THE PERFORMER-AUDIENCE RELATIONSHIP DURING LIVE AND REMOTE MUSICAL PERFORMANCES

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ABSTRACT

This study assesses audience engagement and entrainment with, and enjoyment of musical performances across different types of mediation. Using message processing as a framework to guide the study, it was predicted that audience members viewing a live performance will report higher levels of engagement and entrainment with, and enjoyment of a performance than audience members that view a remote audience-centered performance who in turn will report higher levels of the factors than remote audience members viewing a performance production. To test the hypotheses, participants viewed a musical performance of a barbershop quartet in one of the three experimental conditions and self-reported their engagement and entrainment with, and enjoyment of the performance. For the first hypothesis, the hypothesized linear effect was found; however, a significant quadratic effect suggested that the results may have been curvilinear in nature as well. The test of the second hypothesis concerning entrainment showed no significance. The discussion addressed methodological concerns that may have influenced the results, and identified limitations that should be investigated in future research.

Keywords: audience, communication, engagement, enjoyment, message processing, music, performance, video-mediation

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CHAPTER 1

INTRODUCTION

Advancements in communication technology are changing the way we interact and communicate with others. The invention of different devices and communication platforms, such as cell phones and social media, has made it easier than ever to access people from around the world. We can maintain cost-effective long-distance relationships with individuals from practically any location. Instead of spending money on long-distance service calls, we can utilize social media (e.g., Facebook) and phone applications (e.g., KakaoTalk, WhatsApp) to make free wifi-based phone calls. Similarly, technology has given content producers easier access to people too. Content producers can share information with users across the world employing a variety of digital technologies and platforms such as television, radio, YouTube, social media, and many more.

Different communication platforms allow varying degrees of social presence. Social presence refers to the degree to which an individual is aware of the other individual with whom they are communicating (Kim, Frank, & Kim, 2013; Short, Williams, & Christie, 1976). In general, face-to-face (FtF) communication is the most socially present form of communication. Thus far, technology has not perfectly emulated FtF communication - in some way, one or more of our senses are being underutilized in other mediated communication settings relative to FtF communication. For example, in an everyday telephone conversation the only shared sense being utilized between the communicators is our sense of sound; our other senses are not being utilized or are being underutilized. Even then, the quality of sound we experience is limited by the phone's speakers. This sense of diminished presence is discussed in some communication research and theory (Daft & Lengel, 1986; Short, Williams, & Christie, 1976; Biocca, Harms, &

Burgoon, 2003). Certain media allow a greater sense of social presence than others (Daft & Lengel, 1986; Short et al., 1976; Yoo & Alavi, 2001). Social presence is enhanced by the media's capacity for providing the communicative partners' immediate feedback to each other(Grau, Kleiser, Bright, 2019; Kaplan & Haenlein, 2010). For example, telephones allow for near-instant audio feedback from a communicative partner and consequently allow a greater sense of social presence than, for instance, email which largely constricts communicators to text-based messages, and provide less timely feedback.

Video-mediated communication (e.g., television, FaceTime), though allowing a lesser sense of social presence than FtF communication, can be an effective method for content producers to share their messages with a broader audience. Video-mediated platforms vary considerably in their ability to allow for comprehensive and immediate feedback from audience members. In some forms of video-mediated communication -- television, for instance -- audience members can provide feedback by writing comments to the content producer, a slower, laborious, and ultimately uncertain manner of providing feedback. The largest video-mediated internet platform through which content producers can access and upload videos for global audiences is YouTube (Alexa Internet, Inc., 2018). YouTube, unlike broadcast television, does allow for audience members to provide feedback for the content producer as they are watching via comments. This type of feedback is often not provided in real time and is of a different form relative to the feedback provided by audience members in live settings. Further, other audience members on the YouTube platform can also access and respond to each other's feedback as well. Another feedback function available to YouTube audience members is that they can indicate whether they "like" or "dislike" a video with a single click of a button.

According to Alexa Internet, Inc. (2018), YouTube is the second most visited website on the globe just behind Google. On YouTube, the most popular videos are typically music videos. According to Statista, Inc. (2018), of the top ten videos with the most views, nine are music videos. With nine of the top ten videos being music videos, we can assume music and musical performances are frequently viewed on YouTube. YouTube allows performers to have the opportunity to communicate their message through videos to individuals around the globe.

Communication technologies and platforms have evolved the way in which musical performers' access their audiences. Musical performance is often a FtF communicative act in which there is only some limited physical space between performer(s) and audience members. Video-based performances can, on the other hand, require a performer to treat the camera as a proxy for the audience. In other words, in order for audience members to feel that the performer is performing for them, the performer must directly engage with the camera. Video-based performances can be experienced in less direct ways as well, for instance if the performance product is a recording of a performer performing for a live (e.g., concert hall, stadium) audience. In such circumstances, the remote audience viewers may only see the performance from the vantage point of an observer, watching as the performer is singing or playing to the live audience; the remote audience does not receive direct feedback from the performer. On the other hand, it is also possible for the performer to occasionally engage with the camera, elevating the perception for the remote audience that the performer is "directly" engaging with them. Finally, in today's large concert culture, it is also not unusual for the live audiences to experience the performance via giant video screens. In such circumstances, live audiences can also experience part of what the remote audience experiences.

The evolution of the performer-audience relationship, as described above, suggests that the variety of potential musical performance interactions between performers and their audience is changing. Relatedly, both performers and their audiences may be becoming more aware of and sophisticated about their respective roles during the communicative interaction of a performance. Performers are adapting by adjusting their behaviors accordingly, such as interacting directly with a camera, knowing that a remote audience member will likely be viewing this in the future. Moreover audience members may adjust their expectations of the performance based on their role in the performance (i.e., most live audience members have the capacity to interact with the performer whereas remote audience members are limited in their experience of the performance largely to observation). In the latter instance, roles of performers and audiences may fluidly change depending on the ways these videos are recorded, presented, and consumed. As audiences continue to gain more experience with live performances and digitally-mediated performances, performances in which performers engage directly with the audience (live or by camera proxy) and performances in which audience members are "observing" the performer engaging with a live audience, it makes sense that audiences will develop a more complex understanding of what it means to experience and access performances and will perceive and evaluate performances differently.

The present study is designed to assess audiences' different levels of perceived engagement and entrainment with, and enjoyment of musical performances across levels of mediation: specifically, live performance and video-mediated performance. As suggested above, remote audience members likely can recognize when a performance is intended for them. In a video-mediated performance, if a performance is more directed towards the remote audience instead of a live audience, the video-mediated audience may experience more engagement with

the performance, may entrain more with the performance, and ultimately enjoy the performance more than if it was not directed towards them.

A message processing perspective will be utilized to create a framework for examining musical performance and digitally-mediated musical performance. The following literature and research will be discussed in order to generate specific hypotheses. First, differences between monologic and dialogic communication will be discussed. Then, the concept of the participant-observer phenomena will be discussed to aid in the differentiation of different audience types and their roles. Next, the Cooperative Principle, ostensive-inferential communication, and Relevance Theory will be used to inform an explanation for how audiences become aware of and experience their role within the communicative event that is a musical performance. Lastly, gaze as an engagement cue will be discussed to further elaborate on how audience members discern their role in digitally mediated performances.

