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MA Voice Pedagogy Module 4 Assignment

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An Exploration of Potential Impacts of Conducting Behavior on Success in the Barbershop Harmony Society's Singing Category

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Component 1 - Project Portfolio

Introduction

As a singing coach specializing in the barbershop style and a Candidate Judge in the Barbershop Harmony Society's (BHS) Singing Category, I have focused to date on developing knowledge and a skillset geared toward voice coaching. I aim to help ensembles achieve their desired vocal outcomes efficiently and sustainably, and for those striving for success in barbershop contests, this means helping them achieve "artistic singing in the barbershop style," (Society Contest and Judging Committee (SCJC), BHS, 2025, p. 7-1). As the Assistant Director of the barbershop chorus Vocal Confluence, I have recently assumed a larger role in conducting the ensemble, a skill in which I lack formal training and substantial experience, having only regularly conducted for ten months, and thus far only for two songs in our repertoire. A cursory scan of the literature suggests that the way conductors communicate with vocal ensembles may impact aspects of vocal ensemble performance like intonation (Grady, 2014b), singer muscle activity (Manternach, 2016), timbre (Daugherty and Brunkan, 2013), and expressivity (Silvey, 2013), all of which are directly or indirectly adjudicated in barbershop contests and therefore contribute to contest success (SCJC, BHS, 2025). To best position their ensembles to achieve desirable vocal outcomes and success in barbershop contests, many barbershop chorus conductors, especially novices who lack formal training like myself, would likely benefit from developing their conducting behavior in accordance with evidence-based best practices that have been linked to desirable ensemble outcomes. To that end, this study reviews the extant literature to explore how conductor behavior impacts ensemble outcomes related to the four elements of the BHS Singing Category: intonation, vocal quality, unity, and vocal expression (SCJC, BHS, 2025).

Program of Study

Context

Barbershop harmony is a four-part a cappella vocal art form whose origins lie in the informal singing of African-Americans in the Southern United States in the late 19th century (Abbot, 1992; BHS, 2020). Although commonly associated with quartets, barbershop harmony is also performed in larger ensembles called barbershop choruses, 673 of which are currently active within the BHS alone (BHS, 2025). Like other types of choral ensembles, barbershop choruses typically perform with a director who conducts the group in performance (SCJC, BHS, 2025).

Conducting involves a director utilizing gesture, eye contact, and facial expressions to communicate with their ensemble during a performance with the goal of unifying the ensemble with their vision for the piece, both in terms of technique and artistry (Morrison and Silvey, 2022). Therefore, to be successful in this endeavor, a conductor must be able to nonverbally communicate technical and artistic ideas in a way that is accurately and uniformly understood by the ensemble. This is viewed as a fairly advanced skillset in the Western Classical tradition, since there are few undergraduate conducting programs, and music students who

study conducting at the undergraduate level typically do so toward the end of their program of study (Morrison and Silvey, 2022).

Many barbershop ensembles have a strong focus on contest success, owing in part to the robust contest framework that exists within barbershop organizations like the BHS (SCJC, BHS, 2025). As a Candidate Judge in the Singing Category, I am intimately familiar with and most interested in topics falling under its umbrella. As such, this study is restricted to elements of the Singing Category, although future studies focused on the Musicality and Performance Categories are similarly warranted to help directors and their ensembles achieve holistic BHS contest success. The Singing Category can be distilled into four elements, each of which contributes to “the unique sound that is barbershop harmony” (SCJC, BHS, 2025, p. 7-6), and each of which competitive barbershop chorus conductors should be familiar with.

Intonation refers to how in-tune a performance is, both in terms of the ensemble relative to the established tonal center of the song, and in terms of the three harmony voice parts relative to the melody voice part (SCJC, BHS, 2025). *Vocal Quality* refers to how freely-produced, well-supported, and resonant an ensemble’s performance is (SCJC, BHS, 2025). Mitigating unnecessary muscle engagement, commonly referred to as tension, is particularly emphasized, along with singing with a timbre that accentuates the most desirable qualities of each singer’s natural voice (SCJC, BHS, 2025). *Unity* encapsulates a range of concepts such as timbre, dynamic balance between voice parts, synchronization, diction, and articulation (SCJC, BHS, 2025), all of which contribute to the audience’s sense of overall ensemble unity. *Vocal Expression* refers to methods employed to convey authentic emotion through the singing voice, including but not limited to choices in the realms of enunciation, articulation, word sounds, timbre, and inflection (SCJC, BHS, 2025).

With these four category elements in mind, the aims, objectives, and timescale for this study are presented below.

Aims

- To learn what aspects of conductor behavior have been shown through extant research to impact ensemble outcomes related to the four elements of the BHS Singing Category (SCJC, BHS, 2025):
 - Intonation
 - Vocal Quality
 - Unity
 - Vocal Expression
- To determine which conductor behaviors best position barbershop choruses for success in these four areas, based on findings from extant research and my practice-based knowledge

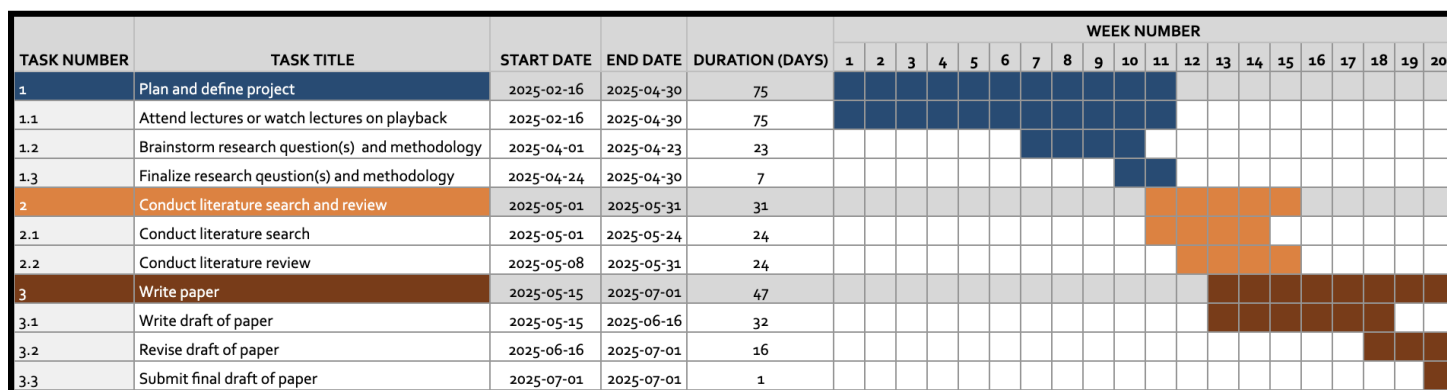
Objectives

- Identify conducting best practices that may lead barbershop choruses to to contest success in the BHS Singing Category
- Critically examine my personal conducting skillset to identify strengths and areas of opportunity related to these best practices and develop next steps for my continued growth as a conductor

Timescale

Figure 1 outlines several phases and tasks of this research project from initial planning through final submission, along with approximate start dates, end dates, and durations.

Figure 1: Module 4 Project Gantt Chart



Methodology

To complete my literature search and review, I used Randolph's (2009) framework, which itself is based on the work of Cooper (1988). My study focused on research outcomes, specifically ones related to how conducting behavior impacts ensemble outcomes related to the elements of the BHS Singing Category, with the ultimate goal of identifying conductor behaviors that best position barbershop choruses for contest success in the BHS Singing Category. Since I approached this topic without substantial knowledge or strong opinions about it and with no conflict to resolve, I integrated knowledge from previous research through generalization and a neutral perspective. Although I completed my study in the style of a scoping review, it is likely to be representative rather than exhaustive in scope, due to the relatively short amount of time allotted to this module.

I utilized the University of Wales Trinity Saint David's (UWTSD) online library services, Google Scholar, and ProQuest to search for extant literature relevant to my research questions. I first limited my search to peer-reviewed journal articles whose full text were available online and then supplemented my findings with doctoral dissertations that themselves were cited in peer-reviewed journals to balance additional research depth with maximum rigor. Studies on related topics, such as vocal acoustics, are referenced as needed to provide additional context and educational grey literature on sources on topics such as vocal anatomy and

physiology and vocal pedagogy are also referenced, as needed. Lastly, I rely on anecdotal evidence based on my coaching, candidate judging, and general barbershop experience for key areas in which no research has yet been conducted.

