Towards a Psychology of Coordination:
Exploring Feeling and Focus in the Individual and Group in Music-making

by

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For those whose voices no longer join with ours,
Robert Strozier, Charlie Lovelace, & John Kusmiss.

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ABSTRACT

Organizing involves unifying the work of many into the work of a whole group or organization. This occurs through the continuously adaptive performance of coordination by individuals within a group. Although how individuals act on behalf of the group is shaped by what is perceived by their minds and senses, we know little about what group members focus on and feel while coordinating. Two studies examined individual attention and feeling in groups coordinating their efforts to make music. I chose group music-making as a setting to explore these issues because it exhibits attention and feeling in uniquely observable ways. In Study 1, I used a four-group experimental design to study how a focus on attention to self, to other and to the self-in-relation-to-other affected the quality of coordination for individuals performing a group song-composition task. In Study 2, I used the ethnographic methods of participant-observation and qualitative interviewing to examine the primacy of feelings or aesthetics in how individuals coordinate sounds as they sing as a choir.

Both studies revealed that individuals coordinate with others based on their perceptions of either "parts" or "wholes" through attention and feeling. Experimental groups in which members displayed more attention to others in relation to attention to the self were more responsive than groups in which members displayed more attention to the self. Groups with more responsive members were judged to have higher coordination quality, and reported more feelings of the group working as a substantive whole. The

experiences of singing as a choir revealed that performers use the aesthetic or feeling of beauty, as well as attention, to coordinate. Performers know whether to maintain or adjust their efforts based on experiencing the desirable, beautiful cohesive whole of a fine performance (high quality coordination), or the discomforting, poor-quality fragmentation of a poor performance (low quality coordination). The choir's conductor also shaped both performers' attentional focus and use of beauty as a standard for coordination. Together, the studies reveal how the work of individuals is at once the work of the group, and how both cognitive and aesthetic knowledge shape coordination.

CHAPTER 1

INTRODUCTION

"First bits and crumbs of the piece come and gradually join together in my mind; then the soul getting warmed to the work, the thing grows more and more….so that I can see the whole of it at a single glance in my mind…I do not hear it in my imagination at all as a succession….but all at once as it were. It is a rare feast…"
— Mozart (as cited in James, 1950, p. 255)

This is a story (or a set of two main stories) about performance. It is about the performance of coordination and the myriad elements involved when individuals work together as a group. People are at the core of this performance and so the mental and behavioral experiences of people coordinating with others – the psychology of coordination – form the subject of this dissertation. The fundamental elements of this psychology are fleshed out in Mozart's account of how he envisions the creation of a symphony, a performative, coordinated work. At first experienced as "bits and crumbs," the "thing" or the "piece" is eventually experienced "all at once" as a "whole." The performance of the group or organization is the "whole" that is not only the subject of this dissertation, but the ultimate concern of organizational scholars and practitioners. The coordination that is part and parcel of this performance, this organizational "doing," also involves the "bits and crumbs" of individuals in a variety of roles, teams, groups, departments and divisions. These bit parts in organizations are defined by their involvement in the greater whole, which, in turn, is made evident as these parts perform coordination, interrelating their actions and efforts. These parts, their interrelation, and

the whole they comprise form the basic elements of this rudimentary psychology of coordination.

Coordination is at the heart of every organizational endeavor, and has been recognized as such in the fields of organizational behavior and management studies (e.g. Barnard, 1968; Faraj & Sproull, 2000; March & Simon, 1958; Thompson, 1967). In general, most accounts of coordination define it in terms of the interrelation of actions to achieve some goal (Weick, 1979), and examine either how actions are arranged or managed (e.g. Lawrence & Lorsch, 1967; Malone & Crowston, 1994; Thompson, 1967) or how the arrangement of actions is enacted (e.g. Hoffer Gittell, 2002; Orlikowski, 2002; Quinn & Dutton, 2005).

Woven through all these accounts is the common theme of the relationship between parts and whole. For example, Thompson (1967) describes how manufacturing units (parts) share their inputs amongst each other and thus to the organizational whole depending on the type of interdependence they face. Quinn and Dutton (2005) describe how individuals (parts) are made to feel part of the organization (whole) through the energy they feel in the conversations they have with other individuals. Faraj and Sproull (2000) describe how individual team members (parts) coordinate their knowledge and skills in order to act as "a complete system" (whole). The common presence of the elements of parts and whole across these various examples suggests that these are fundamental elements of coordination.

In describing coordination research in terms of parts and wholes, I do not focus on the question of "How are parts interrelated in order to create meaningful wholes through organizing?" (Weick, 1979). We already know a lot about how to structure and reward

the work of many so that together they can create something over and above what any one individual could have done. What I think remains to be examined is the actual doing or performance of coordination, and its attendant psychological experience. By examining its performance we can better understand the quality of coordination, or the degree to which coordinative behaviors facilitate the efforts of individuals to behave as an ensemble. As several scholars point out, it is essential that we understand the actual enactment of organizational work, since the manner in which people work with others can not only differ substantially from the prescribed task structure, but is also shaped by the immediate, available structures (e.g. Heath & Staudenmayer, 2000; Hutchins, 1995; Orlikowski, 2002). This dissertation thus takes a performative lens to the experience of coordination.

While the present work remains firmly grounded in the worlds of psychology and organizational studies, it draws parallels with other fields concerned with examining how lived experience is performed. Performance studies, for example, considers how actions, utterances, and texts both shape and are shaped by the people that perform them, the context in which they are created and enacted or encountered, and influence this has on meaning and culture (e.g. Butler, 1997; Conquergood, 2004; Schechner, 1985; 2004; 2006). Similarly, the field of pragmatics is concerned with how the communication of meaning through talk is dependent not only on the commonly understood rules of grammar, but also on the immediate concerns of those involved in the exchange, and the social (and even physical) context in which information is exchanged (e.g. Goodwin, 2000). The performative turn is summed up by Denzin (2003) when he describes how "…words…do not change or carry the meaning. Action carries the meaning; words are

set and unchanging" (p. 40). Applying this quote to the present subject suggests that the concrete structures, grammar and conditions under which coordination occurs are constantly enacted and re-enacted through the actions of the people performing coordination.

By considering how coordination is performed or "done," this dissertation is concerned with the quality of coordination as it occurs in the performance of a task by a group. In "high-quality" coordination, the efforts of all group members effectively contribute to the ability to work as a unit or ensemble, while in "low-quality" coordination the interrelation of individuals' contributions hinder or limit the work of the group (Steiner, 1972). This dissertation looks at coordination in performative groups, or groups that embody the concern of continuous performance, an important issue for many organizations (Weick & Roberts, 1993; Weick, Sutcliffe & Obstfeld, 1999). Coordination in performative groups such as musical ensembles can thus be understood in terms of how individuals structure actions moment by moment, in the course of performing work with others based on the directive that "the show must go on!"

Thinking about coordination in this way meets an important challenge set forth to organizational scholars by Heath and Sitkin (2001). Their survey of organizational scholars revealed that many thought that what was being currently disseminated in the field was not necessarily what they considered to be most important for better understanding organizing. The authors explain this by classifying what the field focuses on into two categories: "big B," or interesting behavior that may be relevant for organizations and "contextualized B," or behavior that happens to occur in an organizational context. Since these kinds of behavior, e.g. the escalation of commitment

to a decision (Whyte, 1986), may be relevant to how organizations work, yet might occur in a number of other contexts and situations (e.g. in maintaining close interpersonal relationships), it is not clear if studying these brings us closer to understanding organizations. What *is* unique to organizing – or "big O" research – is the interdependence amongst elements assembled to achieve an overarching goal, and the coordination that this begets. Indeed, Heath and Sitkin (2000) go on to describe the importance of "developing theories that address how people solve the dynamic problems of aligning goals and coordinating actions." (p. 54). This dissertation takes this mandate seriously, by focusing on the experience of both parts and whole, the essential elements of the uniquely organizational issue of coordination.

The studies in this dissertation are designed to garner some of the benefits of focusing on something as uniquely organizational as coordination. Heath and Sitkin (2000) suggest that focusing on "big O" research will demand more cross-level research, and thus more complex studies that help us understand what occurs across individuals, groups, and the organization on the whole. Ultimately, such cross-level research reveals the linkages between individual cognition and actions and group- or organizational-level phenomena (such as coordination). Uncovering these linkages and processes, or mechanisms, makes our theories more accurate and flexible, and thus better equipped to explain a wider range of phenomena (Davis & Marquis, 2005; Elster, 1998; Hedstrom & Swedberg, 1998; Stinchcombe, 1991). To this end, my central question is "*What are the organizational (concerning individuals and groups doing work) psychological (concerning the mental processes of these individuals and groups) processes involved in the coordination of a group?*" In order to answer this complex question, crossing the

levels of the individuals (or parts) and the group (or the whole) I turn to the world of

music-making, a phenomenon that is both uniquely organizational and psychological, and

thus one in which coordination is especially critical and visible.

Music-making: A fundamental form of coordination

The two studies that comprise this dissertation both use music-making in order to

better understand the performance of coordination. Music is both intrinsically unique to

human beings (and thus unique to our psychology, or what we think, feel, and do), and

inherently organizational (involving the interrelation between elements of sound to

produce phrases, whole songs, and symphonic works). The interrelation of elements to

produce a meaningful whole is thus key to music-making, and this taken-for-granted

aspect of our daily lives therefore exposes us to coordination in ways that are

fundamental to the human experience. In this section, I briefly describe the essentiality of

music to how we think and feel, the organizational nature of music-making and

processing, and how this benefits our understanding of coordination.

Music is a form of communication that uses acoustic patterns (sound waves) and

their cognitive representations (what we "hear") to elicit a variety of cognitive

experiences (Bharucha, Curtis, & Paroo, 2006). Several scholars in the fields of

neuroscience and psychomusicology agree that the capacity for understanding and

making music is an essential aspect of human evolution (e.g. Anderson, 2005; Fitch,

2006; Johansson, 2002). Apart from evidence such as the comprehension of music in

early child development (Anderson, 2005), the essentiality of music is linked to the

phenomenon's employment of our brains and bodies in ways that no other process seems

to match. For example, the link between music and the pleasure and emotion centers of

the brain makes it potentially consequential for our mental and physical health (Johansson, 2002). However, it is the simultaneous involvement of areas of the brain responsible for understanding the relationships between sounds, temporal processing, motor skills, emotional processing, and memory, that makes musical performance one of (if not <u>the</u>) most cognitively complex activities humans can undertake (Hodges, 1996; Janata et al., 2002; Peretz & Coltheart, 2003).