Message Processing and the Digitally Mediated Musical Experience

The most fundamental distinction that has emerged over the last several decades in the relationship between performers and their audience is the distinction between live performance and remote-mediated performance (these days digitally-mediated performance). Even in a live setting, performers can typically only see the audience members closest to them. At present, performers do not see their aggregate remote-mediated audience members at all. Conversely, live audiences and remote audiences have the opportunity to see the performers; however, perspectives may be different. Live audiences and, under some circumstances remote audiences, may feel as though they are part of the performance event. Under other circumstances, remote audiences may feel as though they are only watching or observing the production of the performance. That is, remote audiences often see a performer performing in front of a live

audience from the vantage point of an observer rather than a participant. Different camera angles allow audience members to see different angles of the performance, potentially diminishing, or enhancing, the perceived engagement they receive from the performer. An audience's perspective and its effect on the communicative experiences of the audience will be discussed further below.

Whether an audience member is viewing the performance as a live audience member or a remote audience member, performers are always the primary communicator. In general, audiences are limited in their ability to provide the performer with feedback. Live audiences, however, have more opportunity to provide near instant feedback to the performers (e.g., shouting, clapping, and dancing); whereas, remote audiences are often limited to delayed feedback options (e.g., sending emails or messages to the performer via technological devices) or no feedback. Essentially, remote audiences typically have less access to the performer than do live audiences. This is changing though as concert venues grow in capacity, allowing for larger audiences in which the individuals in the perimeter may have experiences that rival in some aspects that of the remote audience. These live audience members might experience the performer's face on screens and the audio of the performance is mediated by speakers.

Unchanged through all of the above however is the fundamental communicative relationship between performer and audience members. All communicative relationships are characterized by the same goals, i.e., achieving a state of *understanding* between interactants (Gasiorek & Aune, 2017). Gasiorek and Aune (2017) describe understanding as an isomorphic meme state, which is a shared idea in the minds of the communicators, achieved via the communicative process through which the interactants. In the present case the performer and the audience achieve a state in which both are converging upon, and ultimately experience, the same

meme state. In music these meme states may be the emotional underlying message of the song, the content of the lyrical message, among other things. In the special case of music as communication, understanding may include psychological and emotional convergence of the performer and audience members' minds.

Pickering and Garrod (2004) identify the differences between two forms of communicative processes which are particularly important to understanding musical performance as a communicative process. When communicative interactants are separated in time and space such that they have little to no opportunity to engage in dialogue with one another (e.g., creating/viewing movies, recording/listening to music, creating/watching movies, writing/reading books), how such communicative interactions are experienced and studied can differ significantly from "real time" communication that is rich with synchronous interaction between communicators. Pickering and Garrod (2004) describe the former communicative situations as monological in nature. Researchers of such communicative processes ted to focus on the individual communicators. This is done by examining message production (on one side) and message comprehension (on the other). In this case, messages are often viewed as rather "static," because there is little opportunity for the message to be changed upon release.

Conversely, studying communication as a more "real time" situation allows for a greater opportunity for the communicators to engage in interaction, allowing researchers to examine the back-and-forth communication between communicators, and the manner in which they tweak their messages in order to achieve understanding. Messaging in this case is more dynamic; focusing on an individual's behavior becomes less fruitful in understanding the more *dialogical* communicative event (Gasiorek & Aune, 2017; Pickering & Garrod, 2004).

Musical performances can take the form of monologic or dialogic communicative events. Specifically, in monologic musical performances such as a remote performance, performers often receive little to no feedback from their audience members, changing the way the message is communicated; whereas, dialogic musical performances, such as a live up close performance, allow for the message to be constructed between the audience and the performers. One factor that can influence whether the communicative event is monologic or dialogic is related to the extent to which the audience member is a performance event *participant* or performance event *observer*. In the present study, the distinction between participants and observers in a communicative event is critical to understanding how audience members experience a musical performance live and how audience members experience a remote, digitally-mediated musical performance.

Participant and observer experiences with communicative events. Participants and observers of communicative events have different perspectives of the communicative event in which they are engaged. Participants of a communicative event are constructing the interaction together, or co-constructing the communicative interaction; essentially participants feel a sense of mutual investment within the interaction (Ramierez Jr., Zhang, McGrew, & Lin, 2007). That is, participants are able to provide readily accessible feedback affecting the communicative event. In performance, this feedback allows performers to adjust to the audience. The mutual investment felt by participants would suggest that participants are viewing the communicative interaction partly as an observation of themselves as they are receiving reactions and feedback from their communicative partner (Burgoon, 1994; Burgoon & Le Poire, 1999). Observers are not co-constructing the communicative interaction they are simply witnessing the event, having little opportunity to provide immediate feedback. In the latter situation, the observer's

comprehension of the message, i.e., the performance, becomes more important in understanding the communicative event than does the dyadic process for participants of *creating understanding*.

In a digitally-mediated performance, remote audiences are constricted to a more observation-based role, with little or no participation in the performance; conversely, live audience members have a perception of being a participant in the communicative event. Remote audiences viewing a live performance in which the performer does not directly engage with the camera (hereafter a "performance production"), may view fewer immediacy cues and nonverbal cues from the performers (e.g., smiles, closer proximity). Remote audience members may see fewer facial expressions and engagement cues (e.g., gaze) than live viewers. Engagement cues from the performers may produce greater enjoyment for participants of the live performance relative to the participants who are remotely observing the communicative event as engagement cues are processed differently as a participant and as an observer (Ramierez Jr. et. al, 2007). Engagement cues in general musical performance, invite acknowledgement (e.g., clapping, wooting, head nods), and even reciprocation in live settings. In remote settings, the engagement cues are experienced by the audience but there is not an illusion that acknowledgement or reciprocation of behavior will reach the performer. Engagement in the form of gaze can positively or negatively influence an individual's arousal (Argyle & Cook, 1976; Bailenson, Beall, Loomis, Blascovich, & Turk, 2005), however is known to increase appreciation of a performance (Antonietti, Cocomazzi, & Iannello, 2009).

As technology has changed to incorporate different video-production techniques, remote audiences' experience may fluidly change between being a participant and an observer. Engagement cues such as direct gaze can lead individuals to perceive that the performer is

directly communicating with them. Accordingly, if performers are directly engaging with the camera as a proxy for the remote audience, the remote audience may feel more like a participant. At other times when the performer is not looking directly at the camera, remote audience members may feel solely like an observer of the performance event because they are not physically present. Finally, if the performer interacts with the camera on-and-off throughout the performance, the remote audience member's experience may vacillate between participant and observer based on the performer's perceived engagement with them. Further, the live audience always knows they are a live audience, whether they are being looked at or not; however, the remote audience always knows they are remote, but occasionally get to experience the illusion of being attended to by the performer.

The Cooperative Nature of Communication

Audience members that are present to a live performance are generally fixed in the role of participant. That is, it would be difficult (but not impossible) for an audience member in a live performance to adopt the role of an observer because they are physically present with others experiencing the moment. Remote audience members, on the other hand, may fluidly vacillate between being a participant or an observer, depending on the extent to which the performer engages with the camera. Performers may intermittently engage with the remote audience (through a camera) thus allowing the remote audience members to adopt the perception of being a participant or an observer. A digitally-mediated performance in which the remote audience members are the *exclusive* audience, that is, there is no live audience for the performance (hereafter a "remote audience-centered performance") may allow remote audience members to experience the communicative event solely as participants of the communicative event. Generally, remote audience members manage these shifts in roles fluidly. In order to understand

how the remote audience members can manage these role changes fluidly, it is important to understand how communication is inherently a cooperative process.