I began my literature search with key phrases such as “choral conducting” and “ensemble conducting,” reviewed the title and abstract and/or introduction of each study returned, and identified which Singing Category Element(s) each study related to via Thematic Analysis (Clarke and Braun, 2017). I excluded studies with seemingly no findings related to the BHS singing category, and interrogated all others more thoroughly. After better understanding their theoretical foundations, methodologies, conclusions, and implications, I included studies that I additionally deemed to potentially have practical significance in a barbershop ensemble setting and excluded the others. For each study included, I then utilized backward and forward citation chaining (Bates, 1989), which involves searching for more recent studies that have cited it as a source, and also checking the studies it cites to identify additional studies for consideration. I iterated on this approach until I achieved saturation in the literature and failed to identify additional studies warranting consideration.

I did not impose any inclusion criteria based on study publication date, but most of the relevant research that I identified was published in or since 1990, with the earliest conducting-related study included having been published in 1985. This suggests that the line of inquiry into the impact of conducting on various aspects of ensemble performance has only recently been opened and that many interesting research questions in this subject area likely remain to be studied.

Although my area of interest is barbershop ensemble conducting, which is itself a subset of choral conducting, I chose to include studies on instrumental ensembles which related to the elements of intonation, unity, and/or expression in my review, since these findings may translate to choral conducting. Given this caveat and since additional research is warranted to confirm the potential translation of instrumental findings to choral settings, I weighted studies focusing on choral ensembles more heavily in terms of practical relevance. Conversely, I excluded research related to conducting with batons and conducting with a score, since anecdotally barbershop chorus conductors do not utilize batons or scores while conducting in performance, and so such studies’ findings are irrelevant to my research questions. I also excluded studies and findings focused on evaluating the conductor’s individual performance, as my research questions focus on the output of the ensemble and the audience perception of the ensemble output.

Component 2 - Project Report: Review

Introduction

Previous research suggests that conductor behavior can impact aspects of vocal ensemble performance including intonation (Grady, 2014b), muscle activity (Manternach, 2016), timbre (Daugherty and Brunkan, 2013), and expressivity (Silvey, 2013). This paper begins with a representative scoping review of extant ensemble conducting literature in an effort to answer the following research questions:

1. How does conductor behavior impact ensemble outcomes related to the four elements of the BHS Singing Category: intonation, vocal quality, unity, and vocal expression (SCJC, BHS, 2025)?
2. Which conductor behaviors may best position barbershop choruses for success in these areas?

Each Singing Category element is discussed independently through analysis of the relevant subset of ensemble conducting research, and the findings from each element are synthesized with relevant grey literature, and my practice-based and anecdotal experience to identify conducting behaviors that may best position barbershop choruses for holistic success in the BHS Singing Category. This paper concludes with a critical reflection on my experience throughout the study, including an appraisal of my strengths and areas of opportunity as a conductor and proposed next steps for my personal development as a conductor based on this study's findings.

Literature Review

Intonation

While good intonation is important in many styles of music, barbershop values it particularly highly. In fact, "barbershop singers strive for more precise tuning than is possible with the fixed 12-tones-per-octave of the equally tempered scale" (SCJC, BHS, 2025). Since precise tuning is critical in BHS contests, it is important for barbershop chorus conductors to employ conducting strategies that help their ensembles achieve excellent intonation.

Multiple studies suggest that conducting gestures may impact individual singer and vocal ensemble intonation. Specifically, conductor gestures that are higher or more vertical in nature may induce sharper singing compared to those that are lower or more lateral in nature (Brunkan, 2013; Grady, 2014b; Mann, 2014), which depending on the baseline intonation of the ensemble, could make it more in-tune or less in-tune. Grady (2014a) also argues that "aggregate nonverbal conducting behaviors appear to matter in terms of choir timbre, pitch, and perceived singing efficiency" (p. 81). More research is needed to bolster findings in this "under-investigated area" (Grady, 2014b, p. 52) of choral pedagogy, but since it is anecdotally much more common for barbershop choruses to sing flat than sharp relative to the target key, directors of groups with a tendency to sing flat may benefit from adjusting their conducting to utilize higher and more vertically-oriented gestures, at least in key areas of a song where the ensemble experiences intonation challenges. Each

situation is unique, so directors must critically analyze their ensemble's performance and their own conducting and adjust accordingly to try to improve their ensemble's intonation.

Without further research, there are questions as to the practical value of these findings for barbershop chorus directors. One methodological consideration is that these studies' participants were mostly young adults, while barbershop chorus singers tend to skew older. For instance, Grady's participants ranged from 18-36 (2014a) and 18-31 years of age (2014b) respectively, while about two thirds of respondents to my Module 3 project on barbershop chorus singers were at least 50 years old (Gongaware, 2025). These demographic differences may impact how generalizable these findings are in a barbershop chorus setting, and directors who try these conducting techniques in such a setting may observe different results.

Additionally, while Mann's (2014) findings were statistically significant, the author questions whether they are practically significant, since the mean difference in pitch measured was about four hundredths of one semitone, which is a smaller difference than even many listeners with very finely-tuned ears are able to discern (Sundberg, 1982). Put differently, although the intonation differences observed were more likely due to changes in conducting gesture than random chance according to statistical analysis, the magnitude of the difference observed was not large enough to be perceived by most listeners. It is possible that these slight adjustments would be rewarded by some particularly keen-eared barbershop judges in rare situations, but this alone is unlikely to make a substantial impact in terms of holistic contest score.

Finally, the voice can be conceived as the output of five interrelated systems: "respiration, phonation, registration, articulation, and resonance" (Ragan, 2020, p. 3). Intonation, an attribute of vocal output, therefore may suffer when singers experience inefficiency in one or more of these systems, which must be addressed for intonation to consistently improve. The BHS judging community is aligned with this viewpoint and typically considers poor intonation to be a symptom of inefficient vocal technique. In post-contest feedback sessions, Singing Judges sometimes recommend that directors of choruses that struggle with intonation alter their conducting gesture if they suspect it is contributing, but in practice this is rarely viewed as the biggest priority. They more often focus on techniques to improve the singers' vocal freedom and efficiency by mitigating tension, which directors may implement as exercises in future ensemble rehearsals.

Vocal Quality

The BHS Singing Category defines "good vocal quality" as that which is "well-supported, freely-produced, and resonant" (SCJC, BHS, 2025, p. 7-2). This essentially amounts to vocal sound that is produced naturally and efficiently, without muscle engagement beyond what is needed for the vocal task. Thus, to achieve success in the Singing Category, it is critical for BHS chorus directors to ensure that their cues promote vocal freedom and efficiency and do not inadvertently induce vocal tension in their ensemble's singers.

Researchers have studied the impact of conductor gesture and movement on vocal tension. Fisted gestures and stabbing gestures have been found to induce actual tension in singers Fuelberth (2003a; Fuelberth, 2003b; Manternach, 2012a), as well as anticipated tension (Fuelberth, 2004). Conductors often

utilize such gestures to communicate a louder dynamic, and in response, singers may inadvertently incorporate tension in their attempt to comply (Fuelberth, 2003b). Additionally, upward gestures and head movement have been associated with visible tension in singers (Manternach, 2012a).

Conducting cues have similarly been shown to impact singer muscle engagement and physical movement. One study detected increases in suprahyoid muscle activity in singers viewing upward conducting gestures versus downward ones, as well as increases in sternocleidomastoid muscle activity in singers viewing fist gestures versus open ones (Manternach, 2012a). Others observed that ensemble members mimic physical movements of their conductor including lip rounding (Manternach, 2012b; Daugherty and Brunkan, 2013), eyebrow raising (Manternach, 2012b), head movement (Manternach, 2012c), and shoulder movement (Manternach 2012c).

Conducting gestures may also impact vocal timbre. One study observed that combining traditional conducting patterns with either a vertical-only or lateral-only pattern decreased the loudness of two key frequency bands under the hybrid conducting conditions, relative to the traditional pattern Grady (2014b), namely from 2.9 to 3.9 kHz - or frequencies around the singer's formant cluster (Sundberg, 2001), and a particularly sensitive frequency band in human hearing (Fletcher and Munson, 1933) - and from 4.6 to 5.7 kHz - a particularly important frequency band in singing voice perception (Monson, Lotto, and Ternström, 2011). Since prominent high-frequency overtones are characteristic of a bright timbre (McCoy, 2016), these hybrid conducting conditions had the impact of darkening the sound of the choirs examined, a result which most of the rating panel preferred (Grady, 2014b). Another study found that inward-upward preparatory gestures resulted in a brighter timbre relative to an outward preparatory gesture (Platte *et al.*, 2024b). Fist gestures are associated with higher formant frequencies than open palmed gestures (Manternach, 2012a), meaning they may contribute to a relatively brighter timbre. However, the literature is not unanimous, with some researchers not observing a meaningful impact of gesture height on choral timbre (Grady and Gilliam, 2020).