The complex cognitive involvement of music-making makes it consequential for a variety of social, and ultimately, organizational processes. For instance, the involvement of brain systems for attention and memory in even passive music-listening may have been essential for cultural (and thus biological) development by allowing the communication of knowledge from one generation to the next (Bharucha, Curtis, & Paroo, 2006). The development and sharing of meaning through music has been linked to the mother-infant bonding, language acquisition and social organization that all define the human experience (Hodges, 1996). Not only is communicating and sharing meaning important for organizing, but interrelating actions in complex ways also defines both organizing and music-making. Music performance has been characterized as an exemplar of complex human motor skill, involving variations in rhythm and timing that ultimately allow for the expression of personally-meaningful interpretations (Palmer, 1997). When individuals attempt to do all of this as part of a musical ensemble, then coordination becomes further complicated, involving both individual level cognitive and behavioral processes and the actions of other group members as they all try to make music together.

Both studies in this dissertation look at individuals coordinating their efforts in order to create music as an ensemble. Such a task is complex and involves both the parts

and whole that I suggest are fundamentals of coordination. On the one hand, individuals themselves are capable of discerning the inherent relational properties between individual pitches and sounds that comprise music, and ultimately the coherence or togetherness of sounds (Koelsch, 2006; LaBerge, 1995; Palmer, 1997; Shepard, 1982). Making music with others further complicates what must be processed and performed as the physical formation of the group influences what can be heard (Aspaas et al., 2004), individuals have to hear both themselves and others (Ternstrom, 1999), and individuals must formulate their own sounds in the context of the sound of the whole group in order to achieve a suitable blend (Tocheff, 1990). Although lending their own distinct flavor to the sound, individual singers in a choir, for example, aim to all be of one accord, sounding like one voice (McGann, 2004; Willingham, 2001). The studies in this dissertation leverage this rich experience of performing coordination as a music-making group in order to develop and elaborate on the theoretical perspectives and empirical considerations outlined below.

Understanding and explaining coordination

The following descriptions of the dissertation's theoretical and empirical bases are brief since they are explicated in two self-contained, yet related chapters. Brief descriptions of the main concepts uniting these chapters, as well as methods presented in each chapter are presented here. In short, two different empirical methods are used to investigate two different ways of knowing and experiencing coordination.

The present literature on coordination suggests that individuals engage the "parts" of coordination by being mindful of the interdependence between their actions, acting critically, purposefully and carefully in terms of how their actions interrelate with others'

actions, rather than out of habit or mindlessly (Dougherty, 1992; Heath & Staudenmayer, 2000; Weick & Roberts, 1993). The care required for successfully coordinated interactions implies attention on the part of individuals to the relationships between actions. What, however, is this mode of attention, and what is it focused on? How exactly does it influence behavior? This aspect concerns individuals, the interactions between them and the mode of attention experienced by the individuals in these interactions. This characteristic of coordination begs the question of "*What is the content and role of individuals' attention in the continuously adaptive coordination of actions within a group?*"

How individuals engage the whole in coordination seems to be less well-specified in current organizational research. Some scholars have described the experience of a unique form in coordination, consisting of the whole or gestalt of all the efforts of individuals in the group or organization (e.g. Dougherty, 1992; Weick, 1993; Weick & Roberts, 1993). If coordination is the achievement of concerted action (Thompson, 1967), then it describes the unified action of a group, which is a phenomenon over and above a collection of individual efforts (Durkheim, 1893/1933; Sandelands, 1998; Toennies, 1879/1957). Individuals seem to know that their coordination is contributing to a whole through the aesthetic experience of a whole, or through sensing or "feeling" a group at work (Sandelands & St. Clair, 1993; Weick, 1993). Such a characteristic poses the question of "*How is coordination related to feelings of the life of the group?*"

Both focus or attention and feeling or aesthetic are important for individuals coordinating actions with others as a group. It is through these two perceptual mechanisms that individuals are aware of how their actions affect the quality of the

group's coordination, and through which individuals accordingly adjust their actions to afford this coordination. I take advantage of both experimental and ethnographic methods, and the context of music-making to explore these two facets of the psychology of coordination. I designed a lab experiment to test the role of attentional focus on coordination quality and feelings of the group. The collection of objective data in this way can corroborate whether what I have proposed is factual and generalizable. I also conducted an ethnographic study that was initially designed to also corroborate the role of focus in coordination. However, feeling or aesthetic knowledge seemed to have a primary role in how individuals shaped the coordination quality of the group. Developing understandings derived from direct experience exposes existing processes and behaviors involved in experiencing coordination (Sandelands, 1990). In both the experimental and ethnographic contexts, music-making was the primary activity. Making music as a group demanded that individuals focus on themselves and others, while the highly sensual activity also provided an opportunity to experience, discuss, and measure individuals' aesthetic or felt experience while coordinating with others.

Structure of the dissertation

Three additional chapters follow from the discussion of this first chapter, the introduction to this dissertation. Chapter 2 details the quantitative methodology used to test the theorized explanations of the reductive, objective and individual-based perspective on coordination. Chapter 3 describes the qualitative methodology that elaborates coordination theory through the subjective, contextualized account of music-making in the University Chorus. The fourth and final chapter will provide an integration

of the findings from both sets of studies and in it I will discuss whether and how they speak to each other.

CHAPTER 2

THE QUALITIES OF FOCUS, FEELING AND COORDINATION IN GROUP SONG-COMPOSITION

Introduction

Organizational scholars have long considered how to manage the differentiated elements of large organizational systems so that products and services can be produced. Whether it was known as integration (Lawrence & Lorsch, 1967) or coordination (Thompson, 1967), scholars have focused on the management of the interrelation of actions. Although Malone and Crowston (1994) continue to describe coordination in this way in a more recent discussion, other scholars have begun to consider what determines the quality of coordination, or *how* actions are interrelated, especially between individuals in work groups (e.g. Hoffer Gittell 2000; 2001; Quinn & Dutton, 2005; Weick & Roberts, 1993). To focus on coordination quality is to focus on how the performance of interactive and communicative behaviors affords the interrelation of actions as people try to work as a group.

The present study is based on the perspective that in order to understand what determines the quality of intragroup coordination, it is useful to consider how cognitive processes such as attention influence coordination (Bougon, Weick & Binkhorst, 1977; Weick, 1969). While organizational scholars have provided various theoretical accounts of how coordination is enacted (e.g. Heath & Staudenmayer, 2000; Quinn & Dutton, 2005; Rios et al. 2008; Thompson, 1967; Weick & Roberts, 1993), the role of

individuals' attention is often pointed at, but not made fully explicit in reports on the work of teams and groups, and the factors that limit and enable such work (e.g. Dougherty, 1992; Harrald, 2006; Hoegl & Gemeunden, 2001; Sinha & Van de Ven, 2005; Vera & Crossan, 2005). Rather than the individual's cognitive experience, the scholarly focus has tended to be on the management and structuring of coordination. For example, Malone and Crowston (1994) define coordination as "managing dependencies between activities" (p. 90). Additionally, where inter-group coordination has been examined (e.g. Adler, 1995; Majchrzak, Jarvenpaa, & Hollingshead, 2007), the focus has been on the practices and structures that "manage" interdependences. As will be described in the sections below, coordination may go awry even with well-intended structures, due to shifts in attention that impede the interrelation of action.

By looking at coordination, this study tests the role of attention in a number of areas where it has been ignored. Attention in organizational research has primarily been considered in terms of how it influences decision-making (e.g. Corner, Kinicki, & Keats, 1994; Ocasio, 1997). While decision-making is an important element of organizing, isolating the role of attention in the ensemble performance of work groups has received comparatively less scrutiny. This study further broadens the theoretical scope of the importance of attention by going past the simple behavioral synchrony or entrainment between interaction partners observed by psychologists, and examining the coordination of a group (e.g. Bernieri, Reznick & Rosenthal, 1988; Cappella, 1981; 1997; Richardson, Marsh &Schmidt, 2005). Additionally, this study uses attention to explore diverse aspects of the performance of coordination, including the concept of aesthetics in coordination, or a "feeling" of the group working together well or not (Weick, 1993). The resultant blend

of insights from across areas and disciplines is intended to create more general, and thus more applicable, understandings.

In the cases where attention has been implied in the work of coordination, it has been tested at the group, rather than at the individual level, leaving open the question of the influence of individual's attentional focus on how they coordinate with others. Weick and Roberts (1993) suggest that workers can cognitively represent their interdependence with other workers, and then act based on being mindful of this representation. These actions, in turn, formulate a "collective mindfulness." Empirical examinations of this collective mindfulness focus on how the group as a whole functions in careful and reliable ways, rather than how the individuals in the group enact their contributions to the group's performance (e.g. Vogus, 2004; Vogus & Sutcliffe, 2007). Not only would examining the role of individual-level attention better specify how attention influences coordination quality, but it would also enhance organizational considerations of attention and psychological considerations of coordination.

In this chapter, I open up the "black box" of coordination quality by considering the role of attention in the coordination of interdependent group work. I suggest that in order to act successfully as a group, individuals must act on behalf of both themselves and others, which demands that their attention must take into account the actions of both the self and of others. Attention is distributed across self-produced and other-produced actions in order to capture the information relevant to an interdependent context – the relationship between actions, rather than the discrete actions, or actors themselves. Since coordination is also an aesthetic experience, or something that is "felt," attention should also influence the feeling or aesthetic of coordination. In the section below, I discuss

attention and its relationship with coordination. This relationship is outlined in terms of how attention influences the behavior that defines coordination quality through the working self-concept, and responsive behavior. I also describe a potential relationship between attention, coordination quality and the aesthetic or feeling associated with coordination quality. I go on to describe the experimental examination of the hypotheses I develop, discuss the results, and consider the conclusions and future research directions they suggest.

ATTENTION IN INTRAGROUP COORDINATION

Every organization is by nature an entity comprised of interdependent parts, and we can observe the purposeful interactions between these parts in a variety of examples everyday, particularly in group work. Various definitions converge on describing groups as social entities comprised of members who interact in interdependent roles and acquire, develop and use resources to achieve some specific goal (Hare, Blumberg, Davies, & Kent, 1994). Coordination in groups and organizations is necessary when an individual's effective performance depends on the performance of other members of their group (Van der Vegt & Janssen, 2003). On the other hand, the attentional foci of individuals in groups are shaped by this interdependent context (Ocasio, 1997; Weick, 1979). We can begin to understand how attentional focus is associated with coordination quality when we consider how coordination is achieved through mindfully enacting relationships.