Grice (1975; 1981; 1989) argues that communication is governed by the Cooperative Principle (CP). The CP refers to the assumption that people will engage in appropriate and expected behavior throughout a communicative event (Grice, 1975, 1981, 1989). This often takes the form of communicators making implicatures and inferences about what they are saying to one another and what their expectations are for one another. For instance, in a conversation, if one speaker stops talking and makes eye-contact with the other it is often an implied signal that the speaker is yielding the floor to the other, expecting the other communicator to talk. The other communicator, in order to be cooperative, should in turn accept their turn to speak. This is one of the ways that turn-taking is managed, through implicit expectations signaled through silence and gaze. The CP requires communicative participants to attend to and use these signals and respond accordingly, in order to be cooperative. The CP applies generally across all forms of communicative events, including the relationship between performer and audience members in musical performances.

The cooperative nature of audiences and performers can be seen in use of explicit communication. For example, audience members can be told to “please silence your phone” or “please give a round of applause.” However; far more of the behavior and expectations of audience members and performers are managed through implicit messages and inferred expectations. An example of an implicit expectation is when a performer points the microphone at the audience. The performer often does not explicitly tell the audience to sing along; nevertheless the audience recognizes the signal of the microphone being pointed at them as an indication to sing along. Other examples include when or when not to clap. In American cultures,

audience members may be allowed to clap during certain performances and not during others. During a rock concert, the performer may signal they want the audience members to clap along by using large hand clapping gestures towards the audience; whereas, during a concert hall performance of classical music, it is often not appropriate to clap during the song. In the concert hall performance of classical music, people will wait until the end of the song or the set of songs to clap, usually knowing when to do so without being told; however, there will occasionally be audience members that believe the piece is over, before it actually is and begin to clap before the performance is done, stopping upon recognition that the piece was not finished. This knowing of when or when not to clap stems from knowledge of norms but also the nonverbal cues from the director and performers on stage. Watching the conductor's gestures, even from the back, one can see when the musicians are signaled that the piece is over.

As demonstrated, audience members often recognize and respond to the expectations of the performers via the performer's use of behaviors that activate the audience's inferences about those expectations. The implicit messages, and inferences, work to elicit seamless interactive management of the communicative event. It must be remembered that a performer engages in a variety of behaviors while performing, and some of those behaviors are intended to be communicative while many are not. Researchers such as Sperber and Wilson (1986) acknowledge that many behaviors do not hold communicative intent, for example, a performer may be clapping to keep tempo, not to get the audience to clap along. Some behaviors, however, do activate communicative expectations and produce cooperative outcomes in the performer and the audience. Sperber and Wilson (1986) argue that we recognize the differences between ordinary behavior and communicative behavior in part due to the ostensive nature of communication.

Ostensive-inferential communication and relevance theory. Anytime we are in the presence of others we are aware of their behaviors and of our own behavior, and they are likely aware of our behavior. We may or may not attend to the behaviors that are around us. At what point do we attribute communicative intent to their behavior? Sperber and Wilson (1985, 1986; Wilson & Sperber, 2002) address this question in relevance theory. Specifically, in relevance theory, they highlight the concept ostensive-inferential communication. Scott-Phillips (2015) refers to ostensive-inferential communication as "the expression and recognition of informative and communicative intentions" in the behavior of others (p. 10). The informative intention refers to the intention of a communicator to communicate something to their listener or listeners (Sperber & Wilson, 1986); essentially, the communicator wants the listener to know something or do something. For example, a performer looking at their audience and starting a clapping gesture towards the audience indicates to the audience that the performer wants the audience members to clap - that is the informative intention

The communicative intention, on the other hand, refers to the communicator's intention to make some informative intention understood by the listener or listeners (Sperber & Wilson, 1986); essentially, the communicative intention refers to the communicator's attempt to bring about in the listener the awareness that they are trying to communicate with listener. Thus, in a musical performance, when the performer gestures to clap towards the audience, making eye-contact with the audience members. The performer is trying to make the audience clap, but also that they want the audience to recognize their intention is to communicate something to the audience or get the audience to do something, in the specific case, get the audience to clap. The example actualizes the ostensive-inferential communication process when the audience members fully realize that the performer wants them to clap and so they clap in response.

As suggested above, performers when performing in the presence of a live audience may communicate with the audience in a variety of ways (e.g., smiling, clapping hand gestures, pointing the microphone at the audience). In the performance the performer may also be dancing, swaying along to the music, or clapping and audiences do not necessarily recognize these behaviors as communicative events in the absence of making eye-contact and gesturing at an audience member. In these cases, the performer does not intend for the action to be communicative nor does the audience member recognize it as a communicative behavior. Just as we can understand the differences between something that is communicative and not communicative in conversation, we can generally tell the difference between communicative and non-communicative intentions of a performer.

To reiterate: the ostensive-inferential nature of communication helps us understand how audience members recognize that the performer wants the audience member to understand that the performer wants them to know or do something based on the performer's communicative behavior. One of the primary ways this is done is through eye-contact or, more specifically, gaze. Gaze plays a particularly important role in respect to digitally-mediated performances. In a performance production the performers may not frequently engage with the camera due to the presence of the live audience; whereas, in a remote audience-centered performance the performers are more likely to engage with the camera as there is no live audience to engage with. A performance production typically constrains audience members to feel more like observers of the communicative event; while a remote audience-centered performance, during which a performer makes frequent virtual eye-contact with the remote audience via the camera allows remote audience members to feel more like participants of the communicative event. With digitally-mediated performances, as alluded to above, recognition of whether the communicative

interaction is received as a participant or an observer can be developed by use implicit engagement cues.

Gaze. One of the more frequently used implicit cues used by an audience member to discern whether they are a participant or observer of the communicative event is eye gaze. Gaze is often studied in FtF communication, where individuals make use of mutual gaze in real time. Video-mediated performances do not allow for the same type of mutual gaze as FtF communication; it does, however, allow viewers access to one-sided gaze, i.e., gaze on the part of the performer (Fullwood & Doherty-Sneddon, 2016). This perception of gaze may create moments in which remote audiences members may feel as though they are invited to play the role of a participant.

According to Angiolillo, Blanchard, Israelski, and Mané (1997), for a communicator to maintain the integrity of a perception of gaze with their intended audience, the communicator must look directly at the camera. Therefore, performers wanting their remote-audience members to feel a perception of gaze from them, the performers will need to look directly at the camera. This perception of gaze can be critical to the engagement and enjoyment of a remote-audience member because in musical performances, gaze has been shown to increase audiences appreciation of live performances (Antonietti et al., 2009). Therefore, remote audience members who perceive they are the recipient of the performer's gaze during a performance, should in turn appreciate the performance more. By increasing the amount of gaze performers direct towards their audience members, audience members -- live or remote -- should enjoy a performance more. Further, research suggests that live audiences members enjoy performances more than remote audience members (Swarbrick, Bosnyak, Livingstone, Bansal, Marsh-Rollo, Woolhouse, & Trainor, 2019; Wheeler, 1985).

Implications for Audience Members

To summarize, live audience members are more likely view their role in a performance as that of a participant, whereas remote audience members are often relegated to experiencing the performance in the role of an observer. This is because the cooperative nature of communication is more salient in live settings in which an individual feels more obliged to be cooperative and be alert to communicative behavior. Consequently, this should make live audience members feel more like participants. The live audiences should also feel more engaged by the performance and subsequently enjoy the communicative event more than would remote audience members, because they experience greater cooperative expectations in the communicative interaction. As live audience members experience greater cooperative expectations, they must be more engaged with the performance in order to be cooperative. In the live audience performance, the performance is experienced more dialogically as performers receive real-time "feedback" messages from the audience members; the remote audience members viewing a performance production, on the other hand, will have more of a monologic experience of the performance, and generally have more of an observer experience.