Additionally, conducting gestures may induce differences in singers' approach to inhalation, a key component of the voice system of respiration (Ragan, 2020), which contributes to vocal quality. Two related studies found that inhalation was less efficient in response to upward conducting movements than downward ones (Manternach, 2012a; Manternach, 2016), though these studies focused on Western Classical singing, and conductors who desire a more contemporary vocal aesthetic may find that upward gestures impact the inhalatory efficiency of their singers differently. A later study testing what the researchers hypothesized were congruent and incongruent combinations of gesture and inhalation instruction, Platte *et al.* (2024a) concluded that "gesture has an influence on the resulting sound and hence should be chosen with respect to the desired type of inhalation" (p. 12).

Given these findings, barbershop directors may consider evaluating whether their conducting gestures and physical movement induce vocal tension in their ensemble. Directors should use gestures shown to contribute to tension in vocal ensembles like fist and stabbing ones with caution, and those whose ensembles are especially prone to vocal tension may choose to avoid such gestures altogether. Additionally, knowing that their singers are likely to imitate their movements, conductors should strive to only employ

movement that is intended to communicate something artistic or induce a specific tonal outcome, so that their ensemble is best positioned to sing with minimal tension. Identifying and minimizing superfluous movement is a worthwhile exercise for all conductors, especially relative novices like myself, and finding a trusted conducting coach to help with this may be helpful.

The aforementioned research focused on the real-time impact of conducting behavior on vocal quality in a performance-like setting. However, in practice, most of the work done to build ensemble vocal skills that facilitate efficient singing is done in rehearsal where conducting cues are only one piece of the puzzle. Chorus rehearsals can be viewed as a special form of group voice instruction where the director serves as the instructor and can utilize various communication methods and exercises to build ensemble vocal skills that help mitigate vocal tension. Allocating rehearsal time to building vocal skills like twang which can boost resonance without increasing muscular effort (Sundberg and Thalén, 2010) may help the ensemble achieve louder volumes without tension, regardless of the conducting gestures utilized. Additionally, some choruses, like Vocal Confluence, offer private voice instruction outside of rehearsal where singers receive individualized attention and feedback on how to improve their personal vocal freedom and efficiency. We believe that when our singers improve their vocal efficiency, the ensemble does the same, and other directors may similarly find benefit in developing such a program for their choruses.

In terms of timbre, competitive BHS ensembles have a fair amount of flexibility. There is no language in the SCJC handbook that mandates that ensembles must sing with timbre of a certain description (e.g. bright, brassy, dark, warm). On the contrary, it states that their choices should “embrace and accentuate the best resonant qualities of their natural voice” (SCJC, BHS, 2025, p. 7-3), meaning that ensembles are free to shape their baseline resonance strategy according to what best suits their set of voices, as well as their aesthetic preference. In a choral setting, the decision of how to shape the baseline resonance strategy typically falls to the director, who along with instructions and exercises utilized during rehearsal, may influence their ensemble’s timbre through conducting gestures. Like baseline vocal technique, the work to shape a chorus’ timbre mostly happens in rehearsal, rather than as a real-time response to conducting gesture, but nuances in gesture may contribute to slight adjustments to timbre. Barbershop chorus conductors should consider their stylistic and aesthetic preferences for their ensemble’s sound and whether their conducting choices are consistent with these ends - in particular if they are consistent with the type of inhalation to facilitate these ends (Platte *et al.*, 2024a) - or if modifications to their gestures may encourage more desirable tonal outcomes from their singers.

Unity

The Singing Category element of Unity refers to the “net effect of ensemble-unifying techniques [including] matched word sounds and timbre, volume relationships (balance), synchronization and precision, sound flow, and diction” (SCJC, BHS, 2025, p. 7-3). Put simply, BHS Singing Judges evaluate how cohesive the execution of a performance is (SCJC, BHS, 2025), and these aspects of Unity all contribute to the sense of “expansion” or “lock and ring” (SCJC, BHS, 2025, p. 7-1) that is viewed as a core tenet of the barbershop style. In a conducted choral performance, unified execution occurs when each chorus member interprets and applies

the conductor's cues in a consistent way, and in a way that complements the vocal output of the rest of the ensemble.

The impact of conducting gestures on vocal timbre were largely covered in the Vocal Quality section, but choruses sometimes exhibit timbral inconsistencies across the ensemble, which from a BHS Singing Judge's perspective would be seen as primarily an issue of Unity. Anecdotally, the root cause of these inconsistencies is typically not conducting gestures, but rather vocal production inefficiencies at the individual or section level, and are most effectively addressed in one-on-one voice lessons or sectional rehearsals. Additionally, no previous literature that examined the impact of conducting behavior on ensemble timbre commented on timbral inconsistencies across the ensemble. However, previous studies have noted differences in interpretation of conductor gestures in instrumental ensembles based on the musician's placement in the ensemble formation. Wöllner and Auhagen (2008) found that standing to the conductor's front or left is "perceptually more informative" (p. 129) compared to standing to the conductor's right. Visentin *et al.* (2010) also discuss a "visually advantaged quadrant" (p. 647) in the ensemble, which was situated to the left-hand side of the conductor. This suggests that the vantage point from which a musician observes a conductor can impact the information they glean from the conductor's gestures, and therefore, how they respond to what they see. If a barbershop director attempts to communicate a timbral change and some singers have difficulty picking up on this, timbral disunity may result. Directors of ensembles that typically have great timbral unity but experience isolated moments of disunity, especially at points where their musical plan involves an intentional timbral shift, would do well to examine their cues and whether singers, regardless of vantage point, are each receiving the same instruction. Conversely, directors of ensembles that generally struggle with timbral unity may opt to dedicate rehearsal time to resonance work to develop a stronger baseline unity level.

Similarly, unity issues involving volume relationships and balance are typically not the result of conducting gestures, but rather an imbalance in voice part distribution, lack of awareness on the individual singer's part of their personal volume level relative to others in their section, or lack of awareness at the voice part level of their cumulative volume relative to the other parts. Directors may consider reallocating singers to different voice parts, changing spacing or standing configurations, or instructing certain voice parts to adjust their volumes to achieve a more desirable balance. However, like timbral disunity, balance disunity could potentially also result from differing interpretations in dynamic-related gestures across the ensemble based on singer vantage point (Wöllner and Auhagen, 2008; Visentin *et al.*, 2010). This could be exacerbated by the fact that gestures meant to communicate a change in dynamic are sometimes misinterpreted as communicating a change in tempo, and vice versa (Sousa, 1988), and that musicians sometimes conflate gestures meant to convey a dynamic (e.g. forte) for a gesture meant to convey a gradual shift in intensity (e.g. crescendo) (Poggi, D'Errico and Ansani, 2021; Poggi and Ansani, 2022). Conductors may choose to address balance disunity similarly to timbral disunity, either through dedicating rehearsal time to balance exercises if these issues are common and likely to be vocal habits, or through conducting gesture modifications if they are rare and likely to be in part due to confusion around their gesture.

The topic of sound flow refers to the idea of continuous sound with minimal interruptions, ultimately to provide maximal opportunity for expanded sound (SCJC, BHS, 2025). Anecdotally, skilled barbershop directors and coaches talk about this as a sense of singing in a smooth, connected manner, sustaining vowel sounds wherever possible, and emphasizing pitched consonants to maintain the sense of sound flow. Since no prior research that had significant findings related to legato conducting gesture was identified, future research on this topic is warranted. An objective test of the kinds of conducting gestures that encourage or discourage an excellent degree of sound flow would be of particular interest to barbershop clinicians.

Diction and articulation are also topics that are anecdotally not conveyed in a conducting gesture, but instead are covered through instruction and exercise during rehearsal. Barbershop, like musical theatre and other contemporary art forms, typically exhibits conversational diction. Barbershop practitioners generally try to strike a balance between helping their ensemble achieve speech-like diction that audiences can easily understand, with the kinds of timbral matching and sound flow previously discussed that facilitates harmonic reinforcement. Like sound flow, no prior research that had significant findings related to conversational diction was identified, so future research on this topic is warranted.