Various accounts of coordination are focused on the relationships between people at work, and how these relationships are enacted. While traditional perspectives of organizational-level coordination have considered the design of the flow of work inputs and outputs (e.g. Lawrence & Lorsch, 1967; Thompson, 1967; Van de Ven, Delbecq, &

Koenig, 1976), more recent perspectives on coordination have focused on how individuals and groups relate to each other. For example, "relational" coordination focuses on how a strong "web of relationships" enables cooperation, problem-solving, and helping amongst group members (Hoffer Gittell, 2002, p. 1410). Another perspective describes coordination in terms of "energy-in-conversation," and suggests that people are energized through the conversations they have with others (Quinn & Dutton, 2005). What people say to each other influences how agentic they feel, and whether they feel part of the organizational collective. Agency and belonging can energize them, influencing their motivation to act, and with whom they would prefer to act. Yet another perspective is provided by the example of the highly interdependent work of aircraft carrier flight deck crews described by Weick and Roberts (1993). On the deck, actions seemingly performed by a lone individual are in fact complex sets of interrelated activities. For example, a plane's landing is considered an act of "recovery" performed via the work of multiple individuals, rather than through the solitary actions of a pilot.

In order to successfully leverage relationships to perform interdependent work, individuals have to be aware of operating within these relationships, and formulate their actions in ways that allow for appropriate interrelation of these actions. Such awareness or mindfulness (Weick & Roberts, 1993) refers to a conscious sense of the nature of one's actions; mindful actions display care, concentration and purposefulness. Attention is implicated in such a description, as it underlies the properties of being careful about one's actions and concentrating on what one is doing. Attention can be defined as a cognitive capacity that involves a variety of stimuli-processing systems. These systems

modulate the competition between stimuli for capture, processing, and assimilation by the brain (Behrman & Haimson, 1999; Desimone & Duncan, 1995; Posner & Petersen, 1990). While conscious, effortful awareness occurs at the "higher" levels of cognitive processing, information from the environment can be noticed and computed by the (pre-conscious) "lower-level" sensory systems without being transferred into such awareness (Woodman & Luck, 2003). Habitual, routine actions can be rendered automatic after practice and rehearsal; while they may still involve some apprehension of relevant stimuli in the environment, they do not involve conscious guidance (Wegner & Bargh, 1998).

Because some element of lower-level, attentional processing is always in operation – whether or not the information it processes enters awareness or not – I focus on attention and how it works in the rest of my discussion. Attention involves some modulation of the salience of the stimuli being apprehended or noticed. This modulation is influenced either by the brain, or by the nature of the stimuli themselves. On the one hand, the brain may use an attentional template or schema to specify what would be the relevant properties that denote some stimuli as salient (Duncan & Humphries, 1989; Folk, Remington, & Johnson, 1992). On the other hand, attention can be involuntarily captured based on the uniqueness or sudden appearance of stimuli (Behrman & Haimson, 1999; Desimone & Duncan, 1995; Knudsen, 2007; Pashler, Johnston, & Ruthruff, 2001). In either case, our limited processing capabilities demand that certain stimuli are made more relevant than others to facilitate more efficient processing (March & Simon, 1958; Luck & Vecera, 2002; Simon, 1947).

What is relevant to our attentional system in interdependent group work is the degree to which our actions are related to others' actions. Various forms of interdependence,

such as task, reward, and goal interdependence converge to shape what focus of attention is appropriate for the task. Task interdependence refers to the ordering or flow of work, or how the work that one initiates directly affects the work of others (Kiggundu, 1981; Thompson, 1967; Van de Ven et al., 1976). Goal or outcome interdependence refers to the degree of shared group goals, and the provision of group feedback (Deutsch, 1973; Thomas, 1957; Wageman, 1995). Reward interdependence refers to the degree to which the reward a group member receives depends on the performance of other group members (Wageman & Baker, 1997).

Generally, less interdependent tasks and rewards for individuals seem to induce a focus on the self and on independent work (Bacharach et al., 2006; Manz & Angle, 1986), while more interdependent tasks and rewards for the group seem to encourage cooperation and a focus on working with others as part of a group (Saavedra, Earley, & Van Dyne, 1993). Additionally, mismatches between the various forms of interdependence disrupt attentional focus. For example, if goal interdependence is high, but task interdependence is low, attention is directed to cooperation when it is not required, reducing productivity and efficiency (Van der Vegt & Van de Vliert, 2002). Conversely, when both task and reward interdependencies are low, work is not only performed independently, but also independent, and not collaborative efforts are rewarded (Wageman, 1995). The interplay between attention and the nature of the context in the case of interdependent group work is manifested in the quality of coordination amongst group members, i.e. working well together or not, in order to perform as a group.

In cases of high task, reward, or goal interdependence, group members need and want to cooperate in order to perform as a group. Despite possessing the motivation and capability to coordinate and being aware of others' intentions, group work can fail due to inattention to the relationship between actions (e.g. Dougherty, 1992; Heath & Staudenmayer, 2000). From failed collaborations amongst departments who disregard the importance of their collective efforts, while focusing on their individual contributions (Dougherty, 1992); to wildfire fighting team members who survive a blaze because they keep in mind that they are part of a group (Weick, 1993); to aircraft carrier flight deck crew members who direct planes onto a flight deck while being mindful of the pilot's and guidance officer's situations (Weick & Roberts, 1993), if group members do not maintain a focus on how their actions interrelate with others' then coordination may be poor, or failure may result.

The examples described above suggest that well-coordinated group work requires that individual-level attention be distributed across the actions of the self and others. Cognitive representations of the group and the interrelation of efforts can differ from and be more consequential than the observed, actual reality of the level of interdependence in the context. By introducing the term "collective mind" to describe how a group operates reliably, Weick and Roberts (1993) simultaneously invoke notions of the self and others (in "collective" or individuals acting in mutually influential ways) as well as of attention (in "mind" or the heed, concern, and care with which behavioral responses are formulated). Following from the accounts of interdependence, coordination, and attention described above, I suggest that a fundamental element of coordination quality, or the facilitation of continual interrelation amongst actions, is attention that apprehends the

nature of both self-produced and other-produced actions. The distribution of attention in this manner is necessary to glean the relationship between self-produced and other-produced actions, and attention focused in this way can inform coordinative actions.

TESTING A PROCESS MODEL OF ATTENTION AND COORDINATION QUALITY

Through analysis of how group members enact coordination in a highly interdependent context, under various attentional focus conditions, we can understand the relationship between attention and coordination quality. The present study is designed to address the question of "How does attentional focus influence the quality of intragroup coordination?" While the examples of coordination in interdependent work described above imply either some influence of the context on attention, or some influence of attention on the context, the effect of attention on coordination quality has not been tested in a controlled, experimental design. In highly interdependent contexts, I not only assume that the context focuses attention across both self-produced and other-produced actions (as cooperation is encouraged, etc.), but I also assume that such attention is necessary to maintain successful coordination. While an interdependent context makes the relationships amongst actions salient, attention may be (inappropriately) focused towards the self or others, or (appropriately) towards self and other. In the following sections, I describe a model of how attention influences behavior and shapes coordination quality.

Attentional focus: Self vs. other or self-and-other?

The nature of attention, and how it influences behavior, shapes this study's hypotheses. The attentional system processes stimuli that are relevant to current behavior (Berhmann & Haimson, 1999; Desimone & Duncan, 1995). The capacity of the attentional system is also limited (Desimone & Duncan, 1995; Deutsch & Deutsch, 1963;

Kahneman, 1973), and thus attention to the self and attention to the external environment (including other people) have been assumed to mutually preclude each other (Duval & Wicklund, 1972; Mead, 1934).

Focusing on self. In control-theory or information-processing models of behavioral regulation, attention to the self generally involves comparison of the self's behavior to some internally-, or socially-determined standard (Carver & Scheier, 1981; Duval & Wicklund, 1972). Self-focused attention thus induces concern for whatever aspect of the self is salient in a particular context (Carver, 1979; Stephenson & Wicklund, 1983), and also elicits behavior that is in accordance with the norms and standards of a given context (Wegner, 1980). In an interdependent workgroup context, the norms and standards should induce a concern for how the self contributes to the work of the group. Self-focused individuals, however, should be more concerned with whether they are performing "their part" as they work with other group members. One lab study verifies such a perspective in its manipulation of self- vs. other-referencing (or focus) (Sandelands & Calder, 1984). Those researchers found that pairs of individuals made to focus on themselves produced less congruent word associations in their task compared to pairs of individuals made to focus on their partner. It would seem that a focus on the self not only detracts from attention to the other, but to the joint nature of an interdependent task.

Focusing on others. Maintaining a focus on others at the exclusion of a focus on the self is challenging. The presence of others can activate attention to the self as individuals consider that an audience expects adherence to some performance standard (Carver & Scheier, 1981; Duval & Wicklund, 1972). Individuals seem best able to

engage in perspective-taking (thus, to some extent, focusing on others) when they are expressly asked to do so and are not attending to some negative self-aspect (Stephenson & Wicklund, 1983; 1984). Self-focused individuals can engage in other-directed behaviors such as helping, but only when standards that make helping salient are present (Gibbons, 1978). Even without the inducement of self-focused attention, perspective-taking seems to involve attributing positive, self-possessed traits to the other (Davis, Conklin, Smith, & Luce, 1996), implying some focus on the self. Despite the mixed conclusions about a focus on the other as involving a focus on the self, the research discussed above first of all suggests that people *can* focus on the other when instructed to do so. Ultimately, considering the other should detract from a *complete* focus on the self, especially when there is no negative aspect of the self to focus on. In an interdependent workgroup context, attention to others should involve a focus on how others' contributions aid in shaping the self's contributions to meet some standard.

     Focusing on both self and others. The present theorizing suggests that attention to both the self's processing of the task, as well as to others' contributions, is necessary for the self to produce effective, useful contributions to a joint task. The somewhat inconclusive evidence for the clear dichotomy between attention to the self and attention to others suggests that it is possible for the individual to simultaneously attend to aspects of both the self and of others. Simultaneous attention to various stimuli is possible, despite the attentional system's limited capacity (Awh & Pashler, 2000). Contextual cues – even chronically accessible cues, such as cultural norms – can determine whether people simultaneously or selectively attend to various environmental elements (Chavajay & Rogoff, 1999; Kuhnen, Hannover, & Schubert, 2001; Kuhnen & Oyserman, 2002;

Schumacher et al., 2001). Because the relationships between actions are arguably contextually-salient in an interdependent work context, information about the qualities of a relationship arguably involves information about both elements in the relationship. Individuals coordinating actions seek to integrate or interrelate their efforts, and thus need to know the qualities of their own efforts as well as the qualities of the efforts of others.