On the other hand, the remote audience members viewing the remote audience-centered performance should receive more immediacy cues from the performers (e.g., gaze) and therefore should feel more engagement and enjoyment from the performance than remote audience members viewing the performance production. The remote audience members that are viewing the performance production, will feel more like an observer of the performance due to their minimal engagement with the performers. This set of audience members will receive fewer immediacy cues from the performers, likely leading to them experience less engagement and consequently less enjoyment with the performance.

In a remote audience-centered performance, performers are more likely to engage in gaze with the camera than if they had an audience presence. As there is not a live audience present, performers can direct their attention specifically to the camera; whereas in live performances, performers often engage with a variety of live audience members instead. A performance production typically does not include as many engagement cues from the performers to the remote audience members. If these remote audience members viewing a performance production understand that the performance was not primarily intended for them, they may still enjoy the performance in spite of feeling less engaged with the performance. Given the above arguments, the following hypothesis was tested.

H1: Audience members present at a live performance will report more engagement with and experience more enjoyment of the performance than will remote audience members viewing a remote audience-centered performance, who will in turn feel more engaged and experience more enjoyment than remote audience members viewing a performance production.

Experiencing Entrainment within Musical Performance

As discussed above, communicative events can be conceptualized as more monologic or dialogic. More monologic interactions are more one-sided and there is less chance for the communicator to change their message in real-time (Branigan, Catchpole, & Pickering, 2011). More dialogic interactions are communicative interactions that have a back-and-forth exchange, allowing more opportunity for communicators to change their message in real-time. A live performance is more interactive in nature, consequently is more dialogic as performers and audience members can engage with one another, experiencing immediate verbal and nonverbal feedback (e.g., singing along with the song, facial expressions, dancing). Digitally-mediated performance is typically more monologic as there is no immediate access to feedback from the

audience for the performer. These remote audience members may be able to experience a degree of engagement with performers as a function of the performers engagement with the camera, but that experience is asymmetrical. The performer experiences no feedback regarding the remote audience's level of engagement.

One attribute of the performer-audience experience that often arises during a performance is the phenomenon of entrainment between the performer and the audience. Entrainment in its broadest sense refers to a process of synchronization of separate patterns (Bachrach, Fontbonne, Joufflineau, & Ulloa, 2015; Clayton, 2012; Tan, Pfordresher, & Harré, 2017). Two characteristics of musical performance that can influence our engagement and entrainment with a performance are rhythm and tempo of the music (Johnson, 2015; Khalfa, Roy, Rainville, Dalla Bella, & Peretz, 2008; McAuley, 2010). Rhythm is defined as a pattern or the perception of pattern in sound (McAuley, 2010) or the time passing between a set of notes (Harwood, 2018). Tempo is defined as the rate or speed of the music (Harwood, 2018; McAuley, 2010). These two characteristics, contributes to entrainment in music and aids in encouraging entrainment. In other cases, Clayton, Sager, and Will (2005) argue that entrainment is a fundamental aspect of enjoying music. Harwood (2018) states that "listening to music is an embodied experience: we don't just listen with our ears and brains; we also listen and feel with our bodies" (p. 78). People engaging in tapping their foot, clapping their hands, and nodding their head are manifestations of entrainment.

Audience members that feel more engaged with the performance will likely report higher entrainment scores than those less engaged by the performance. Audience members that are more engaged with a performance are likely experiencing the performance more fully, consequently, they may be more affected by the performance in the form of entrainment. Further, audience

members are not experiencing a performance in isolation, by themselves; it is likely that entrainment effects are enhanced as a function of experiencing the performance as a part of an audience. The aforementioned discussion leads to proposal of the following hypothesis.

H2: Audience members present at a live performance will report higher levels of entrainment than audience members viewing the remote audience-centered performance, who will in turn, report higher levels of entrainment than remote audience members that are viewing the production performance.

CHAPTER 2

METHOD

Overview

The present study tested the above hypotheses by exposing participants to a barbershop quartet performance in a live or one of two digitally-mediated settings. A one-way factorial design of three levels was be used: one group of participants viewed the performance as a live audience; another group of participants viewed the performance as a performance production, i.e., a digital recording of the live performance and the audience; the third group of participants will view a digital recording of the remote audience-centered performance, a performance solely intended for the remote audience, i.e., the audience member is the camera, therefore, the performers are exclusively performing for the remote audience.

Participants

There were 60 students from the University of Hawai`i at Mānoa enrolled in one or more Communicology courses (33 male, 26 female, and 1 preferred not to say). The average age of participants was 19.86 (*SD* = 1.94, range = 18-29) and the students were primarily mixed ethnicity (1 African American, 1 American Indian, 10 Caucasians, 4 Chinese, 3 Japanese, 1 Korean, 3 Pacific Islanders, 25 Mixed, and 12 Other). Participants also had varying musical backgrounds (Attendance of live musical performance *M* = 4.38, *SD* =1.93; Experience with barbershop quartets *M* = 2.48, *SD* = 1.49; 24 play a musical instrument, 36 do not play a musical instrument; 26 have performed publicly, 34 have not performed publicly). The participants were self-selected by signing up utilizing the Communicology Department's SONA research website. The SONA research website grants research participation credits to put towards their research participation credit portion of their Communicology course(s). These participants participated in

one of three conditions: the live condition (n = 16), the remote audience-centered performance condition (n = 27), or the performance production condition (n = 17). Prior to the performance or viewing session, participants signed a consent form (Appendix A). For participants in the live performance, a different consent form (Appendix B) was signed to provide consent to be part of the recording. Participants that did not wish to be recorded could still participate in this condition; however, they would have been required to sit outside of the camera's lens range.

Performers

The study utilized the men's barbershop quartet, 19th Avenue, from the Honolulu community. Barbershop, which is a four-part a cappella style of singing, can be sung by four (a quartet) or more individuals (e.g., double-quartet, chorus)[1]. Barbershop quartets' performances are known to engage with their audience members (via eye-contact and gestures) and with each other because there is an absence of a conductor who would otherwise be the subject of the performers' attention. In many musical settings, there is a director who receives the attention of the performers which consequently minimizes the performers engagement with audience members.

A barbershop quartet was specifically chosen instead of other forms of performers for a variety of reasons. First, a barbershop quartet can perform with the absence of a conductor/director, which allows greater immediacy and engagement between performers and audience members. Second, it is in the nature of a barbershop quartet performance for performers not only to engage with one another but also to engage with the audience members by use of eye-contact and gestures among other behaviors. Third, there are fewer performers for the audience members to focus on than in larger groups in which the audience members spread their attention

out further. Last, barbershoppers have a system in place for scoring performances by certified judges from barbershop organizations to control for possible variance between the performances.