Of the subtopics mentioned above, perhaps the most obvious responsibility of a chorus conductor is helping their ensemble achieve synchronization and precision, or timing onsets and offsets together, and moving through each word sound together at the appropriate time. When a song is in a strict tempo, this involves communicating a clear and consistent beat, so that all ensemble members have an accurate sense of where they are in the song at any given moment, and the rate at which the song is progressing. Barbershop arrangements also often feature rubato passages, or sections where tempo or note duration are stylistically varied (SCJC, BHS, 2025). Gestural clarity is especially important in these free-form passages so the ensemble is aligned on where each phrase begins and ends, and where each pitch, articulation, and word sound change occurs during the phrase, and can ultimately execute them precisely. Previous research has objectively measured more precise synchronization from an ensemble in excerpts conducted with high clarity than those conducted with low clarity (Luck and Toiviainen, 2006). A methodology that is featured in some conducting curricula to teach gestural clarity is Laban Movement Analysis (LMA), stemming from the work of Rudolph Laban, although research on one particular Laban gesture - slash - did not find that it increased the perceived clarity of conducting gestures (Hart, 2016). Despite this inconclusive finding, the author notes its potential value as a supplementary tool for improving gestural clarity, and additional research is warranted to test the potential impact of other Laban Movement gestures.

While Laban gestures were not found to increase gestural clarity, teaching musicians about Laban Movement has been shown to improve their recognition of conducting gestures (Udell, 2025). This follows several studies that suggest that conducting experience and training helps people achieve more precise synchronization and better recognize conducting gestures. A previous study showed that developing musicians significantly improved their rhythm reading and phrasing after completing conducting training (Kelly, 1997). Musicians with previous conducting training and experience have also been found to achieve more precise synchronization than those without it (Luck and Nte, 2007; Luck and Sloboda, 2007). Since anecdotally, many

barbershop chorus directors lack significant musical training outside of their barbershop experience, those with limited conducting training may consider pursuing some basic conducting training like that frequently offered at barbershop educational events to help them build or strengthen fundamental skills like keeping a clear beat and tempo, and employing gestures that are clearly understood by their ensemble, especially in rubato sections. Directors whose ensembles struggle with synchronization might also find value in dedicating rehearsal time to providing basic conducting training to their members. Kelly's (1997) findings may translate well to barbershoppers since their participants were beginners and did not have extensive musical experience, which is the case for most barbershop chorus singers based on results of my Module 3 project (Gongaware, 2025).

Vocal Expression

The BHS Singing Category refers to Vocal Expression as “the marriage between good vocal technique and sincere delivery within the context of the song’s message” (SCJC, BHS, 2025, p. 7-6) and enumerates several facets of singing that contribute to an audience’s perception of expression: enunciation, articulation, word sounds, tone color/timbre, and inflection (SCJC, BHS, 2025). It also notes that “other techniques are limited only by the creativity of the performers,” (SCJC, BHS, 2025, p. 7-6), giving barbershop ensembles considerable freedom to make various expressive choices in contest performances. This breadth makes Vocal Expression the most loosely-defined and subjective element of the Singing Category.

Several tactics directors utilize have been shown to impact ensemble expressivity in prior research. Conducting gestures, which have been covered in previous sections, are perhaps the most obvious form of communication conductors use and have been shown to communicate emotional content, with gestures “characterized by increased amplitude, greater variance, and higher speed of movement” (Luck, Toiviainen, and Thompson, 2010, p. 47) judged as the most expressive. Research suggests the conducting plane utilized (high, medium, or low) also impacts ensemble expressivity, with expressivity being rated highest when the conductor utilizes the low or medium plane (Silvey and Fisher, 2015). More research is needed, but these findings suggest that barbershop chorus directors may find success with a conducting technique that is based primarily in the medium-to-low plane, while also exhibiting aspects of expressive conducting such as increased amplitude.

While gestures are ubiquitous in conducting, other forms of conductor communication may also impact ensemble expressivity. An early study found a correlation between expressive musical performance and several conducting behaviors, including body movement, use of facial expressions that communicated approval, use of the left hand to convey dynamic information, use of emblems, or “gestures that had a shared, decoded meaning, e.g. palm facing out to indicate ‘softer’” (Grechesky, 1985, p. 81), and use of illustrators, or “nonverbal gestures used to illustrate what was being said” (Grechesky, 1985, pp. 81-82). These findings have all been corroborated in some form or another in more recent studies. While some conductors can effectively convey emotional information through only gestures in the absence of facial expression or verbal

communication, others struggle to do so (Gallops, 2005), meaning that most conductors interested in enhancing their ensemble's expressivity should experiment with some of these other modes of communication.

Verbal instruction can be an effective rehearsal tool, as singers have been found to vary their dynamic level more in response to verbal cues than nonverbal cues (Skadsem, 1997), though the author cautions against excessive use of verbal cues to avoid interrupting rehearsal flow. Pairing expressive gestures with verbal cues were also shown to enhance them, noting the potential "inseparability of gestural and verbal aspects of rehearsal instruction" (Montemayor and Silvey, 2019, p. 133). While choral directors should heed Skadsem's (1997) warning to limit the amount of rehearsal time spent talking, targeted and concise verbal direction can be extremely impactful and reduce ambiguity that is sometimes associated with nonverbal cues. Choral directors can even develop their own verbal and gestural vernacular to use in rehearsal to convey technical or artistic instructions efficiently and in a way that is understood by their ensemble members.

Facial expressions are a common form of human communication outside of music, and several choral pedagogy studies on ensemble expressivity have additionally focused on them. One researcher found moderate correlation between conductor facial expression and ensemble performance ratings, although these findings were not statistically significant (VanWeelden, 2002). Dan (2005) later found that although interpretations of conductor facial expressions were not totally uniform, musicians were largely able to differentiate between negative and positive facial expressions, as well as strong and weak ones. A recent study similarly found a wide variety of interpretations for each facial expression they studied, noting that "the multi-message capabilities of the face were seen in the results to provide a detailed picture of the characteristics and emotions behind a musical moment," but cautioning that "the opposite is also true, that the face can blur, confuse, or counteract the effect of a conductor's intended message from the rest of the body" (Hansen, 2021, p. 166). Although facial expressions may be interpreted in various ways by musicians, research demonstrates that conductors can effectively convey emotional information through facial expressions (Wöllner, 2008; Kilpatrick, 2021) and further that using facial expressions is an important aspect of expressive conducting (Wöllner, 2008). In fact, one study concluded that conductor facial expressions of both approval and disapproval elicit a greater sense of ensemble expressivity than neutral expressions (Silvey, 2013), suggesting that singers are responsive to perceived emotional feedback by conductors, whether positive or negative. Other researchers asked ensemble musicians what drove their impressions of expressivity, and the most common themes in their open-ended responses were "facial expression, conducting gestures, musical elements, and conductor investment (Nápoles, Silvey, and Montemayor, 2021, p. 261), strengthening the evidence that musicians perceive their conductor's facial expressions as important signals of expressivity. Barbershop chorus directors should know that their ensemble may be responsive to their facial expressions - or lack thereof - and that this responsiveness may impact their performance and ultimately the audience's perception of their expressiveness. Directors who are proficient with basic conducting technique and gestural clarity may benefit from turning their attention to their utilization of facial expressions and experimenting with modifications in key moments to enhance their ensemble's performance expressivity, while appreciating that the ensemble may not reliably be able to glean nuanced emotional information from facial expressions alone.

Recent evidence suggests that changes in the conductor's gaze may also impact ensemble expressivity. An analysis of renowned conductor Leonard Bernstein's use of gaze and a corresponding participant study found that Bernstein's gaze signal meaning "start" was commonly recognized, while other signals meaning "pay attention" and "crescendo and accelerando" were not as universally understood (Poggi *et al.*, 2020). Additionally, expert conductors tended to detect gaze signals in Bernstein's conducting more than less-experienced conductors (Poggi *et al.*, 2020). Researchers later observed that gaze signals of technical items were well understood, while those of attitude and emotion more often exhibited varying interpretations (Poggi and Ansani, 2022). They also noted small differences in ability to interpret gaze signals correctly between experts and non-experts, suggesting "continuity between everyday gaze signals and those for musical indication...conveying the desired meanings through generic codified, emotional, and iconic expressions" (Poggi and Ansani, 2022, pp. 232). In practice, barbershop chorus directors may find some utility in gaze-based communication, especially if they base this communication off of commonly-understood everyday signals. However, since they work with nearly all amateur musicians and are often relative novices themselves, they may find it more useful to focus on gesture and facial expression as the primary modes of communication, as their ensemble will likely interpret those cues more uniformly.