> *Hypothesis 1: The quality of intragroup coordination will be highest when individual group members distribute their attention across their efforts and the efforts of others, in comparison to when group members focus on either themselves or on others.*

Attention and the working self-concept

Unpacking the process whereby attention influences behavior is necessary to consider given the complex process of coordination, involving actions performed by the self, and by others in order to produce a group outcome. Attention to the self or to the other may influence behavior in social interactions through schemas that shape whether the self or the other is considered to be more important (e.g. Sandelands & Calder, 1984). This simple dichotomy, however, does not consider how the self engages attention in an interdependent environment. Although attention in organizations may ultimately influence action through the interpretation of the relevance of environmental stimuli (Daft & Weick, 1984), organizational scholars have not described how attention might influence how the individual interprets his/her involvement with the social environment. Individuals are capable of not just referencing themselves or others, but can see themselves as separate from others, in contrast to others, or as connected or related to others. Such self-definition is described by the working self-concept.

The working self-concept is the cluster or portion of self-knowledge that becomes salient by virtue of aspects of the current social environment (Markus & Kunda, 1986). It thus follows that attentional focus should influence the working self-concept, whose contents vary according to what seems most relevant about the self in the current environment. For example, an individual's gender may be made salient to him if he is the only male in a group of females. Ultimately, the working self-concept influences ongoing behavior (Markus & Wurf, 1987) and thus, it influences the interactions between members of a group at work. If individuals experience self-focused attention while performing a task, they will focus on their own actions, at the expense of attending to other's actions, and on how their actions relate to some internal standard about how they work. The qualities of the individual's actions should make salient that portion of the self-concept concerned with performing the particular task at hand.

If individuals experience other-focused attention while performing a task, they will focus on the actions of others while they themselves are acting. The portion of the self-concept that will be made salient to the individual will be how s/he compares to others. As evidenced in other studies, individuals focus on whatever aspects of themselves are distinctive in the immediate social environment (e.g. Hinkley & Andersen, 1996; McGuire, McGuire & Winton, 1979). Thus, information about the other shapes the self-concept in terms of providing an external comparison point or standard by which to reference the self. For example, individuals may see themselves as *relatively* "more creative" or "poor" performers of the task, depending on the judged creativity and quality of others' actions.

In order to interrelate their actions with others, individuals cannot solely consider their own performance (as with exclusively self-focused attention), nor is it enough to consider how their efforts compare to the efforts of others (as with other-focused attention). I suggest that the working self-concept that emerges in both of those conditions does not consider the individual as related or connected to others. However, as described above, when contextual cues make the relationships between elements salient, distributed attention is possible. Individuals need to first consider these elements as related in order to attend to them, but then they must also attend to the qualities of both elements in order to actually relate them. This should then make salient that portion of the self-concept in which the self is considered as related to, rather than separate from others, or the self-in-relation-to-other.

> *Hypothesis 2: The working self-concept will be shaped by attentional focus, such that under conditions of self-focused attention in interdependent groupwork, the working self-concept should be concerned about the individual as performer; under conditions of other-focused attention, the working self-concept should be concerned about the individual as performer relative to others; and under conditions of attending to both self and other, the working self-concept should be concerned about the individual as performing with others.*

Working self-concept, responsiveness, and coordination quality

The self-in-relation-to-other. The "self-in-relation-to-other" describes the self-concept in terms of the relationships held by the individual with others (Markus & Kitayama, 1991; Surrey, 1991). The self can simultaneously be considered a unique entity, yet related or connected to others. We are all capable of considering ourselves as connected to others, as scholars have described how we use communication to create shared meanings and understandings (Cooley, 1902; Mead, 1982); how we (and women in particular) experience the world as being in connection with others (Jordan, 1991;

Miller & Stiver, 1997; Surrey, 1991); and how cultural systems chronically cue and mold the degree to which we define ourselves as either separate from or related to others (Markus & Kitayama, 1991; Oyserman & Markus, 1993; Triandis, 1989). Behavior influenced by this working self-concept is shaped in terms of the relationship between the self and others. In other words, such behavior can be described as responsive.

Hypothesis 3: The working self-concept mediates the effects of attentional focus on coordination quality through its influence on the responsiveness of behavior.

Responsiveness. Being "responsive" refers to responding in a relevant or appropriate manner to others' behaviors (Davis, 1982; Davis & Holtgraves, 1984). Responsiveness is thus a quality of actions performed in relation to another's action, making it essential to relationships. Responsiveness is defined in terms of a number of contingencies in communication between interaction partners (Davis & Perkowitz, 1979). These contingencies include the likelihood of an actual (any) response, the relevance or appropriateness of the response to the preceding behavior, and the appropriateness of the response latency (length of time to respond) and elaboration (complexity of the behavior) (Davis & Holtgraves, 1984). In sum, actions can be defined as responsive or not based on their relevance to prior actions (Is it related in some way to the preceding communication?) and their appropriateness in relation to prior actions (Is it fast/slow enough? Is it detailed enough?).

Antecedents of responsiveness. Responsiveness is determined by several factors. Attention, for example, is necessary if the individual is to know that the other has performed some action that warrants a response (Davis & Holtgraves, 1984). Other determinants include the ability to actually respond in an appropriate manner, an accurate interpretation of the other's behavior, and the motivation to be responsive (Davis, 1982).

As an example, in a conversation between a manager and a designer in a particular workgroup, the designer may ask, "When you get a minute could you come here?" (see Quinn and Dutton (2005) for the conversation excerpt). The manager cannot fully meet the designer's request for help unless she (1) attends to the designer, and hears his request; (2) is capable of providing the help; (3) interprets the directive to "come here" as part of a request for help, rather than a joke or a greeting; and (4) is willing to "come over" to see what the problem is.

Coordination quality and responsiveness. Responsiveness lies at the heart of the definition of coordination (Cappella, 1997). A response that is relevant and appropriate for prior behavior is necessary for interactions to be sustained (Davis & Holtgraves, 1984; Davis & Perkowitz, 1979). Examining how attention and the role of the working self-concept are involved in coordinating interdependent behavior significantly adds to the conceptualization and importance of responsiveness. In addition to noticing others' behaviors, responsiveness should also involve some self-focused attention to ensure that one's behavior provides an appropriate response to others' actions. If the self-concept considers the individual as separate from others (whether as a singular performer, or as a performer in comparison to others) this limits the recognition and interpretation of others' actions, and inhibits the motivation to be responsive (Davis, 1982).

In interdependent work, however, actions have to be shaped by the requirements for one's actions, as well as by the requirements for the actions of others in order to interrelate them (cf. Victor & Blackburn, 1987). Some response to another's action must first be provided, and must then contain certain qualities that facilitate the continual maintenance of interactions. The degree of successful interrelation describes the quality

of coordination. Attention to both self-produced and other-produced actions allows one to think of oneself in terms of the self-in-relation-to-other; this should positively influence responsive action, as it considers whether what the self does is appropriate and relevant in terms of the qualities of the actions of others. Coordination quality is thus a function of various qualities of individuals' responses to each other, such as the number of responses provided, and the timeliness of the response.

> *Hypothesis 4: Individuals acting under the influence of the working self-concept of the self-in-relation-to-other are more responsive to other individuals, rather than individuals with the working self-concepts of "individual performer" or "performer relative to others."*

> *Hypothesis 5: The responsiveness of behaviors will mediate the effects of the working self-concept on coordination quality.*

> *Hypothesis 6: The more responsive group members are to each other, the higher the quality of intragroup coordination.*

Ultimately, coordination is undertaken to facilitate group performance. I thus expect that this process of attentional influence on coordination quality will influence overall group performance.

> *Hypothesis 7: The higher the quality of intragroup coordination, the higher the quality of the group product.*

Linking attention and feeling or aesthetics in coordination

Coordination is not only a story of the individual, but is also one of the group. The previous sections have outlined how individuals pay attention to their actions, the actions of others, and the relationship between these actions in the interdependent work of the group. These actions are important because they need to be interrelated to produce the new form, one that is greater than the sum of the individual efforts involved (Fleck, 1979). In acting and performing as a group, the individuals in the group may also

experience feelings that coincide with the quality of coordination. In this section I describe how accounts of coordination describe such a feeling, and a framework for understanding the relationship of such feelings with coordination (based on Sandelands (2003)).

Feeling and coordination. While research on coordination has focused on how to best engage and facilitate the relationships amongst organizational actors, it also has an underlying theme that references the experience of something over and above the relationships between discrete elements. For example, Weick (1993) describes how members of the Mann Gulch firefighting team took less "notice" of each other, from which we can infer that a lack of attention to the relationships amongst group members led to their coordination failure. However, Weick also describes how the leader continued to see "a group" or the "entity of a crew." Similarly, other work describes the emergence of "collective work proper" (Fleck, 1979, as cited by Dougherty, 1992), the superordinate work process (Hoffer Gittell, 2001; Hutchins, 1990), the organizational whole (Quinn & Dutton, 2005), or the joint system (Weick & Roberts, 1993). These terms all reference the ultimate purpose of coordination, to interrelate parts in order to create something over and above the individual contributions of each part.

The group as entity. Various perspectives exist about the idea of a group as a gestalt or whole. For example, in symbolic interactionist thought, individuals are separate from each other, but still embody the living "whole," in which society is considered a kind of organism comprised of many individual parts (Cooley, 1902). In another perspective, group or society is distinct from the individual; although individuals can be seen to exist in society, they are inherently related to, rather than separated from, each

other (Durkheim, 1893/1933; Sandelands, 2003; Toennies, 1957). Despite the high task and goal interdependence that characterizes successfully-coordinating groups involved in complex tasks, the differentiation between roles may occlude the inherent interrelation of these roles[1]. Coordination can be described as the process by which individuals transcend the artificial divisions instituted in organizing. When coordination is successful it involves feelings of group or feelings of social life, as a new, whole form is produced (Sandelands, 2003).