Procedures

The quartet performed in the Music Building room 36 at the University of Hawai`i at Mānoa upon signing a video-release form (Appendix C). The quartet met early to warm up and be recorded for one set of the remote audience. The barbershop quartet was instructed to perform for the remote audience; they were told that audience members will be viewing this in the future and it is imperative that they engage with the camera as if it was their audience. Three recordings were made for the remote audience so we had options to find a comparable quality to the live performance to be shown as the remote-audience centered performance. In this condition, as mentioned above, the quartet was told that individuals are going to watch it in the future. The quartet will specifically be told: "We are filming these videos for audience members who will be viewing this in the near future. Please engage with the camera as feels natural for you in such a performance." As the live performance/recording in the presence of a live audience only has one shot, it was important to have a few recordings to ensure a performance of comparable value.

After recording their performance of an arrangement of *Lullaby* by Billy Joel for the remote audience members, live-audience members arrived to view the performance. The camera was set up at an angle towards the back of the room to record the performance production, this will include audience members in the line of sight of the performers. After watching the performance, the audience members filled out a survey accessing their perceptions of enjoyment, engagement and entrainment of the performance.

After the performance, videos were judged to assess comparability in the Barbershop Harmony Society (BHS) singing and performance category. Judging upon the music category is

not specifically relevant to the study, as it primarily focuses on the barbershop style; therefore, two judges from each the performance and singing category were selected to review the pieces to ensure that engagement and quality of the performances are similar. Before sending the videos to the experts, local barbershoppers aided in narrowing down which of the three solely remote audience videos was most comparable to the live audience recording. Upon narrowing it down, the solely remote audience and the performance production recordings were sent to active BHS certified singing judge and coach, Eddie Martinez; BHS candidate singing judge and coach, Peter Cunningham; BHS candidate performance judge and coach, Mo Fields; and BHS candidate performance judge and coach, Theresa Weatherbee. These four individuals viewed the videos of the performance and judged the singing level and performance level were sufficiently comparable to one another in quality.

After the live performance, the performance production condition occurred later that day. Once the recordings were judged, the third viewing session (the remote audience-centered performance) occurred. Participants in the performance production condition viewed the performance production in the same room that the live participants viewed the performance. The performance production viewers were seated in a similar fashion and a similar number of audience members as the live participant category. The participants viewing the performance production viewed the performance via an overhead screen projector (8’ x 10’) situated in the front of the room. After viewing the performance production, the participants filled out the same survey as the live audience, accessing their perceptions of enjoyment, engagement and entrainment of the performance.

In the third condition, the same procedures were followed as in the other two conditions. These participants viewed the remote audience-centered performance in the same room that the

live participants viewed the performance. The remote audience-centered performance viewers were seated in a similar fashion and a similar amount of audience members as the live participant category. The participants viewed the remote audience-centered performance from the same room the original performance occurred via an overhead screen projector in the room. After viewing the performance production, the participants filled out the same survey as the live audience, accessing their perceptions of enjoyment, engagement and entrainment of the performance.

Barbershop quartet rating system. The categories in which BHS participants are judged upon are music, performance, and singing. To ensure that the performance was comparable between the live/performance production and the solely remote performance in this study, two judges from the performance category and two from the singing category judged the performances. The quartets were judged on performance and singing as the music category was more specific to the barbershop style. As the study is not focused on the barbershop harmony style, this category is not necessary, and should score similarly due to the performers singing the same song as before. Vocal quality and engagement; however, can change drastically from one performance to the next. For instance, if a performer sing wrong notes, the would likely score lower in the singing category and could lower their points in performance if they fall out of character or the note was distracting. BHS's Performance Category states that "the performance of a song is the artist's gift to the audience, whose experiences, memories, and imagination transform that gift into an emotional experience" (Society contest and judging committee, 2018, p. 1). Expressivity aids in the audience's ability to be engaged with the performance. The singing category was judged to ensure that the vocal quality of the performance was similar. By having

performances that are similar in vocal quality and performance quality, variability of audience ratings should be due to mediation.

Survey Components

Engagement scale. Participants were asked on a Likert scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) to rate their beliefs of the following five statements developed for the present study: "I felt connected to the performers," "The performers made it easy for me to remain attentive," "There were several moments I felt like the performer was singing to me," "I felt as though the performers were singing for me personally," "The performers really knew how to work the audience," "While listening to the music, I could easily picture the musical story," and "While listening to the song I was psychologically and emotionally involved with the music" (see Appendix D). The engagement scale was developed for the purpose of the study at hand. A Cronbach's alpha reliability test was conducted to assess the scale's reliability in assessing engagement, resulting in $\alpha = .89$.

Entrainment scale. This scale was taken and slightly modified from Senn, Kilchenmann, Georgi, and Bullerjahn (2016). Participants were asked on a Likert scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) to rate their beliefs of the following three statements: "I had the impression that my head moved with the rhythm," "I felt like tapping my foot with the music," and "The music stimulated me to move with the music" (see Appendix E). A Cronbach's reliability test was conducted to assess the scale's reliability in assessing entrainment, resulting in $\alpha = .83$.

Enjoyment scale. Participants weree asked on a Likert scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) to rate their beliefs of the following five statements developed for the present study: "I enjoyed this performance," "I found this performance entertaining," "I thought this performance was stimulating," "I was not into the performance," and "I would love to see more

of these performers in a longer show" (see Appendix F). The enjoyment scale was developed for the purpose of the study at hand. A Cronbach's alpha reliability test was conducted to assess the scale's reliability in assessing enjoyment, resulting in $\alpha = .95$.

Eye-contact assessment. As it was argued above that eye-contact between performers and audiences could increase engagement and enjoyment of the performance, the assessment included the following gaze scale for this study. Participants were asked on a Likert scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) to rate their beliefs of the following five statements developed for the present study: "I felt like the performers were making a lot of eye-contact with the audience," "Performers used eye-contact to make the audience feel like part of the performance," "I believe the performers connected with the audience by their use of eye-contact," "The performers' eye-contact with the audience was appropriate," and "The audience was receiving eye-contact from the performers" (see Appendix G). The eye-contact assessment was developed for the purpose of the study at hand. A Cronbach's alpha reliability test was conducted to assess the scale's reliability in assessing eye-contact, producing $\alpha = .94$.

Demographic questionnaire. Participants were asked to indicate their age, their sex, and their ethnicity (see Appendix H).

Musical background. Participants were asked a few questions in regards to their musical experience and background (particularly in regards to barbershop quartets) (see Appendix I).

CHAPTER 3

RESULTS

Manipulation Check

To test whether audience members noticed different levels of eye-contact across the three conditions a manipulation test was conducted. A one-way analysis of variance of the variable eye-contact was conducted. An a priori polynomial contrast test was used to examine perceptions of eye-contact across the three different levels of mediation (live performance, remote audience centered performance and performance production). The one-way analysis of variance was not significant for eye-contact (Live Performance $M = 6.14$, $SD = 1.11$, Remote Audience Centered Performance $M = 5.70$, $SD = 1.22$, Performance Production $M = 5.51$, $SD = 1.38$), $F(2,57) = 1.13$, $p = .33$, $\eta^2 = .038$. Though a significant linear effect was not found, the mean scores followed the hypothesized direction. However, the measure of perceived eye-contact was significantly correlated with the three variables being tested in the study: engagement ($r = .45$, $p < .01$), enjoyment ($r = .31$, $p = .04$), and entrainment ($r = .27$, $p = .04$).