Although there is no compelling evidence to suggest that LMA improves gestural clarity, it has been shown to improve ensemble expressivity. LMA experts have found that conductors who achieved the highest levels of ensemble expression demonstrated a wide range of gestures that are characterizable through LMA (Benge, 1996). LMA was also shown to be a more effective tool for conducting education than utilizing generic expressive gestures (Yontz, 2001), and gestures like those taught in LMA and the Alexander Technique (AT) - another methodology of body awareness that is often employed to improve breathing and posture (Brennan, 2016) - have been associated with emotionally expressive performances (Krudop, 2003). In pursuit of their own development, barbershop chorus directors may benefit from pursuing training in a methodology like LMA or AT to improve the communication of expressive content in their conducting.

There is a large body of evidence that expressive conducting, however achieved, correlates to expressive ensemble performance. Two early studies found that ensembles conducted expressively were rated higher in terms of expressiveness relative to those conducted unexpressively (Laib, 1993; House, 1998). Additional studies featuring a variety of ensemble and participant types have tested the same audio against different conductor videos, finding that the performances shown with expressive conductors were rated more highly than those with unexpressive conductors (Morrison *et al.*, 2009; Morrison and Selvey, 2014; Morrison *et al.*, 2014; Price, Mann, and Morrison, 2016), which indicates that this general finding may be widely transferable. Similarly, Nápoles (2013) found that regardless of whether an audio recording was presented alone, with video of the conductor from the rear, or with video of the conductor from the front, performances conducted expressively were rated higher than performances conducted strictly. A more recent study observed that conducting incorporating additional body movement and facial expression beyond a simple pattern and left hand dynamic gesture - two tactics mentioned previously - were associated with more expressive performance than conducting styles involving only the hands (Çoşkunsoy and Güdek, 2019). The preponderance of

evidence supports the notion that expressive conducting begets expressive performance, but it should be noted that two similar studies found no such relationship (Price and Chang, 2005; Silvey and Koerner, 2016). Another study suggests that this relationship is likely not unlimited, as ensemble expressivity was found to be lower when conducted overly-expressively compared to expressively (Silvey *et al.*, 2025). Given the knowledge that singers often mimic their conductors, this finding could signify a link between attempts at expressive singing and vocal inefficiencies that result in inconsistent or undesirable vocal quality and/or intonation issues, which I have observed in my work with singers when they are focused on increasing vocal and performative expression. Future research on this topic would be of great interest for barbershop clinicians. In light of this evidence, barbershop chorus directors who tend toward strict conducting would likely benefit from striving for more expressive conducting to try to unlock new levels of expressiveness in their ensemble, while those who already conduct expressively should be careful not to take their expressiveness too far. Since AT classes are commonly offered at barbershop educational events, directors looking for a methodology on which to base their expressive conducting and movement may find these classes to be a useful entry point.

Peddell (2008) argues that that “it is not whether [conductors] can influence a listener’s perception of expressiveness but how they choose to” (Peddell, 2008, p. 56) and that “a conductor through the intentionality and clarity of [their] behavior are able to inform a listener of the expressive intent of the music beyond the sound of it” (Peddell, 2008, p. 56). Durrant (2009) concurs, stating that “if the conducting gesture is not gesturally aesthetic and in keeping with the expressive and aesthetic content of the music, then part of the aesthetic gestalt is destroyed for those being conducted and, ultimately, for those listening as well” (p. 335). Given this widespread belief, most barbershop chorus conductors will likely benefit from developing skills in effectively using gesture, facial expressions, and gaze in performance, along with verbal communication in rehearsal, to enhance their own conducting expressivity, and hence their ensemble’s performance expressivity.

Conclusion and Future Recommendations

Barbershop chorus directors striving for contest success in the BHS Singing Category, such as myself, have a wealth of findings from past research to draw from to inform their conducting behaviors. To improve intonation, directors may consider adapting their conducting gestures to be higher and/or more vertically-focused in key moments, although addressing vocal inefficiencies that may be root causes of intonation issues is recommended as a first step. Directors may also consider avoiding conducting gestures that have been shown to introduce vocal tension, and choose gestures that align with their desired tonal outcomes. Directors may strive to improve their gestural clarity through conducting training, and also may consider providing basic conducting instruction to their ensemble to improve their recognition of key conducting gestures to help improve ensemble synchronization and precision. Finally, to enhance their ensemble’s vocal expression, relatively strict conductors may benefit from working to increase their own expressivity not just through gesture, but also through effective use of facial expression, gaze, and verbal instruction during rehearsal, while directors who already conduct expressively should carefully toe the line between expressive and overly-expressive conducting. All of these conducting adjustments, paired with effective rehearsal

strategies geared toward encouraging precise, efficient, and artistic singing are likely to position barbershop chorus directors and their ensembles for BHS contest success in the Singing Category. Since each conductor's and ensemble's skillset is unique, directors may critically reflect periodically on their strengths and areas of opportunity as a conductor to arrive at a development to facilitate their growth, something I did myself for the final section of this paper.

Critical Reflection

To structure my critical reflection of my learning experience from this study and where I currently stand in my journey as a barbershop chorus conductor, I will utilize Driscoll's (2007) 'What?' model, which is elegant in its simplicity and applicable to all stages of this process due to its flexibility. It also concludes with developing action-oriented steps to facilitate continued learning, which is aligned with my objective of determining next steps for my continued growth as a conductor. For the remainder of the paper, I walk through various steps of the Module 4 process as well as an appraisal of my own current skillset and discuss potential actions for continued growth and learning to complete my objectives for the study.

1. What?

I began this assignment by considering possible areas of interest, doing a preliminary assessment of the extant literature, and ultimately choosing an area of focus and research questions.

So What?

At the outset, I knew that my Module 4 project would focus on some aspect of barbershop ensemble singing. My original idea was to explore what tactics, strategies, etc. have been shown to significantly impact choral ensemble acoustic output including not just conductor communication, but other topics such as ensemble spacing and configuration, utilization of specific vocal exercises including semi-occluded vocal tract exercises/straw phonation, movement conditions, and others. In a tutorial, Joseph Griffiths-Bloor noted that my proposed topic was quite broad, which could only allow me to cover each subtopic at a surface level due to the restrictive word count. He instead encouraged me to select one of the subtopics I was considering investigating that was particularly relevant for the current state of my practice, so that I could go in more depth with it and maximize the impact on my personal growth. Since I am less than a year into my journey with barbershop chorus conducting and would like to increase my knowledge and skill level in this area, exploring research on conducting behaviors made perfect sense. Additionally, restricting the area of impact to focus on the BHS Singing Category more clearly defined the type of research I was searching for and made the project more manageable given the timeframe and word count.

Now What?

For future research, I must remember to focus on areas that are most important to me and my personal growth. Ultimately, I am pursuing this degree to facilitate my own growth so it is crucial to select topics that are of particular importance to me. I also must resist the urge to select research questions that are too broad, and instead select research questions that are scoped appropriately for the assignment requirements, timeline, and word count. This will require discipline on my part in the early stages of the remaining modules, and I will also be sure to communicate my ideas to my module leads as early as possible to ensure I am not going down an untenable path with my research.

2. *What?*

I completed a thorough literature search for relevant studies to include in my literature review.

So What?

This process took longer than I originally anticipated as the body of extant research that warranted consideration was wider than I anticipated it would be, so there were simply more studies to vet and review. Additionally, the backward and forward chaining process, while immensely helpful in identifying additional relevant articles, added some time to the process, which was worth it in terms of making my review more thorough. Otherwise, the process went relatively smoothly for me. The online resources available through UWTSD are intuitive and user-friendly and make searching for literature from disparate sources quite efficient.

Now What?

My takeaway from this aspect of the process is to budget a greater portion of the total project time to the literature search process for future modules.

3. *What?*

I reviewed the literature and wrote this literature review paper summarizing my findings, analyzing and synthesizing them, and discussing how they are applicable to my personal barbershop conducting practice and for barbershop conductors as a whole.

So What?

I found Thematic Analysis (Clarke and Braun, 2017) to be extremely helpful in terms of grouping studies according to which element(s) of the BHS Singing Category they related to, and additionally what subtopics within each category they related to. This aided me in organizing a large set of studies into smaller groups of closely-related studies, and these groupings helped me achieve more logical and natural flow in my writeup.

In prior assignments, I found it difficult to meet the word count, first writing far more than the allotted number of words and then needing to pare my paper down to fall within the word count limit. This time, I made

an effort to be much more succinct in my writing and was much closer to the target word count in my initial draft.