Perceiving "group" via feeling. In coordinating with others, individuals have a sense of being part of the life of something greater than their individual selves (Sandelands, 1988, 1994; Sandelands & St. Clair, 1993). It is this "sense" that is described in terms of feeling or an aesthetic. Aesthetics refer to "things felt" and thus involves any sensory experience, regardless of its valence (Strati & Guillet de Montoux, 2002). For example, just as we can feel that something is beautiful, we can also sense disgust, or ugliness. Aesthetics are perceived via the gestalt of what our senses apprehend, and may thus be difficult to articulate, since they do not involve the selection of information that occurs in attention (cf. Taylor & Hansen, 2005). Since the superordinate group is also a gestalt, it has been described as being known tacitly through feeling or intuition (Sandelands, 1998, 2003). If the group is an entity unto itself, with characteristics that set it apart from those of its members (Sandelands & St. Clair, 1993), then individuals coordinating as a group must perceive the group in addition to the relationships they share with others.

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[1] This is observed in 'partition' focus, where the "initial crude division [of a software design project] is the heart of the design", rather than integration towards a whole (DeMarco, 1995, p. 251, as cited by Heath & Staudenmayer, 2000).

Sandelands and his colleagues have specified just how individuals might perceive the group. First, feeling is concomitant with the performance of action, and reflects the form of the work being performed; it is a process, rather than a simple response (Sandelands, 1988; Sandelands & Buckner, 1989). Thus, the work of a group should bear out feelings that reflect the experience of working as a group, as opposed to embodying feelings of work performed separately from others (e.g. feelings of singing as a choir, being one with a group vs. feelings of singing as a soloist, standing apart and above others). Second, the life of the group is one comprised of feelings of dynamic tensions (Sandelands, 1994; 2003). Although groups can be conceived as their own forms in and of themselves, they also involve individuals who can be self-aware (Baumeister, 1998; Duval & Wicklund, 1972). As seen in the descriptions of attention and coordination, the dynamic of coordination involves a tension between the actions and attention of individuals and the efforts of the group as a whole. Sandelands (2003) describes how this tension is felt when individuals suitably act as part of a group, rather than solely on their own behalf. Individuals are not simply *in* a group but can also feel themselves as being *of* the group, performing with and on behalf of the group.

Empirically linking such feeling with coordination is challenging. Since feelings or aesthetics are based on our overall sensory experiences, they do not appear to have a direct cause, and are "just known" (Sandelands & St. Clair, 1993). Given its tacit nature, it is difficult for individuals to articulate what they know through feeling (Sandelands, 1994; 1998; 2003; Taylor, 2002). It is possible, however to acquire individuals' accounts of these feelings (Sandelands & St. Clair, 1993; Willingham, 2001) and to thus use them in understanding how they are related to coordination. Additionally, the descriptions of

feeling "group" suggest associations with coordination quality. First, more feeling "group" should be associated with successful coordination. Although the smooth interrelation of efforts may be based in individuals' attention to the relationship between their actions with others', the interrelation of speech and actions is itself a new and unique form. Second, in unsuccessful or lower-quality coordination, the limiting of attention to the efforts of either the self or other should be accompanied by feelings of the division of labor, or of being an entity separate and distinct from the other members of the group.

> *Hypothesis 8: Feeling "group" will be directly and positively related to coordination quality.*

METHOD

The present study takes an embodied perspective to how attention influences coordination quality. The embodied cognition perspective acknowledges the many factors involved in seemingly "simple" behavior and the complex interplay between the immediate (physical and social) context and mental states (Clark, 1999; 2006). In group work, attention is manifested in the ways in which group members behave towards each other as they coordinate their actions. These behaviors communicate information about what group members are doing and how it relates (or not) to other member's actions. This study examines the speech and behaviors of group members since attending to both the self and to others is reflected in the interactions of everyday conversation (Condon, 1982; Scheflen, 1982; Schegloff & Sacks, 1973), and the entrainment or shared rhythm of interaction partners' actions (Bernieri, Reznick, & Rosenthal, 1988; Scheflen, 1982). This alignment of action is consequential for feelings of rapport and attunement, through

which shared understandings and feelings are developed (Kendon, 1982; LaFrance, 1979; LaFrance & Ickes, 1981).

Based on this perspective, I analyzed video records of experimental work groups to examine how group members' behaviors demonstrated attentional focus and influenced coordination quality. The analysis of video-records helps to account for the range of media participants use to communicate within their interactions, such as speech, gesture, and writing (Goodwin, 2000; Kendon, 2004; LeBaron, 2005; Streeck & Mehus, 2005). Posture, bodily orientation, and speech all reflect attention, communicate meaning, and help to reinforce the information they transmit. With group members allowed to self-organize the interrelation of their speech and actions, we can observe how coordination is enacted, and what influences its quality, over and above how coordination is "managed".

Participants

Two hundred and four introductory psychology undergraduate students at a large Midwestern university were each randomly assigned to seventy-seven groups. 53.4% were female, and 70.6% of the participants were White. There were fifty-five triads and twenty-two dyads. The majority of students participated for course credit, and a minority responded to fliers around campus advertising participation in a "Marketing Study" for $10 compensation. Each group was randomly assigned to one of four conditions: a self-focused condition, an other-focused condition, a self-in-relation-to-other-focused condition, and a control (time-focused) condition.

Design and Procedure

Small groups were observed in a song composition task. The performative nature of group music-making exemplifies issues of interdependence, cognition and coordination, since such tasks can only be performed as a unit (e.g. Allmendinger, Hackman, & Lehman, 1996; Barrett, 1998; Bougon, Weick & Binkhorst, 1977; Murnighan & Conlon, 1991; Weick, 1992). Furthermore, Sandelands (1998, 2003) suggests that art is the medium by which feelings of group can be objectified and thus made available for scientific analysis. The songs that groups composed can be considered artful expressions of the interrelation of group members' efforts, and the task of collaborating to make a concrete product in which the efforts of each group member is made visible should involve feelings of "group" or of a whole.

Participants arrived at the lab in groups of either two or three and were seated around a small table. Participants were free to choose any one of three seats at the table; each seat had an assigned letter – P, K, or N – that identified participants without the use of their names. After gaining participants' initial consent, the experimenter (one of five) distributed a pre-experimental questionnaire that contained measures of various control variables. The experimenter remained in the room while the questionnaires were completed. After collecting the completed questionnaires, the experimenter explained the details of the study. The experimenter provided a cover story, maintaining that this study was part of a larger project between the Psychology and Marketing Departments to develop new jingles for various companies to use. Commercial "jingles" were described as short songs that one might hear on the radio or television that help sell products. In order to create the best song, participants were told they would go through two short trial

rounds of lyric composition before a final round; each song was to be eight lines long. The attentional manipulation then followed in the form of written instructions for the task.

All participants in the same group received identical written instructions, an evaluation form, and forms to write the song being produced. In the *self-focused attentional* condition, instructions about the task read:

> *Your task in today's study is to create a song about a common household product. Like a team of advertisers that produces jingles for commercials, as a group you all must together come up with a song for one of the products in the booklet on the table. You are to collaborate with others in the group, creating and sharing your contributions with them in order to quickly generate a complete song. Your goal as a group is to create the best song possible about the product. Each person in the group will be held responsible for an equal portion of the work. Your goal as an individual is to **make the best contributions that you can**. **You will evaluate your own contributions.** The tune for the jingle will be played in the background to help with the task. Please use the forms provided to record the lines to the song, and follow the instructions on them as well.*

In the *other-focused* condition, the relevant instructions were: "**help others make the best contributions that they can**. **You will evaluate their contributions**." In the *self- and other-focused* condition, the relevant instructions were: "**relate your contributions to the contributions of others in the best way possible**. **You will evaluate your joint contributions.**" In the *time-focused* (control) condition, the relevant instructions were "**keep in mind how long the group takes to complete the task. You will evaluate your use of time in this task.**"

Participants were also instructed that at the end of the task they were expected to provide evaluations of themselves, others, their joint contributions or their use of time in the task. A relevant evaluation questionnaire (see Appendix B) was distributed with the instructions. The evaluation forms were presented at the beginning of the experiment to

reinforce the condition-relevant attentional focus and participants' responses to these items at the end of the task also served as a manipulation check.

After reading their instructions and acknowledging that they understood them, the participants engaged in two practice rounds of composing songs about product names provided to them on a list. The two practice trials lasted approximately five minutes each. At the beginning of each trial, the experimenter turned on the tune to a common nursery rhyme, which was played through small computer speakers connected to a music player. The (wordless) tunes provided an underlying structure for the song, the first being "Twinkle, Twinkle, Little Star" (http://kids.niehs.nih.gov/lyrics/twinkle.htm), and the second "Mary Had A Little Lamb" (http://kids.niehs.nih.gov/lyrics/mary.htm). These tunes were assumed to be familiar to most participants or to at least have a simple enough structure for easy use by participants unfamiliar with the tunes. Participants were told to use walkie-talkies provided to them to reach the experimenter, in case any questions arose. After turning on the music, the experimenter left the room prior to the beginning of each trial, ostensibly for the purpose of entering data for another study. In reality, leaving the group allowed them to assume they were unobserved when, in fact, the experimenter observed the group on a monitor in a separate room through a link to a camera and microphone in the experiment room. The experimenter concluded both practice trials by returning to the room, interrupting the trial and stopping the music.

After the two practice trials, participants were instructed to re-read the task instructions in order to reinforce the attentional focus. For the third trial, participants were told to proceed in the same manner as the previous practice trials. They would compose lyrics to a jingle about coffee, but would have as much time as they needed

(except for the control condition, in which they were also told to work as quickly as possible). The group was to "page" the experimenter with the walkie-talkie to indicate completion of the third trial. Upon completion of the final trial, the experimenter returned to the room and asked the group if they are willing to sing the final song they composed. This "performance" trial was presented as an opportunity for the group to see if they would recommend it as a sample jingle for the university's Marketing Department. If all participants were willing to sing the song, the experimenter instructed them to let him/her know when they were done over the walkie-talkie and returned to the recording room to observe the group. The experimenter's absence was designed to limit any limiting effects of self-presentation induced arousal (Baumeister, 1982) on attentional focus (Easterbrook, 1959) and task performance (Hebb, 1949). If participants were unwilling to perform their final song, or upon completion of their performance trial, when the experimenter returned to the room, the group was instructed to complete their evaluations, and to also complete a questionnaire about their experience, which included manipulation checks such as "I was focused on others' contributions" (see Appendix D). After completing the questionnaire, participants were debriefed as to the true nature of the study, and consent for the use of the audio/video record of their interactions was requested.