Hypotheses Tests

The present study was designed to test the differences of engagement and enjoyment of, and entrainment with musical performance across three levels of mediation. The data were analyzed using a one-way analysis of variance of the three levels, testing for differences in the dependent variables of engagement, enjoyment, and entrainment. Hypothesis 1 stated that "audience members present for a live performance will report more engagement with and experience more enjoyment of the performance than will remote audience members viewing a remote audience-centered performance, who will in turn feel more engaged and experience more enjoyment than remote audience members viewing a performance production." Hypothesis 2

stated that "audience members present for a live performance will report higher levels of entrainment than remote audience members viewing the remote audience-centered performance, who will in turn, report higher levels of entrainment than remote audience members that are viewing the production performance." In order to test the hypotheses, an a priori contrast test examining the linear function of the means was employed.

To test Hypothesis 1 a one-way analysis of variance of the variables engagement and enjoyment was conducted. An a priori polynomial contrast test was used to examine reports of engagement and enjoyment across levels of mediation (live performance, remote audience centered performance, and performance production). The one-way analysis of variance was significant for engagement (Live Performance $M = 5.79$, $SD = .55$, Remote Audience Centered Performance $M = 4.42$, $SD = 1.28$, Performance Production $M = 4.55$, $SD = 1.16$), $F(2, 57) = 8.57$, $p < .01$, $\eta^2 = .23$, and enjoyment (Live Performance $M = 6.58$, $SD = .47$, Remote Audience Centered Performance $M = 5.30$, $SD = 1.62$, Performance Production $M = 5.6$, $SD = 1.33$), $F(2, 57) = 4.81$, $p = .01$, $\eta^2 = .14$. Consistent with the hypothesis, the polynomial contrast test for engagement produced a significant linear effect, $F(1, 57) = 10.63$, $p < .01$, $\eta^2 = .14$. In addition, the quadratic effect was also significant, $F(1, 57) = 6.84$, $p = .01$ $\eta^2 = .09$, indicating the means followed a slightly curvilinear pattern. Also consistent with the hypothesis, the polynomial contrast test for enjoyment produced a significant linear effect $F(1, 57) = 4.81$, $p = .04$, $\eta^2 = .07$; the quadratic effect was also significant, $F(1, 57) = 5.32$, $p = .03$, $\eta^2 = .08$, indicating the means followed a slightly curvilinear pattern.

Post hoc Scheffes show the live performance was rated significantly higher in engagement than the remote audience centered performance ($p < .01$). The live performance was also rated significantly higher in engagement than the performance production ($p = .01$). There

was no significant difference between the remote audience centered performance and the performance production. Post hoc Scheffes also show that live performance was rated significantly higher in enjoyment than the remote audience centered performance ($p = .01$). The live performance was not significantly different from the performance production ($p = .76$). The remote audience centered performance and the performance production showed no significant difference as well.

To test Hypothesis 2 a one-way analysis of variance of perceived entrainment across the three levels of mediation (live performance, remote audience centered performance, and performance production) was conducted. An a priori polynomial contrast tested the linear effect of of perceived entrainment across the three levels of mediation. Although the means were generally consistent with the hypothesis (Live Performance $M = 3.83$, $SD = 1.90$), Remote Audience Centered Performance $M = 3.22$, $SD = 1.67$, Performance Production $M = 3.24$, $SD = 1.07$), the results of the hypothesis did not show significance, $F(2, 57) = 1.13$, $p = .43$, $\eta^2 = .03$. Additionally, the linear polynomial contrast test did not show significance. In short, the test of the hypotheses provided a partial support for hypothesis 1 and no support for hypothesis 2.

CHAPTER 4

DISCUSSION

The purpose of this study was to examine mediation's impact on the performer-audience relationship. The motivation for the study was the expectation that performers and audiences have developed more sophisticated ways to deal with digitally-mediated productions than the simpler FtF audience-performer interactions that historically dominated such entertainment events. For instance, some digitally-mediated productions allow remote audiences to feel occasionally like an observer while at other times feeling like a participant. In addition, increased virtual eye-contact between performers and their audience members in different forms of digitally-mediated performance should have contributed to significant differences in the audience experience across the three levels of mediation (live performance, remote audience centered performance, and performance production).

Specifically, the study tested hypotheses related to the impact of audience members' perceived engagement and entrainment with, and enjoyment of musical performance. The hypotheses were partially supported. As predicted, a linear effect across the three levels of mediation was found for perceived engagement and enjoyment, but this effect was not found for entrainment. In addition to the expected linear effect, a quadratic effect also emerged, suggesting a curvilinear relationship across the means. Further, post hoc tests showed that the live performance condition was consistently different from the remote audience centered performance; however, the remote audience centered performance and the performance production generally did not differ from each other. The results of the study suggest that there is a significant difference between audiences' experiences of live performances and more extensively mediated performances in their perception of engagement and enjoyment.

The implications of this study are that mediation can impact an individual's perception of engagement and enjoyment of a musical performance. The results of this study reinforce that live performances are reported to be significantly more engaging and enjoyable than digitally-mediated performance. However, the results also suggest that different forms of digitally-mediated performances may be experienced differently by audience members. The obtained linear and quadratic effects suggest but do not definitively demonstrate that audiences experience performances differently when they are provided with perceptions of virtual interaction with the performer versus being cast in the role of observer.

On the other hand, the study may imply that people have become inured to experiencing a performance as a remote audience member viewing a digitally-mediated performance. Audiences may be more used to viewing digitally mediated performances due to their ubiquity and accessibility relatively to live performances. Consequently, because audiences may be more use to viewing digitally mediated performances, the differences between performance productions and remote audience productions may not be as stark or perhaps as relevant as the differences between live performances and digitally-mediated performances. It was reasoned above that experiencing a performance characterized by significant virtual interaction between the performer and the audience would be a more enjoyable experience than a performance in which the audience members relegated to the role of observers. In the present study, the extent to which performers virtually engage with audience apparently had less of an effect than was theorized. This raises the possibility that this distinction may not be as relevant as theorized above. However, before that can be addressed, there are a few limitations that need to be addressed for a more effective test of the hypotheses.

Limitations and Future Directions

There are limitations to the study that probably limited the effectiveness of the hypotheses' tests. One limitation in this study is that the nature of the video production depicting the remote audience performance and the performance production may not have been an effective manipulation of the intended difference of video production. The remote audience centered production was designed to make audience members feel like they are participating in the performance, that is, that the audience member was the sole focus of the performers. The performance production, on the other hand, was designed to make the audience member to feel like an observer of the performance, that is, that the audience member was not the focus of the performers.

The videos shared similarities in that both videos included the performers' full bodies, from the same distance, with just a different angle and the presence or absence of audience members. Consequently, the remote audience centered performance probably received less perceived eye-contact than the manipulation required. The remote audience centered performance probably needed more of a facial view of the performers in order for the audience members to experience more perceived eye-contact than was evident in the performance production. Potentially due to these reasons, participants may not have perceived sufficient difference in eye-contact across conditions limiting the effectiveness of the tests. Additionally, the performance production may have needed to be further away from the performers allowing the remote audience-participants to be aware of the studio audience. If the differences in the digitally-mediated performances were more pronounced, the results of the study may have produced the hypothesized differences between the two digitally-mediated conditions. Further, the videos were produced largely by the researcher, which may reduce the effects that were

required for the study. Using professional videographers may produce the desired differences between the remote audience conditions.

An additional issue that could arise in a study such as this is in relation to the quality of the performers. In order to not but undue demands on the performers and to assure comparability of the performance across videos, the present study had limited number of meeting times for participants. This relegated the study to a smaller sample size, therefore underpowering the study. More meeting times for live performances across multiple audience-participants could cause a disparity between the quality of performance viewed by the audience members. To account for the potential disparity between the live performance and performance production with the remote audience centered performance, judges were used to assure comparability in the quality of the performance. Though these judges could view more performances, more resources would be necessary to present judges with more videos.