I received feedback on my draft submission that I could have made my critical analysis more thorough and incorporated more of my practice-based knowledge to determine which research findings are likely to be applicable in a barbershop setting. To this end, I added more critical analysis content, which required me to make the summaries of most studies much more brief to abide by the word count.

The findings of the studies I identified generally aligned well with the anecdotal evidence I have gathered in my barbershop experience. However, I was slightly surprised at how strong the evidence was that conductor expressivity increases ensemble expressivity, despite this finding itself not being surprising.

Now What?

I plan to take a similar approach with future studies and continue to code the results as I find them to keep my analysis organized and help make the writing process more seamless.

I also plan to continue refining my writing skills, focusing on striking the balance of clearly summarizing extant research, synthesizing it with my practice-based knowledge, and doing all of this succinctly.

4. What?

I assessed my current conducting skillset, including strengths and areas of opportunity related to the research findings.

So What?

Strengths

- Keeping a steady and consistent beat
- Exhibiting clear standard patterns and gestures
- Utilizing verbal instruction appropriately during rehearsal
- Utilizing effective vocal exercises during rehearsal

Areas of Opportunity

- Reducing superfluous body movement and gestures
 - I have gotten feedback that I move around a fair amount, changing my position in front of the chorus. Working to keep my lower body more stationary will likely reduce the potential for unintended tension in the ensemble.
 - I also utilize some gestures in louder and more intense moments that could introduce tension, so refining my gestural vocabulary in such moments could help reduce the risk of vocal tension.
- Employing more intentional use of facial expressions and gaze.
 - When I first started conducting, I was so focused on conducting accurately that I likely often exhibited the neutral facial expression that is associated with low levels of ensemble

expressivity (Silvey, 2013) and rarely made eye contact with the ensemble. I have recently improved in this area, but would benefit from continued growth in it.

- Shifting more toward expressive conducting than strict conducting
 - I naturally have a tendency toward more strict conducting but would like to shift my focus toward more expressive conducting to consistently elicit more expressivity out of the ensemble.

Now What?

I will work to establish regular conductor coaching sessions with our Artistic Director where they work with me to improve in these areas of opportunity identified, along with others based on their observations.

References

- Abbott, L. (1992) “Play That Barber Shop Chord”: A Case for the African-American Origin of Barbershop Harmony’, *American Music*, 10(3), pp. 289–325. Available at: <https://doi.org/10.2307/3051597> (Accessed: 7 June 2025).
- Barbershop Harmony Society (BHS) (2020) *What is barbershop music?*. Available at: <https://www.barbershop.org/music/about-our-music> (Accessed: 6 June 2025).
- Barbershop Harmony Society (BHS) (2025) *2024 Annual Report*. Available at: <https://files.barbershop.org/PDFs/BHS/2024-BHS-Annual-Report.pdf> (Accessed: 6 June 2025).
- Bates, M.J. (1989) ‘The design of browsing and berrypicking techniques for the online search interface’, *Online Review*, 13(5), pp. 407-424. Available at: <https://pages.gseis.ucla.edu/faculty/bates/berrypicking.html> (Accessed: 7 June 2025).
- Benge, T.J. (1996) *Movements utilized by conductors in the stimulation of expression and musicianship*. DMA Thesis. University of Southern California. Available at: <https://www.proquest.com/docview/304300847/A491C1F338F642CEPQ> (Accessed: 4 June 2025).
- Brennan, R. (2016) *Alexander Technique : An Introductory Guide to Natural Poise for Health and Well-Being*. E-Book Edition. London, UK: Collins & Brown.
- Brunkan (2013) ‘The Effects of Watching Three Types of Conductor Gestures and Performing Varied Gestures Along with the Conductor on Measures of Singers' Intonation and Tone Quality: A Pilot Study’, *International Journal of Research in Choral Singing*, 4(2), pp. 37-51. Available at: https://acda-publications.s3.us-east-2.amazonaws.com/IJRCS/volume4/ijrcs4_2_brunkan.pdf (Accessed: 28 June 2025).
- Clarke, V. and Braun, V. (2017) ‘Thematic analysis’, *Journal of Positive Psychology*, 12(3), pp. 297–298. Available at: <https://doi.org/10.1080/17439760.2016.1262613> (Accessed: 7 June 2025).
- Cooper, H.M. (1988) ‘Organizing Knowledge Syntheses: A Taxonomy of Literature Reviews’, *Knowledge in Society*, 1(104), pp. 104–126. Available at: <https://doi.org/10.1007/bf03177550> (Accessed: 7 June 2025).
- Çoşkunsoy, B.Ö. and Güdek, B. (2019) ‘The impact of body language use of a conductor on musical quality’, *Journal of Education and Training Studies*, 7(9), pp. 39-47. Available at: <https://redfame.com/journal/index.php/jets/article/view/4271/4566> (Accessed: 14 June 2025).

- Dan, K. (2005) *Facial Expression and Eye Contact Used By Instrumental Conductors: Practical Applications and Exercises*. DMA Thesis. Arizona State University. Available at: <https://www.proquest.com/pqdtglobal/docview/305027676/1E7ECD7D90C34F06PQ> (Accessed: 28 June 2025).
- Daugherty, J.F. and Brunkan, M.C. (2013) 'Monkey See, Monkey Do? The Effect of Nonverbal Conductor Lip Rounding on Visual and Acoustic Measures of Singers' Lip Postures', *Journal of Research in Music Education*, 60(4), pp. 345–362. Available at: <https://doi.org/10.1177/0022429412464039> (Accessed: 31 May 2025).
- Driscoll, J. (2007) *Practising clinical supervision: A reflective approach for healthcare professionals*. 2nd Edition. Edinburgh, UK: Baillière Tindall Elsevier.
- Durrant, C. (2009) 'Communicating and accentuating the aesthetic and expressive dimension in choral conducting', *International Journal of Music Education*, 27(4), pp. 326-340. Available at: <https://doi.org/10.1177/0255761409344374> (Accessed: 1 June 2025).
- Fletcher, H. and Munson, W.A. (1933) 'Loudness, its definition, measurement and calculation', *Bell System Technical Journal*, 12(4), pp. 377–430. Available at: <https://doi.org/10.1002/j.1538-7305.1933.tb00403.x> (Accessed: 10 June 2025).
- Fuelberth, R.J.V. (2003a) 'The Effect of Conducting Gesture on Singers' Perceptions of Inappropriate Vocal Tension', *International Journal of Research in Choral Singing*, 1(1), pp. 27-38. Available at: <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=381dc7f20c34bfddd60c39ba7e2ea8560a12a9fc> (Accessed: 15 June 2025).
- Fuelberth, R. J. V. (2003b) 'The Effect of Left Hand Conducting Gesture on Inappropriate Vocal Tension in Individual Singers', *Bulletin of the Council for Research in Music Education*, 157, pp. 62-70. Available at: <https://www.jstor.org/stable/40319187> (Accessed: 3 June 2025).
- Fuelberth, R. J. V. (2004) 'The Effect of Various Left hand Conducting Gestures on Perceptions of Anticipated Vocal Tension in Singers', *International Journal of Research in Choral Singing*, 2(1), pp. 27-38. Available at: https://www.researchgate.net/publication/237418195_The_Effect_of_Various_Left_hand_Conducting_Gestures_on_Perceptions_of_Anticipated_Vocal_Tension_in_Singers (Accessed: 15 June 2025).
- Gallops, R.W. (2005) *The effect of conducting gesture on expressive-interpretive performance of college music majors*. Ph.D Thesis. University of South Florida. Available at: <https://www.proquest.com/pqdtglobal/docview/305421850/B812322E89A74F6EPQ> (Accessed: 3 June 2025).

Gongaware, J.J. (2025) *Individual Vocal Practice Habits of Barbershop Chorus Singers: A Mixed-Methods Investigation*. Voice Study Centre/University of Wales-Trinity Saint David. Available at: https://docs.google.com/document/d/18r-UbAXbr01DPH8jK4hN0A-v6WP62tJ6_v388uuWGV0/edit?usp=sharing (Accessed 28 June 2025).

Grady, M.L. (2014a) *The effects of nonverbal behaviors exhibited by multiple conductors on the timbre, intonation, and perceptions of three university choirs, and assessed relationships between time spent in selected conductor behaviors and analyses of the choirs' performances*. Ph.D. Thesis. University of Kansas. Available at: <https://www.proquest.com/pqdtglobal/docview/1615069749?sourcetype=Dissertations%20&%20Theses> (Accessed: 31 May 2025).