 Need for deception. In this study (performed across four different room locations due to external constraints), video cameras were either completely hidden from the view of participants, or present in the room, but marked as "broken." This deception was undertaken because of the possible effect of the presence of cameras on attentional focus. Work by Duval & Wicklund (1972) began a tradition of investigating self-awareness (or

self-focused attention) by manipulating this awareness or attention through the presence of audio- or video-recording equipment, or mirrors. Participants in such conditions were found to focus inward on themselves (e.g., Duval & Silvia, 2002). Such an influence on participants' attention could have possibly erased any effect of the manipulations meant to induce a focus on others or a focus on the self-in-relation-to-others. Leading participants to believe that they were not video- or audio-recorded allowed for subtle, but important, aspects of behavior that demonstrate responsiveness (e.g. non-verbal expressions) to be captured and analyzed. Because awareness of being video- or audio-recorded might have induced a self-focus (it is a common manipulation in studies on self-awareness), consent to analysis and presentation of video-recorded material was gained at the end of the study.

Measures

In order to derive measures of the variables of concern, my research team and I transcribed the final song-creation trial of each session. Research assistants were trained in the transcription conventions of conversation analysis (Sacks, Schegloff, & Jefferson, 1974). The conversation of the third trial, and not the first two practice trials, was extracted for transcription because it was in this conversation that one could observe the completion of an entire song. In this trial, therefore, we could observe the full effect of attentional focus on the song-creation process from commencement to completion.

In order to incorporate both gesture and conversational speech in my analysis, extracts of the conversation were selected and transcription of the actions accompanying speech was included. First, I identified the points in the conversation in which the lines that comprise the final song were first contributed. Second, the six speaking turns before

and after the third contribution offered in the conversation were selected to comprise the extract[2]. Third, the actions performed by participants within this extract were added to the speech transcription. These extracts consisted of eleven minutes of speaking time, on average. Research has demonstrated that a small sub-sample (or "thin slice") of an entire interaction can be reliably and positively associated with ecologically valid criteria representative of global or molar judgments (Ambady, 2006; Ambady & Rosenthal, 1993). Brief selections of the video content of lengthy interactions have also been extracted for analysis by multiple raters in studies of interaction and coordination (e.g. Bernieri, Reznick, & Rosenthal, 1988; Bernieri, Gillis, Davis, & Grahe, 1996).

Attentionally-focused behaviors. Attention was operationalized in terms of participants' responses to each other. This descriptive, or *task-defined* view of attention is based on the performance of specific actions, rather than others (Luck & Vecera, 2002). As will be described below, attention and the working self-concept were measured at the level of observable response systems, viz. speech, gesture and bodily orientation. Measuring attention in this way differs from a *process-oriented* operationalization, which is concerned with measuring how cognitive processes are managed in order to focus on a subset of available stimuli (Luck & Vecera, 2002). The structure of the task present across all conditions directed participants' attention to cooperate and complete the task as a group: the cover story motivated participants to work together and the use of several trials allowed attention to shift from initial difficulties with the task structure to the content of the contributions being made. The actual demonstration of attention by participants was, however, variable across condition and over time.

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[2] This "contribution" refers to a suggested addition to the song. We examined the third contribution offered in the course of the conversation, which did not necessarily always became the third line in the final song.

A coding scheme for participants' talk and action was inductively developed through a review of pilot experimental sessions (see Appendix G). This review revealed the repertoire of behaviors participants employed to coordinate their contributions to the song and the coding scheme was continuously updated as new forms of behavior became apparent. Each behavior was categorized in terms of how it either limited attention to the self or other, or created affordances for attention to both the self and other. The inductive development of the codes rather than the use of extant analytic schemes for interaction (e.g. Bales' Interaction Process Analysis (1950)) was preferable, as these codes represented the behaviors formulated for communication, coordination, and task completion in this specific context. For example, *looking down at one's jingle record sheet* limited a participant's visual attention to the words that they had selected to record as part of the song, and did not allow for the receipt of visual information about the other participants. This was therefore coded as behavior that was oriented to the self. Similarly, *non-verbally accepting another's contribution* made public to others in the group that one had considered another's contribution and felt it was valid. This was thus coded as behavior oriented to the other. While attention to both self and other can be calculated as the proportion of self-oriented to other-oriented to others, a few behaviors were also observed that directly reflect an orientation to both self and other, e.g. supplementing another's contribution by completing their line, and spontaneously singing out the co-created contributions as a group. Counts of all these behaviors were tabulated and summed for total self-focused behaviors, other-focused behaviors and self-and-other-focused behaviors. During the course of data collection and processing, the counts of "self-and-other-focused" behaviors were too small to be considered in the analyses, so

the main measure of attentional focus is the ratio of self-focused behaviors (as a percentage of total behaviors) to other-focused behaviors (as a percentage of total behavior. This is referred to as *self-other ratio* in the analyses.

Working self-concept: The use of personal pronouns by participants while they coordinate their efforts served as a measure of the working self-concept. Working self-concept was operationalized as the count of the number of types of pronouns used by each participant during the final song-creation trial. These counts at the individual level also provided an average pronoun usage variable at the group level. The use of the first-person singular pronoun "I" reflected "individual performer"; the second-person pronoun "you", "individual performer relative to others"; and the first-person plural pronoun "we", the "self-in-relation-to-other in performing a task." Pronoun usage has proven to be a robust measure and manipulator of social identity and self-construal. Liang, Moreland and Argote (1995) operationalized social identity, or the tendency to think about the self as a group member or as an individual, in terms of pronoun usage. Prior research has considered the use of "I" in a sentence completion task as indicative of self-focus, while the use of "we" indicated a distributed focus since the self is included with others (Salovey, 1992; Wegner & Giuliano, 1990). Given the present conceptual framework relating attention to self-concept, "on-line" pronoun usage (while the task is performed) should reflect the self-concept currently influencing behavior.

Responsiveness: Measures of responsiveness were derived from the transcript of the group's conversation in the third song-composition trial. I received training in the use of various Jeffersonian transcription conventions (Sacks, Schegloff, & Jefferson, 1974) such as indications of the overlap of speech between group members (indicated with "["

in the transcript) and the latching of one participant's speech onto another's (indicated with "=" in the transcript). I transcribed the majority of experimental sessions, and trained research assistants to transcribe a minority of the sessions. Both the overlap and latching of speech indicate the quick provision of responses to prior utterances.

Coordination quality: Measures of coordination quality were derived from the video-record of the group's behavior. Three raters analyzed randomized, 1-minute video samples from the transcribed time period (after Bernieri et al., 1988; Cappella, 1981; Cappella, 1997). One rater analyzed the first thirty-nine groups, while two other raters analyzed fifty-three of the seventy-seven groups, with each rater providing overlapping ratings of at least thirty-three groups. Each rater responded to a questionnaire with items on a 7-point scale with anchors of *very strongly agree* to *very strongly disagree.* The items included "The partners engaged in simultaneous movement;" "The partners had similar tempos of activity;" "The partners' interaction was coordinated and smooth;" and "The partners matched one another's behaviors." This provided a global measure of the quality of the interrelation of talk and action. Intra-class correlations (ICC) were used to assess the degree of consistency or reliability amongst multiple raters (Shrout & Fleiss, 1979). The average ICC across all three raters was .92 ($p < .01$), indicating a high degree of reliability.

Song quality: Two raters' assessed the quality of the song. A measure of "attitude towards the ad" developed by marketing scholars was modified for judgments of the quality of each song (Biehal, Stephens & Curlo, 1992). This brief five-item measure used a seven-point Likert-type scale to acquire ratings of the "interesting" and "informative" nature of each jingle. A single new item was included to assess judgments of the

coherence of the song or the gestalt interrelation of the lines (see Appendix E). The average ICC across the two raters' reliability for the song ratings was .704.

Control variables. In order to account for the influence of traits that involved some chronic attentional focus, several measures were administered in the pre-experimental questionnaire. These measures included scales of private self-consciousness (Carver & Scheier, 1985), e.g. "I am always trying to figure myself out;" other-awareness (developed by replacing the word "myself" with "other" in several items of the private self-consciousness scale); self-construals (Singelis, 1994), e.g. "It's important for me to maintain harmony within my group;" and self-monitoring (Gangestad & Snyder, 1985), e.g. "I find it hard to imitate the behavior of other people." Except for the self-monitoring scale, which was scored True/False, responses to all the items were based on a five-point Likert-type scale, with 1 = "Strongly Disagree" and 5 = "Strongly Agree." I also administered post-experimental measures of gender, race/ethnicity, and the valence of actions performed in the task (which potentially influences attention and working memory; Perlstein, Elbert, & Stenger, 2001).

RESULTS

Although this study tests the relationship between the individual-level performance of attention and coordination quality, coordination itself is a group-level phenomenon. Therefore, measures of variables at the individual-level (such as self-other ratio, and personality traits) were averaged within each group to produce means and standard deviations at the group level (Table 1.1). Correlations amongst the variables at the group level of analysis are presented in Table 1.2.

Manipulation checks

Reported attentional focus. In one-way ANOVA analyses, controlling for the group gender composition, the group's mean trait measures (other-awareness, self-awareness, independent and interdependent self-construal, and self-monitoring), experimenter, and room location, there were no significant differences in a single item asking participants how much they were focused on themselves included in the post-experimental questionnaire. Another item, asking participants how much they were focused on others in their task displayed marginally significant differences across the experimental conditions ($F = 2.287$, $p < .1$). Post-hoc (Least Significant Difference) tests revealed a significant difference between the self-focused condition ($M = 3.84$) and the other-focused ($M = 3.43$) and control conditions ($M = 3.41$). This indicates that the experimental manipulation was not effective in inducing (reported) attentional focus in the manner specified by the condition instructions. While there was no difference in the amount of reported self-focus, participants reported higher other-focus in the self-focus condition, compared to the other-focused and control conditions, in the opposite direction of the condition instructions.

Observed attentional focus. The self-other ratio derived from the coding of individuals' behaviors also did not differ significantly across experimental conditions. This behavioral measure thus confirms that the experimental manipulation was not effective. The individual level ratio of self-focused to other-focused behaviors, was not normally-distributed within conditions (as expected with frequency counts of observational data; Field (2009)), so this ratio was transformed by first adding a constant (1) to each value of the ratio, and taking the log (base 10) value of that adjusted value.

This demonstrated better normality within conditions, and the group mean of this value was thus used throughout the analyses.

