [Value=9] 10 [Value=10]

High

3) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study



Please play the video **without interruption**.
Remember you will be evaluating **the choir** in its level of expressivity.
Expressivity is conveyed feeling in performance.

*4) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*5) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

6) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **the choir** in its level of expressivity.

Expressivity is conveyed feeling in performance.

*7) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*8) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

9) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **the choir** in its level of expressivity.

Expressivity is conveyed feeling in performance.

*10) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*11) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

12) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **the choir** in its level of expressivity.

Expressivity is conveyed feeling in performance.

*13) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*14) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

15) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **the choir** in its level of expressivity.

Expressivity is conveyed feeling in performance.

*16) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*17) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

18) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **the choir** in its level of expressivity.

Expressivity is conveyed feeling in performance.

*19) How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

*20) **CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

21) **EXPLANATION.**

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)



Please play the video **without interruption**.

Remember you will be evaluating **the choir** in its level of expressivity.

Expressivity is conveyed feeling in performance.

***22)** How much of the above video did you play?

Some
[Value=1]

None
[Value=2]

All
[Value=3]

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

Based on the video you just viewed, please rate the level of expressivity on a scale of 1 (low) to 10 (high). **Expressivity: conveyed feeling in performance.**

***23) CHOIR Expressivity**

Low

1
[Value=1]

2
[Value=2]

3
[Value=3]

4
[Value=4]

5
[Value=5]

6
[Value=6]

7
[Value=7]

8
[Value=8]

9
[Value=9]

10
[Value=10]

High

24) EXPLANATION.

What elements or factors influenced, informed, or justified the ratings you gave?

(1000 characters remaining)

-----Page Break-----

Choral Expressivity Study

University of Washington

Questions? Contact Jeremiah Selvey (jselvey@uw.edu)

25) Final Comments/Thoughts.

Do you have any additional comments or thoughts regarding conductor/choral expressivity and/or your experience of evaluating expressivity?

(28000 characters remaining)

1

² A single mode includes one