Grady, M.L. (2014b) 'Effects of Traditional Pattern, Lateral-Only, and Vertical-Only Conducting Gestures on Acoustic and Perceptual Measures of Choir Sound: An Exploratory Study', *International Journal of Research in Choral Singing*, 5(1), pp. 39-59. Available at: <https://acda-publications.s3.us-east-2.amazonaws.com/IJRCS/IJRCS5-1grady.pdf> (Accessed: 7 June 2025).

Grady, M.L. and Gilliam, T.M. (2020) 'Effects of Three Conducting Gesture Heights on Acoustic and Perceptual Measures of Choral Sound', *International Journal of Research in Choral Singing*, 8, pp. 110-129. Available at: <https://acda.org/wp-content/uploads/2021/12/IJRCSVol8GradyGilliam.pdf> (Accessed: 27 May 2025).

Grechesky, R.N. (1985) *An Analysis Of Nonverbal And Verbal Conducting Behaviors And Their Relationship To Expressive Musical Performance*. Ph.D Thesis. University of Wisconsin-Madison. Available at: <https://www.proquest.com/docview/303378773/1663C693330C4FB6PQ> (Accessed: 4 June 2025).

Hansen, J.S. (2021) *The interpretation of a conductor's nonverbal communication by ensemble members and the impact on conducting education*. DMA Thesis. Boston University. Available at: <https://www.proquest.com/pqdtglobal/docview/2485418402/5D32B794D0CA430BPQ> (Accessed: 14 June 2025).

Hart, J.T. (2016) 'The Effects of Single Laban Effort Action Instruction on Undergraduate Conducting Students' Gestural Clarity', *Contributions to Music Education*, 41, pp. 93–111. Available at: <https://www.proquest.com/docview/1790516825> (Accessed: 12 June 2025).

House, R.E. (1998) *Effects of expressive and nonexpressive conducting on the performance and attitudes of advanced instrumentalists*. DMA Thesis. Arizona State University. Available at: <https://www.proquest.com/pqdtglobal/docview/304446758/DFB517FEFB884E01PQ> (Accessed: 28 June 2025).

Kelly, S.N. (1997) 'Effects of Conducting Instruction on the Musical Performance of Beginning Band Students', *Journal of Research in Music Education*, 45(2), pp. 295-305. Available at: <https://doi.org/10.2307/3345588> (Accessed: 4 June 2025).

Kilpatrick III, C.E. (2021) *Undergraduate Perceptions of the Function of Facial Expression in Conducting*. Ph.D. Thesis. The Florida State University. Available at: <https://www.proquest.com/pqdtglobal/docview/2544882789/51A54B23B6304C86PQ> (Accessed: 25 May 2025).

Krudop, D.W. (2003) *An examination of the use of kinesics in eliciting expressive ensemble response and its application in an undergraduate choral conducting curriculum*. DMA Thesis. Shenandoah Conservatory. Available at: <https://www.proquest.com/pqdtglobal/docview/305243032/5DCC7911B13B49A1PQ> (Accessed: 28 June 2025).

Laib, J.R. (1993) *The effect of expressive conducting on band performance*. DMA Thesis. University of Georgia. Available at: <https://www.proquest.com/docview/304048961/17AB143215F54CFDPQ> (Accessed: 4 June 2025).

Luck, G. and Nte, S. (2007) 'An investigation of conductors' temporal gestures and conductor— musician synchronization, and a first experiment', *Psychology of Music*, 36(1), pp. 81–99. Available at: <https://doi.org/10.1177/0305735607080832> (Accessed: 10 June 2025).

Luck, G. and Sloboda, J.A. (2007) 'An Investigation of Musicians' Synchronization with Traditional Conducting Beat Patterns', *Music Performance Research*, 1, pp. 26–46. Available at: <https://www.proquest.com/docview/2082950337> (Accessed: 10 June 2025).

Luck, G. and Toiviainen, P. (2006) 'Ensemble Musicians' Synchronization With Conductors' Gestures: An Automated Feature-Extraction Analysis', *Music Perception*, 24(2), pp. 189–200. Available at: <https://doi.org/10.1525/mp.2006.24.2.189> (Accessed: 10 June 2025).

Luck, G., Toiviainen, P., and Thompson, M.R. (2010) 'Perception of Expression in Conductors' Gestures: A Continuous Response Study', *Music Perception*, 28(1), pp. 47-57. Available at: <https://doi.org/10.1525/mp.2010.28.1.47> (Accessed: 31 May 2025).

Mann, L.M. (2014) *Effects of gesture height on individual and ensemble singing: Acoustic and perceptual measures*. Ph.D. Thesis. The Florida State University. Available at: <https://www.proquest.com/pqdtglobal/docview/1617975017/8F5BF5528DD74648PQ> (Accessed: 31 May 2025).

Manternach, J.N. (2012a) *Effects of conductor preparatory arm, head, and hand movements on singer extrinsic laryngeal muscle engagement and voicing behaviors*. Ph.D. Thesis. University of Kansas. Available at: <https://www.proquest.com/pqdtglobal/docview/1038973988/96DB3CE4E75C4AE4PQ> (Accessed: 31 May 2025).

- Manternach, J.N. (2012b) 'The Effect of Nonverbal Conductor Lip Rounding and Eyebrow Lifting on Singers' Lip and Eyebrow Postures: A Motion Capture Study', *International Journal of Research in Choral Singing*, 4(1), pp. 36-46. Available at: https://acda-publications.s3.us-east-2.amazonaws.com/IJRCS/volume4/ijrcs4_1_manternach.pdf (Accessed: 8 June 2025).
- Manternach, J.N. (2012c) 'The Effect of Varied Conductor Preparatory Gestures on Singer Upper Body Movement', *Journal of Music Teacher Education*, 22(1), pp. 20-34. Available at: <https://doi.org/10.1177/1057083711414428> (Accessed: 31 May 2025).
- Manternach, J.N. (2016) 'Effects of varied conductor prep movements on singer muscle engagement and voicing behaviors', *Psychology of Music*, 44(3), pp. 574-586. Available at: <https://doi.org/10.1177/0305735615580357> (Accessed: 7 June 2025)
- McCoy, S. (2016) *Your Voice: An Inside View*. E-Book Edition. Gahanna, OH: Inside View Press.
- Messner, M. (2024) 'Gaze in music making: Functions of gaze in orchestra rehearsals and chamber music lessons', *fokus:interaktion*, 2, pp. 1-30. Available at: <https://doi.org/10.17185/duepublico/82363> (Accessed: 14 June 2025)
- Monson, B.B., Lotto, A.J. and Ternström, S. (2011) 'Detection of high-frequency energy changes in sustained vowels produced by singers', *The Journal of the Acoustical Society of America*, 129(4), pp. 2263-2268. Available at: <https://doi.org/10.1121/1.3557033> (Accessed: 10 June 2025).
- Montemayor, M. and Silvey, B.A. (2019) 'Conductor Expressivity Affects Evaluation of Rehearsal Instruction', *Journal of Research in Music Education*, 67(2), pp. 133-152. Available at: <https://doi.org/10.1177/0022429419835198> (Accessed: 28 June 2025).
- Morrison, S.J. and Selvey, J.D. (2014) 'The Effect of Conductor Expressivity on Choral Ensemble Evaluation', *Bulletin of the Council for Research in Music Education*, 199, pp. 7-18. Available at: <https://doi.org/10.5406/bulcouresmusedu.199.0007> (Accessed: 14 June 2025).
- Morrison, S.J. and Silvey, B.A. (2022) 'Conducting', in *The Oxford Handbook of Music Performance*. Online Edition. Oxford University Press, pp. 254-272. Available at: <https://doi.org/10.1093/oxfordhb/9780190056285.013.13> (Accessed: 6 June 2025).
- Morrison, S.J. *et al.* (2009) 'The Effect of Conductor Expressivity on Ensemble Performance Evaluation', *Journal of Research in Music Education*, 57(1), pp. 37-49. Available at: <https://doi.org/10.1177/0022429409332679> (Accessed: 1 June 2025).
- Morrison, S.J. *et al.* (2014) 'Conductor gestures influence evaluations of ensemble performance', *Frontiers in Psychology*, 5(806), pp. 1-8. Available at: <https://doi.org/10.3389/fpsyg.2014.00806> (Accessed: 14 June 2025).