Further, to avoid the confound of group influence or audience affect, the remote performances were viewed with other audience members. This could have caused an ecological validity issue due to the unnatural nature of watching a digitally-mediated performance with an audience. That is, by having the digitally-mediated performances, the performance production and the remote audience centered performances, the ecological validity of the study is challenged. Therefore, the test of the hypothesis may not have been a more effective as the remote audiences were not watching the performance in the way they normally would. Future researcher should account for these differences, and also, account for watching the performances alone. A researcher could attempt to have multiple individual live-viewing sessions; however, it will be taxing on their performers. If a researcher kept the live viewing session in person, had group remote sessions, and individual “at-home” remote sessions, the next study could access the

research in a more ecologically valid way. The individual "at-home" remote sessions, in this case, would mimic what most remote-audiences truly experience.

Lastly, another possible limitation in this study is the song choice which could have impacted entrainment. The means for entertainment followed the same pattern as the means for engagement, as expected; however, the results did not produce a linear effect. The performers sang the song *Lullaby* by Billy Joel which is not an upbeat song. As this song is not upbeat in tempo, the measurement of entrainment could have been negatively impacted. The items assessing entrainment in the questionnaire, "I had the impression that my head moved with the rhythm," "I felt like tapping my foot with the music," and "The music stimulated me to move with the music," may have worked better with an upbeat song rather than an emotional song. People can become entrained by slower, more emotional songs; however, the entrainment might come about differently. Entrainment, utilizing this song may have taken a form of emotional entrainment rather than physical entrainment. Future research could use this scale, as it is reliable; however, the researcher would likely need to use an upbeat song for the study. This can still be conducted with barbershop quartets by using almost any barbershop uptune such as *I Can't Give You Anything But Love.*

Suggestions for Future Research

The bandwidth of the study only encompasses barbershop quartet performances. Though barbershop quartets are well suited for this study, other musical performance types have different sets of standards. Different sets of musical performances have different audience and performer standards. With barbershop quartets, quartets are essentially expected to make eye-contact with their audience members; unlike choruses who are suppose to make eye-contact with their director. It would be interesting to see the difference between having a director and not having a

director musical performances as audiences have different expectations for the performance. In traditional choral performances, performers are expected to make eye-contact with the director, audience members still enjoy the performance but may not feel as engaged with the performance.

Minimal interactions with audience in choral performances still produce high levels of enjoyment in audiences. On the other hand, other performance types have more interaction with the audience, and audiences may also experience high levels of enjoyment. Though the primary focus of this study is the role meditation plays in the performer audience relationship, different musical performances may elicit different responses per the audience members musical preference. As barbershop quartets interact with the audience and one another, their performance is different than solo performances where an individual is alone and therefore, the sole focus, or with an accompanist who is often not supposed to be quite as visible.

Conclusion

In sum, this study demonstrated that mediation does matter when it comes to musical performance. Differences across digital mediation methods await better testing to address the limitations in the present study. As technology changes, expectations of musical performances may be changing along with it. With further research and more changes in technology, we may find differences between live and digitally-mediated settings. Now, we have more access to performances than ever before, but most of the experiences are significantly more mediated than FtF. Understanding how different mediation affects audience experience is crucial to understanding how we will respond to these performances. As more technological advancements arise, this study should be conducted again to further test the differences between performances. Virtual reality, as it attempts to eliminate the sense that the experiences is mediated, may change the way in which we start to view performances, perhaps drastically increasing engagement,

enjoyment, and entrainment of performances from a remote location. Overall, this study aided in furthering research in live and remote audience perceptions of musical performance.

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Footnotes

1. To hear an example of what the barbershop style sounds like, see After Hours' (Barbershop Harmony Society's International Quartet Champions of 2018) performance of *The Next Ten Minutes* (https://www.youtube.com/watch?v=WgwuDAvLxNE) obtaining the highest score in the Barbershop Harmony Society's (BHS) International quartet contest in 2018.

APPENDIX A

Aloha! My name is Brittany Bergeman and you are invited to take part in a research study. I am a graduate student at the University of Hawai'i at Mānoa in the Department of Communicology. As part of the requirements for earning my graduate degree, I am doing a research project for my thesis.

What am I being asked to do?

If you participate in this project, you will view a musical performance and you will be asked to fill out a survey.

Taking part in this study is your choice.

Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

Why is this study being done?

The purpose of my project is to study performers and their audiences.

What will happen if I decide to take part in this study?

If you decide to take part in this study, you will view a musical performance. After viewing the performance, you will fill out a brief survey. The survey consists of twenty statements to be ranked on a seven point Likert scale and a few questions in regards to your demographics and musical backgrounds.

With your permission, I will audio-video record the performance so that I can show the live performance to an audience at a later date. Your frontal face will not be recorded; however, the back of your heads and potentially a side profile will be recorded during the performance.

What are the risks and benefits of taking part in this study?

I believe there is little to no risk to you for participating in this research project. If you do not feel in groups, you may become stressed or uncomfortable participating in this project as you will be in an audience. If you do become stressed or uncomfortable, you withdraw from the study at any point. There will be no direct benefit to you for participating in this survey.

Confidentiality and Privacy:

I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses. I will keep all study data secure in a locked filing cabinet in a locked office/encrypted on a password protected computer. Only my University of Hawai'i course instructor and I will have access to the information. Other agencies that have legal permission have the right to review research records. The University of Hawai'i Human Studies Program has the right to review research records for this study.

Although we ask everyone in the focus group to respect everyone's privacy and confidentiality, and not to identify anyone in the group or repeat what is said during the group discussion, please remember that other participants in the group may accidentally disclose what was said. Avoid sharing personal information that you may not wish to be known.

Compensation:

You will receive 0.5 SONA credit to assign to one of your Communicology courses.

Future Research Studies:

Even after removing identifiers, the data from this study will not be used or distributed for future research studies.

Questions: If you have any questions about this study, email me at bkb3@hawaii.edu. You may also contact my professor, Dr. Robert Kelly Aune at kanue@hawaii. You may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu to discuss problems, concerns and questions, obtain information, or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit http://go.hawaii.edu/jRd for more information on your rights as a research participant.

Keep a copy of the informed consent for your records and reference.

Signature for Consent:

I give permission to join the research project entitled, "*The Performer-Audience Relationship During Live and Remote Performance."* I understand that the performance recording will be viewed at a later time by a future audience.

Please initial next to either "Yes" or "No" to the following:

_____ Yes _____ No I consent to be audio-video recorded for the performance portion of this research and to participate in this study.

Name of Participant (Print): _____

Participant's Signature: _____

Signature of the Person Obtaining Consent: _____

Date: _____

Mahalo!

APPENDIX B

Aloha! My name is Brittany Bergeman and you are invited to take part in a research study. I am a graduate student at the University of Hawai'i at Mānoa in the Department of Communicology. As part of the requirements for earning my graduate degree, I am doing a research project for my thesis.

What am I being asked to do?

If you participate in this project, you will view a musical performance and you will be asked to fill out a survey.

Taking part in this study is your choice.

Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

Why is this study being done?

The purpose of my project is to study performers and their audiences.

What will happen if I decide to take part in this study?

If you decide to take part in this study, you will view a musical performance. After viewing the performance, you will fill out a brief survey. The survey consists of twenty statements to be ranked on a seven point Likert scale and a few questions in regards to your demographics and musical backgrounds.