Controlling for confounds

ANCOVA analyses demonstrated that coordination quality ratings differed significantly across experimenters ($F = 2.653$, $p < .05$, partial $\eta^2 = .152$). Post-hoc tests revealed that the three groups run by one experimenter (labeled 'B') had significantly lower coordination quality than the other experimenters. Additionally, song quality ratings differed significantly across room locations ($F = 2.858$, $p < .05$, partial $\eta^2 = .214$), controlling for all other covariates. First-person plural pronoun use also differed significantly across room locations ($F = 5.253$, $p < .01$, partial $\eta^2 = .131$). Post-hoc tests revealed that first-person plural pronouns were used significantly more in the room location in which recording equipment was visible, compared to the most recent room location in which no recording equipment was visible. Regression analysis demonstrated that group size significantly predicted self-other ratio, controlling for all other covariates ($\beta = -.274$, $p < .05$, $R^2 = .424$, $F = .924$, $p = .539$). The group means of trait self-monitoring (as measured in the pre-experimental questionnaire) were found to significantly differ across experimental conditions ($F = 4.593$, $p < .01$, partial $\eta^2 = .192$), controlling for all other covariates. Despite randomized assignment, trait self-monitoring did not appear to be independent from the experimental effect, rendering it a true confound. However, regression analyses revealed no significant influence of the group mean of self-monitoring on the variables of interest.

Overview

Hypotheses were modified and tested through multiple regression analyses. Rather than test the differential effects of the experimental conditions on observed attentional focus, working self-concept, responsiveness, coordination quality and feeling group, the relationships amongst these variables were examined via several individual (hierarchical) regression analyses. In each analysis reported below the covariates of group size, experimenter, room location, group gender composition (% female), mean group personality traits, and trial duration were entered in the first block. Also, in addition to the log-transformation of non-normally distributed variables, variables based on the calculation of percentages, such as the self-other ratio, and the use of categories of pronouns as a percentage of the total transcript had to undergo an additional transformation. Such variables are essentially proportions, which tend to have unequal variances; using an arcsine transformation (taking the arcsine of the square root of a value) helps to normalize the proportionally based distributions (Mosteller & Youtz, 1961). Because these percentage data accounted for the size of their sample (e.g. the total number of attentionally-focused behaviors and number of words in a given experimental session), it was appropriate to proceed with linear regressions, rather than with a test designed for nominal variables, such as logistic regression.

The overarching hypothesis predicts that coordination quality would be highest when the self-other ratio was balanced, or approximately 1, and would be reduced when there was more self-focus than other-focus (or vice versa). Since the self-other ratio was calculated by dividing the self-focused percentage of behaviors by the other-focused percentage of behaviors, values less than 1 indicate more other-focused behaviors, while

values above 1 indicate more self-focused behaviors. As seen in Table 1.1, the raw, non-transformed means indicate that participants in all conditions demonstrated slightly more other-focused behaviors than self-focused behaviors, but this imbalance was slight, as all the means were near 1. In order to test the overall model depicted in Figure 1.1, a series of path analyses were conducted, first testing the hypothesized direct effects of each variable on the study outcomes (coordination quality, feeling group, song quality, and trial duration), and then the hypothesized individual paths amongst the variables. The values of significant or marginally significant paths are reported and presented in Figure 1.2.

Hypotheses 1 and 2: Direct effects of self-other focus ratio

The first set of analyses examines the direct effect of self-other ratio on the study outcomes (coordination quality, feeling group, song quality, and trial duration). To do this, I controlled for the various set of control variables described above in a regression analysis, entering them into the first step, and then entering the log-transformed self-other ratio as the key explanatory variable in the second step. In this initial analysis, neither the control variables, nor self-other ratio showed significant associations with coordination quality or feeling group (see Table 1.3). Self-other ratio did significantly predict overlaps while controlling for group size (see Table 1.4). In a similar fashion, self-other ratio was found to predict latching while controlling for group size (see Table 1.5).

Hypotheses 3 and 4: Direct effects of pronoun use

Neither first-person singular, second-person singular and plural, nor first person plural pronoun use demonstrated significant direct associations with any of the variables they were hypothesized to predict (overlaps, latchings, coordination quality, feeling

group, song quality, trial duration). For exploratory purposes, the use of first-person singular, and second-person singular and plural was summed to create a variable that reflected "individualistic" pronoun use. The use of first-person plural was subtracted from this new variable in order to compute a difference variable accounting for the balance of "individualistic" to "pluralistic" pronoun use. An interaction term was also computed between self-other ratio and this difference variable to test the moderating effect of this difference variable on the influence of attention on other variables. None of these new variables were significantly associated with any of the other variables hypothesized to be influenced by pronoun use. All pronoun use variables were excluded from the remainder of the analyses.

Hypotheses 5 and 6: Direct effects of overlaps and latchings

The next set of analyses focused on the direct effects of the measures of responsiveness, speech overlaps and latchings, on the study outcomes. After entering all significant covariates in one step, it was found that the number of overlaps predicted coordination quality with marginal significance, after controlling for group size ($\beta = .201$, $p < .1$, $R^2 = .259$; $\Delta R^2 = .039$, $p < .1$; $F(2, 72) = 4.259$, $p < .05$). As displayed in Table 1.6, latchings were found to significantly predict coordination quality, controlling for group size.

After removing the non-significant control variables, mean interdependent self-construal was entered in the first step, and speech overlaps was entered in the second step. This analysis demonstrated that overlaps did predict feeling group over and above the control variables that also predicted feeling group. The same set of analyses were conducted to test the effect of latchings, which did not significantly predict coordination

or song quality, but did significantly predict feeling group, controlling for interdependent self-construal.

Latching also predicted feeling group more strongly than significantly associated covariates, such as interdependent self-construal (Table 1.7). Both latching and interdependent self-construal simultaneously predicted feeling group, so an interaction term between this covariate and latching was computed and entered in a fourth step. The interaction term did not significantly predict feeling group, nor did it add to the variance explained. The larger regression coefficient and t-value (2.952 for latching and 2.194 for interdependent self-construal) suggest that latching is a better predictor of feeling group than overlaps. Overlaps also significantly predicted feeling group, but did so over and above even interdependent self-construal (see Table 1.8). Given these results, a separate analysis was conducted in which overlaps were entered into a final step, with interdependent self-construal, coordination quality, and latching entered in prior steps. Including both overlaps and latching in the model produced non-significant coefficients for all variables, suggesting that overlaps and latching have separate effects on feeling group, in tandem with interdependent self-construal.

Hypotheses 7 and 8: Direct effects amongst outcomes

As a coarse measure of the impact of coordination quality on song quality, it must be noted that all groups produced a final song, although there were differences in the completion times for groups in different experimental conditions. As can be seen in Table 1.1, groups in the self-in-relation-to-other focus condition took the longest to complete a final song, while groups in the control/time-focused condition were the quickest. This difference, however, was statistically non-significant. The quality of the song itself,

however, was not significantly predicted by either coordination quality or any of the variables in the conceptual model. However, a variety of covariates were found to be significantly associated with this outcome variable. These included the experimenter gender (with higher song quality associated with the two male experimenters), self-awareness, interdependent self-construal, and self-monitoring. When the influence of these covariates was isolated in a single regression analysis, only self-awareness was found to significantly and negatively predict song quality ($\beta = -.45$, $p < .01$, $R^2 = .269$, $p < .01$; $F (5, 70) = 5.159$, $p < .01$).

Coordination quality displayed a significant independent relationship with feeling group, but when it was included in a hierarchical multiple regression analysis (with interdependent self-construal entered in the first step, and latching in the second step), this relationship with feeling group became non-significant (see Table 1.7). The same was found when overlaps were included in a separate analysis (see Table 1.8).

DISCUSSION

This was an exploratory study on the role of individual-level attention on coordination, a group-level phenomenon. Overall, it was hypothesized that a distribution of focus across the actions of the self and others' actions would positively influence coordination quality. Levels of coordination quality and group performance were similar across experimental conditions. All groups successfully composed a song, and audio-visual records of attentional behaviors reflected a consistent balance of attention that focused slightly more on the other than on the self across conditions. Cross-sectional, regression analyses demonstrated that self-other ratio negatively predicted the number of speech overlaps and latchings that occurred within a group (such that the greater the

degree of other-focus, the higher the number of overlaps and latchings). In turn, both overlaps and latchings positively predicted both coordination quality and feeling group. Ratings on the measure of song quality were not significantly associated with any of the variables of interest in the study.

Attention and coordination

Despite the limited support for several of the study's hypotheses, the results do present several interesting findings about the relationship of attention to the experience of coordinating in groups. First, the average attentional balance associated with the successful completion of the group task (across conditions) was 9.2 (self) : 10 (other). Second, the successful song completion by each group provided some *prima facie* evidence for the occurrence of coordination. Third, coordination quality appeared to be indirectly associated with attention through the measures of responsiveness. One insight from these results is that the attentional balance demonstrates the role of attending to both self and other, with a slight favoring of the other possibly due to the interdependent nature of the task. Thus, although considering the other is important for successful alignment, congruence, or coordination of joint efforts, only a slightly greater focus on the other appears to be involved in effective coordination (cf. Sandelands & Calder, 1984). At present, the study provides at least preliminary evidence for the importance of both attention to the self, as well as attention to the other in intragroup coordination.

This evidence complements the current theorizing on coordination in organizations, which has already been described as focusing on how people engage the relationships they share with others. In drawing on notions of heedful interrelating (Weick & Roberts, 1993) in their accounts of how individuals collaborate in collective

work (e.g. Hargadon & Bechky, 2006), or otherwise describing the type of focus involved in successful and unsuccessful coordination (Dougherty, 1992; Heath & Staudenmayer, 2000), scholars imply that as people coordinate, they need to be attentive to others, or at least not be overly self-focused. Yet, this study's results suggest that at least some focus on the self is necessary. This frames in a clearer manner what some of these accounts already imply, for example when Hargadon and Bechky (2006) describe how product designers attend to others by listening to their creative ideas, but also employ some focus on the self as they link others' ideas to their own in order to come up with a "collective" innovation. By making clearer the involvement of both self- and other-focus in coordination, both scholars and practitioners can identify the nature and consequences of behaviors that limit or facilitate attention in ways that affect collective performance.

Responsiveness and the experience of coordination

Another insight from these findings is based on the concurrent relationships between attention, responsiveness, coordination, and feeling group. The negative relationship between self-other ratio and the responsiveness measures of speech overlaps and latchings indicate that groups of individuals who focused more on the self responded in a less ready or timely fashion to the utterances of others. In first considering the influence of these responsiveness measures on coordination quality, the results demonstrate that the micro-qualities of how people interact with each other, such as the timely provision of responses, are significantly linked to coordination quality. A fairly intuitive element of this finding is the stronger relationship between latching and coordination quality, in comparison to that between overlaps and coordination quality.