- Nápoles, J. (2013) 'The influences of presentation modes and conducting gestures on the perceptions of expressive choral performance of high school musicians attending a summer choral camp', *International Journal of Music Education*, 31(3), pp. 321-330. Available at: <https://doi.org/10.1177/0255761411434823> (Accessed: 31 May 2025).
- Nápoles, J., Silvey, B.A. and Montemayor, M. (2021) 'The influences of facial expression and conducting gesture on college musicians' perceptions of choral conductor and ensemble expressivity', *International Journal of Music Education*, 39(2), pp. 260–271. Available at: <https://doi.org/10.1177/0255761420926665> (Accessed: 14 June 2025).
- Peddell, L. (2008) 'Factors Influencing Listeners' Perception of Expressiveness for a Conducted Performance', *Bulletin of the Council for Research in Music Education*, 178, pp. 47-61. Available at: <https://doi.org/10.2307/40319338> (Accessed: 1 June 2025).
- Platte, S.L. et al. (2024a) 'Breathing Against the Conducting Gesture? The Effect of Congruent and Incongruent Gesture-Task Combinations on Breathing Behavior and Resulting Loudness of Choral Singers', *Music & Science*, 7, pp. 1-13. Available at: <https://doi.org/10.1177/20592043231218558> (Accessed: 8 June 2025).
- Platte, S.L. et al. (2024b) 'The Effect of Different Preparatory Conducting Gestures on Breathing Behavior and Voice Quality of Choral Singers', *Journal of Voice*, 38(6), pp. 1524.e1-1524.e10. Available at: <https://doi.org/10.1016/j.jvoice.2022.06.001> (Accessed: 8 June 2025).
- Poggi, I. and Ansani, A. (2022) 'Multimodality and Music Performance. The Lexicons of Gesture and Gaze in Orchestra and Choir Conductors', *Acta Polytechnica Hungarica*, 19(5), pp. 215-234. Available at: <https://doi.org/10.12700/APH.19.5.2022.5.11> (Accessed: 12 June 2025).
- Poggi, I., D'Errico, F. and Ansani, A. (2021) 'The conductor's intensity gestures', *Psychology of Music*, 49(6), pp. 1478–1497. Available at: <https://doi.org/10.1177/0305735620963179> (Accessed: 12 June 2025).
- Poggi, I. et al. (2020) 'The Power of Gaze in Music. Leonard Bernstein's Conducting Eyes', *Multimodal Technologies and Interaction*, 4(2), pp. 20.1-20.22. Available at: <https://doi.org/10.3390/mti4020020> (Accessed: 14 June 2025).
- Ragan, K. (2020) *A Systematic Approach to Voice: The Art of Studio Application*. San Diego, CA: Plural Publishing, Inc.
- Price, H.E. and Chang, E.C. (2005) 'Conductor and Ensemble Performance Expressivity and State Festival Ratings', *Journal of Research in Music Education*, 53(1), pp. 66-77. Available at: <https://doi.org/10.1177/002242940505300106> (Accessed: 3 June 2025).

- Price, H.E., Mann, A. and Morrison, S.J. (2016) 'Effect of conductor expressivity on ensemble evaluations by nonmusic majors', *International Journal of Music Education*, 34(2), pp. 135–142. Available at: <https://doi.org/10.1177/0255761415617925> (Accessed: 14 June 2025).
- Randolph, J.J. (2009) 'A Guide to Writing the Dissertation Literature Review', *Practical Assessment, Research & Evaluation*, 14(13), pp. 1-13. Available at: <https://openpublishing.library.umass.edu/pare/article/1516/galley/1467/view/> (Accessed: 28 June 2025).
- Silvey, B.A. (2013) 'The Role of Conductor Facial Expression in Students' Evaluation of Ensemble Expressivity', *Journal of Research in Music Education*, 60(4), pp. 419-429. Available at: <https://journals.sagepub.com/doi/10.1177/0022429412462580> (Accessed: 31 May 2025).
- Silvey, B.A. and Fisher, R.A. (2015) 'Effects of Conducting Plane on Band and Choral Musicians' Perceptions of Conductor and Ensemble Expressivity', *Journal of Research in Music Education*, 63(3), pp. 369–383. Available at: <https://doi.org/10.1177/0022429415597888> (Accessed: 14 June 2025).
- Silvey, B.A. and Koerner, B.D. (2016) 'Effects of Conductor Expressivity on Secondary School Band Members' Performance and Attitudes Toward Conducting', *Journal of Research in Music Education*, 64(4), pp. 474–486. Available at: <https://doi.org/10.1177/0022429415622451> (Accessed: 14 June 2025).
- Silvey, B.A. *et al.* (2025) 'How much is too much? Effects of unexpressive, expressive, and overly-expressive conducting on ensemble expressivity ratings', *International Journal of Music Education*, 0(0), pp. 1-12. Available at: <https://doi.org/10.1177/02557614251328171> (Accessed: 30 June 2025).
- Skadsem, J.A. (1997) 'Effect of Conductor Verbalization, Dynamic Markings, Conductor Gesture, and Choir Dynamic Level on Singers' Dynamic Responses', *Journal of Research in Music Education*, 45(4), pp. 509-520. Available at: <https://doi.org/10.2307/3345419> (Accessed: 4 June 2025).
- Society Contest and Judging Committee (SCJC), Barbershop Harmony Society (BHS) (2025) *Contest and Judging Handbook*, March 2025 Revision. Available at: https://files.barbershop.org/PDFs/Contests-Judging/CJ_Handbook.ver_16.5.pdf (Accessed: 6 June 2025).
- Sousa, G.D. (1988) *Musical conducting emblems: An investigation of the use of specific conducting gestures by instrumental conductors and their interpretation by instrumental performers*. Ph.D Thesis. The Ohio State University. Available at: <https://www.proquest.com/docview/303698348/4C7627B730FA4436PQ> (Accessed: 4 June 2025).

- Sundberg, J. (1982) 'In tune or not? A study of fundamental frequency in music practise', *Department of Speech, Music, and Hearing—Quarterly Progress and Status Report (Royal Institute of Technology, Stockholm)*, 23(1), pp. 49-78. Available at: <https://www.researchgate.net/publication/242260659> (Accessed: 15 June 2025).
- Sundberg, J. (2001) 'Level and Center Frequency of the Singer's Formant', *Journal of Voice*, 15(2), pp. 176–186. Available at: [https://doi.org/10.1016/S0892-1997\(01\)00019-4](https://doi.org/10.1016/S0892-1997(01)00019-4) (Accessed: 10 June 2025).
- Sundberg, J. and Thalén, M. (2010) 'What is "Twang"?', *Journal of Voice*, 24(6), pp. 654–660. Available at: <https://doi.org/10.1016/j.jvoice.2009.03.003> (Accessed: 10 June 2025).
- Udell, A.S. (2025) *Effect of Laban Movement on Gesture Recognition and Response of Seventh- and Eighth-Grade Band Students*. DMA Thesis. Rutgers, The State University of New Jersey. Available at: <https://www.proquest.com/pqdtglobal/docview/3155924709/52CB016F0AD147D5PQ> (Accessed: 12 June 2025).
- VanWeelden, K. (2002) 'Relationships between Perceptions of Conducting Effectiveness and Ensemble Performance', *Journal of Research in Music Education*, 50(2), pp. 165-176. Available at: <https://doi.org/10.2307/3345820> (Accessed: 3 June 2025).
- Visentin, P. *et al.* (2010) 'A Pilot Study on the Efficacy of Line-of-Sight Gestural Compensation While Conducting Music', *Perceptual and Motor Skills*, 110(2), pp. 647-653. Available at: <https://doi.org/10.2466/pms.110.2.647-653> (Accessed: 31 May 2025).
- Wöllner, C. (2008) 'Which part of the conductor's body conveys most expressive information? A spatial occlusion approach', *Musicae Scientiae*, XII(2), pp. 249-272. Available at: <https://doi.org/10.1177/102986490801200204> (Accessed: 28 June 2025).
- Wöllner, C. and Auhagen, W. (2008) 'Perceiving Conductors' Expressive Gestures from Different Visual Perspectives. An Exploratory Continuous Response Study', *Music Perception*, 26(2), pp. 129-144. Available at: <https://doi.org/10.1525/MP.2008.26.2.129> (Accessed: 1 June 2025).
- Yontz, T.G. (2001) *The effectiveness of Laban-based principles of movement and previous musical training on undergraduate beginning conducting students' ability to convey intended musical content*. Ph.D Thesis. University of Nebraska. Available at: <https://www.proquest.com/pqdtglobal/docview/275750030/E84482D8C035463CPQ> (Accessed: 28 June 2025).