What are the risks and benefits of taking part in this study?

I believe there is little to no risk to you for participating in this research project. If you do not feel in groups, you may become stressed or uncomfortable participating in this project as you will be in an audience. If you do become stressed or uncomfortable, you withdraw from the study at any point. There will be no direct benefit to you for participating in this survey.

Confidentiality and Privacy:

I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses. I will keep all study data secure in a locked filing cabinet in a locked office/encrypted on a password protected computer. Only my University of Hawai'i course instructor and I will have access to the information. Other agencies that have legal permission have the right to review research records. The University of Hawai'i Human Studies Program has the right to review research records for this study.

Future Research Studies:

Even after removing identifiers, the data from this study will not be used or distributed for future research studies.

Compensation:

You will receive 0.5 SONA credit to assign to one of your Communicology courses.

Questions: If you have any questions about this study, email me at bkb3@hawaii.edu. You may also contact my professor, Dr. Robert Kelly Aune at kanue@hawaii. You may contact the UH

Human Studies Program at 808.956.5007 or uhirb@hawaii.edu to discuss problems, concerns and questions, obtain information, or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit http://go.hawaii.edu/jRd for more information on your rights as a research participant.

Signature for Consent:

I give permission to join the research project entitled, "*The Performer-Audience Relationship During Live and Remote Performances.*"

Please initial next to either "Yes" or "No" to the following:

_____ Yes _____ No I consent to participate in the study.

Name of Participant (Print): _____

Participant's Signature: _____

Signature of the Person Obtaining Consent: _____

Date: _____

Please save a copy of this page for your reference.

Mahalo!

APPENDIX C

Aloha! My name is Brittany Bergeman and you are invited to take part in a research study. I am a graduate student at the University of Hawai'i at Mānoa in the Department of Communicology. As part of the requirements for earning my graduate degree, I am doing a research project for my thesis.

What am I being asked to do?

If you participate in this project, you will be singing as a quartet for a live audience and a remote audience. The live audience performance will be recorded as well as a separate remote-audience centered performance, to be seen by Barbershop Harmony Society Judges to score in order to find comparability between the live recorded and the remote-audience centered performance.

Taking part in this study is your choice.

Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

Why is this study being done?

The purpose of my project is to evaluate audience perspectives on performance via different mediation.

What will happen if I decide to take part in this study?

If you decide to take part in this study, your musical performance will be viewed by University of Hawaii at Manoa students participating in my research.

What are the risks and benefits of taking part in this study?

I believe there is little to no risk to you for participating in this research project. If you do not feel comfortable performing for an audience, you may become stressed or uncomfortable participating in this project. If you do become stressed or uncomfortable, you withdraw from the study at any point. There will be no direct benefit to you for participating in this study.

Confidentiality and Privacy:

I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses. I will keep all study data secure in a locked filing cabinet in a locked office/encrypted on a password protected computer. Only my University of Hawai'i course instructor and I will have access to the information. Other agencies that have legal permission have the right to review research records. The University of Hawai'i Human Studies Program has the right to review research records for this study.

Although we ask everyone in the focus group to respect everyone's privacy and confidentiality, and not to identify anyone in the group or repeat what is said during the group discussion, please remember that other participants in the group may accidentally disclose what was said. Avoid sharing personal information that you may not wish to be known.

Questions: If you have any questions about this study, email me at bkb3@hawaii.edu. You may also contact my professor, Dr. Robert Kelly Aune at kanue@hawaii. You may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu to discuss problems, concerns

and questions, obtain information, or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit http://go.hawaii.edu/jRd for more information on your rights as a research participant.

Keep a copy of the informed consent for your records and reference.

Signatures for Consent:

I give permission to join the research project entitled, "*Video-Mediated Performance."*

Please initial next to either "Yes" or "No" to the following:

_____ Yes _____ No I consent to be audio-video recorded for this research project.

Name of Participant (Print): _____

Participant's Signature: _____

_____ Yes _____ No I consent to be audio-video recorded for this research project.

Name of Participant (Print): _____

Participant's Signature: _____

_____ Yes _____ No I consent to be audio-video recorded for this research project.

Name of Participant (Print): _____

Participant's Signature: _____

_____ Yes _____ No I consent to be audio-video recorded for this research project.

Name of Participant (Print): _____

Participant's Signature: _____

Signature of the Person Obtaining Consent: _____

Date: _____

Mahalo!

APPENDIX D

Engagement Scale

The following questions are concerning the performance you just watched. Please rate the degree to which you agree with each of the following statements. (*1 - Strongly Disagree, 4 - Neither Agree or Disagree, 7 - Strongly Agree*)

1. I felt connected to the performers.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. The performers made it easy for me to remain attentive.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. There were several moments I felt like the performer was singing to me.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. I felt as though the performers were singing for me personally.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. The performers really knew how to work the audience.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6. While listening to the music, I could easily picture the musical story.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

7. While listening to the song I was psychologically and emotionally involved with the music.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

APPENDIX E

Entrainment Scale

(slightly modified from Senn, Kilchenmann, Georgi, & Bullerjahn, 2016)

The following questions are concerning the performance you just watched. Please rate the degree to which you agree with each of the following statements. (*1 - Strongly Disagree, 4 - Neither Agree or Disagree, 7 - Strongly Agree*)

1. I had the impression that my head moved with the rhythm.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. I felt like tapping my foot with the music.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. The music stimulated me to move with the music.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

APPENDIX F

Enjoyment Scale

The following questions are concerning the performance you just watched. Please rate the degree to which you agree with each of the following statements. (*1 - Strongly Disagree, 4 - Neither Agree or Disagree, 7 - Strongly Agree*)

1. I enjoyed this performance.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. I found this performance entertaining.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. I thought this performance was stimulating.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. I was not into the performance.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. I would love to see more of these performers in a longer show.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

APPENDIX G

Gaze Scale

The following questions are concerning the performance you just watched. Please rate the degree to which you agree with each of the following statements. (*1 - Strongly Disagree, 4 - Neither Agree or Disagree, 7 - Strongly Agree*)

1. I felt like the performers were making a lot of eye-contact with the audience.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. Performers used eye-contact to make the audience feel like part of the performance.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. I believe the performers connected with the audience by their use of eye-contact.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4. The performers' eye-contact with the audience was appropriate.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5. The audience was receiving eye-contact from the performers.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

APPENDIX H

Demographic Information

1. Using the drop-down menu, please indicate your age (in years).
2. What is your sex?
    a. Male
    b. Female
    c. I prefer not to say
3. Ethnicity origin (or Race): Please specify your ethnicity.
    a. African American
    b. American Indian
    c. Caucasian
    d. Chinese
    e. Hawaiian
    f. Hispanic
    g. Japanese
    h. Korean
    i. Pacific Islander
    j. Mixed
    k. Other

APPENDIX I

Musical Background

The following questions are concerning with your musical background. For the first two questions, please rate the degree to which you agree with each of the following statements. For the later questions, please indicate yes/no and indicate the amount in numbers.

1. I have attended many live musical performances

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2. To what extent are you experienced with barbershop quartets.

   Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3. Do you play any musical instruments (including voice)? Yes or no
   a. If yes, how many instruments (including voice) do you play? _____
   b. How many years have you played your instrument (if more than one, your longest played instrument)? _____
4. Have you performed publicly? Yes or no
   a. If yes how many times have you performed publicly?