While latchings involve immediately speaking after allowing another person to complete an utterance, the count of overlaps included both brief, facilitative back-channel communication (e.g. "Yeah," "uh-huh") as well as more interruptive, longer interjections over some one else's speech. Latchings thus provide a surer indication of the quick and ready flow of interaction amongst group members. Specifying the link between responsiveness and coordination meets one key goal of the study, since it demonstrates the importance of the real-time enactment of relating to others for understanding coordination, in addition to the macro-level conditions, such as interdependence.

In addition to coordination, the results indicate that the more overlaps and latchings, the more individual group members, on average, reported feeling "in harmony with others" or "one with the group." This suggests a direct link between the responsiveness of interactions within ad hoc, temporary groups and the sense of the group coming together as a whole. This differs from studies of group cohesion that examine the development and consequences of strong emotional attachments to team members and to the team itself (Beal et al., 2003; Mullen & Copper, 1994). While these studies do suggest that group cohesion may aid in the harmony and consensus necessary to work together as a group, the detrimental effects of too much conformity (or "groupthink") place limits on the benefits of such cohesion (Janis, 1972).

The results of the current study differentiate it from group cohesion research by first finding no direct links between the measure of feeling group and measures of group performance, such as coordination quality, song quality, or even trial duration. Although a marginally significant relationship between feeling group and coordination quality was found, the directionality of this relationship, and thus the function of feeling group in the

work of these groups, remains unclear. Second, the fact that overlaps and latchings were positively associated with feeling group but not song quality suggests that this "feeling" is a separate construct from group performance. This "feeling" taps into the aesthetic or sensing of the actual work of the group, even in a temporary ad hoc group, in which group members are asked to work closely together without even knowing each other's names. The conditions in the lab allowed participants of similar skill levels (most participants openly admitted having no creative skills to each other), to engage in an improvisational, yet structured task in a contained setting where they could feel free to play at building on each other's attempts at composing song lyrics, thus reflecting the same conditions Eisenberg (1990) cites as necessary for a "jamming" experience. Furthermore, the concurrent negative link between self-other ratio and responsiveness and positive link between responsiveness and feeling group provide some preliminary evidence for Eisenberg's suggestion that less self-consciousness and "surrender" to the group is necessary for "jamming."

These results bring responsiveness to the forefront of coordination research, taking seriously the notion that responsiveness is at the heart of all coordination (Cappella, 1997). A brief review of the organizational literature, however, would suggest that this concept has been limited in referencing how organizations adjust policies to their employees' needs (e.g. Milliken et al., 1998), or how organizations adjust their processes to environmental demands (Hoyt et al., 2007). The present study takes responsiveness from the domain of social psychology and demonstrates its inherent involvement in a case of simple organizing amongst dyads and triads. Responsiveness is thus not only a

fundamental element of interaction in close personal relationships (Reis, 2007), but also a key involvement in organizational coordination.

Non-significant findings

In addition to the positive findings of this study, the non-significant or inconclusive findings also provide important information to consider about coordination quality. The first non-significant relationships of note are those between the measures of attention, working self-concept, responsiveness and song quality. The non-normal distribution of song quality ratings across the entire sample may reflect the inconsistent quality of the songs themselves. Song raters may have faced some difficulty in having a true "reference" point since songs differed in the use of a brand name, the number of lines included, and even the use of one or two verses. Since participants were instructed to "create the best song possible," a minority of groups took this as license to develop a brand name, or create more or less than eight lines (in order to better fit the tune of "Twinkle, twinkle, little star"), or create multi-versed compositions. Thus, although raters provided moderately consistent judgments across songs and across each other, the actual range and distribution of song ratings may not have been amenable to analyses of prediction.

In another surprising result, the measures of pronoun use were neither significantly different across conditions, nor significantly associated with the other measures in the study. This latter issue may be due to the structuring of the task for the purpose of creating a jingle aimed at advertising coffee to abstract "others" on behalf of an abstract set of companies. The use of "I," "you," and "we" may have been more closely linked to enacting the task with these parties in mind, rather than directly

referencing the other individuals actually present in the room. Given the design of the study, rather than use the pronoun counts suggested in other research, a better measure of working self-concept might have included a brief questionnaire or pronoun-circling task at the end of the study (such as that used to prime self-construal; Gardner, Gabriel, & Lee, 1999). The major disadvantage of this approach, however, would be its separation from the real-time flow of behavior in the coordination of the group.

Apart from the empirical considerations introduced by the lack of support for the role of pronoun use, the non-significant relationships with other study variables suggest a closer look at how pronouns were used might be necessary. Although the mean differences are small, the use of various pronouns indicate a contrast effect: the use of "I" and "me" was highest in groups in the other-focused condition; the use of "you" and "yours" was highest in groups in the self-focused condition; and the use of "we" and "us" was highest in groups in the control/time-focused condition (see Table 1.1). Groups thus displayed some sort of reactance towards the experimental manipulation (Brehm, 1966). In all conditions, participants were instructed to work together as a group, and as demonstrated by groups in the control condition, they tended to use pronouns that included the self with others. In the self- and other-focused conditions, participants may have unconsciously sought to respectively include either the other or the self through their speech, in opposition to the limits prescribed by their respective experimental instructions. This limited evidence suggests that the self-in-relation-to-other may very well be the dominant working self-concept in coordination, and furthermore, that individuals involved in coordination seek to actively include either the self or the other if

any limits are placed on involving the self-in-relation-to-other. Inclusion of the measures described above in a larger sample would provide more robust evidence of such an effect.

Limitations

The findings presented here reflect the predictive power of the variables of interest over and above the control variables. However, on average, the relationships between variables were moderate (there were no coefficients greater than .35), and the variance explained by each model was small. Additionally, some of these control variables remained significantly associated with the outcomes. For example, interdependent self-construal remained a significant predictor of feeling group, in addition to responsiveness. The influence of this trait is understandable, as those who chronically see themselves as part of a larger social group in general might be more attuned to the functioning of the group as a whole. However, the analysis of the predictive power of overlaps (but not latchings) suggests that the real-time enactment of connection with others may be more meaningful for understanding coordination quality.

Data collection, processing, and analysis also had their limits. Due to limits on time and research assistance availability, I conducted the majority of experimental sessions, which rendered them "single-blind." This meant that only the participants were unaware of the difference in experimental conditions. The use of a written script for interaction with participants, however, limited the variability in my behavior towards different experimental groups, but slight (non-significant) experimenter effects were demonstrated. Data processing was also challenging since it involved video-recording, transcription of the entire third trial (about nine minutes of interaction, on average, with the longest being thirty minutes), then transcription of the actions involved in

contributing a line to the song, and coding of this "thin slice" of speech and action. Although human judges may be the best resource for processing nonverbal data, the limits of the data quality and training necessary limit the validity of findings in such research (Scherer & Ekman, 1982). The audio/visual record in some instances is not of ideal quality, resulting in some missing data in transcribing participants' speech. Also, although two research assistants were trained in the detection of overlaps and latchings, and in the use of the transcription symbols to represent them, as the most well-trained transcriber, I was responsible for most of the transcripts. The lengthy transcription process (especially with lower-quality audio/visual records) prohibited multiple transcriptions of the same record. Future analyses can include counts of overlaps and latchings produced by independent transcribers.

In general, the task was designed to control for differences in uncertainty and interdependence that traditionally shape coordination, in order to isolate the influence of attentional focus on coordination quality. Although attempts were made to manipulate attentional focus via written instructions, the easy and open communication facilitated through close co-location, and the encouragement to work together as a group across conditions limited the number and degree of coordination breakdowns to be observed. The physical and social context of the task meant that participants would be motivated to work as a group, and capable of doing so since they could easily share information by looking, listening, gesturing, reading, and writing. Furthermore, the role of learning in shaping coordination quality cannot be discounted. By limiting analysis to interaction in the third song-composition trial, these results ignore how the interactions in the first trial might have demonstrated the immediate effect of the experimental manipulation. By the

third trial, the groups would have developed norms and learned what kinds of interactions made for efficient coordination. Restricting, and then comparing variations in the physical, social, and temporal qualities of the group process would have provided a stronger test of the influence of attention on coordination.

Future Research

The qualitative nature of the data collected in this study leaves them available for many other potential analyses. In addition to the analytical possibilities, the durability and portability of video records allows for their future independent review by any investigator (LeBaron, 2005; Levinson, 1983). In the future, a closer examination of the degree of synchrony in terms of the demonstration of self-focused and other-focused behaviors amongst group participants can be conducted to provide another measure of coordination quality. Similarly, more fine-grained coding can determine the degree of mutual relevance or association between latched responses or the facilitative or interruptive nature of overlaps. Differentiating what marks the demonstration of certain types of attention in speech, as opposed to physical action, may also be useful for better discriminating the role of attention in coordination. For example, in this study, while verbally accepting someone's contribution was coded as other-focused (e.g. saying "Yeah, that's good"), it may have been communicated while the speaker was looking down at him/herself (self-focused). Separating out the demonstration of self- and other-focus in speech as opposed to action may possibly demonstrate stronger associations between attention and coordination quality. Additionally, the transcripts and video records can be examined for the role of other behaviorally-evidenced elements of group

cognition, such as verbal repetition of contributions to the song, which reflects the rehearsal process of working memory (Baddeley, 2003).

In addition to revisiting the present data, future research can also involve reformulating the study design to test the interactional effects of attentional focus and interdependence level on coordination quality. This allows for a range of study designs, in which attention, and goal, or reward, or task interdependencies can be varied across experimental groups. Self-focus may actually be effective in cases of low goal, reward, and task interdependence, while a focus on both the self and other might very well be detrimental in such cases. The impact of clashes between attention and interdependence level may elicit behavioral, social, and task consequences not yet detailed in the current literature. Furthermore, in order to better test the incremental validity of focusing on individual-level attentional focus, in comparison to measures group-level mindfulness, such measures need to be included in future studies. Participants can complete questionnaires about the degree to which they felt that the group as a whole mindfully organized its actions (Vogus & Sutcliffe, 2007). This measure of perceptions of the group's mindfulness can be compared with behavioral measures of individuals' mindfulness to assess which approach better predicts coordination quality.

Conclusions

This study presents a unique approach to examining the coordination quality of work groups. Examining behavioral measures of individual-level attention and responsiveness revealed moderate, but significant associations with coordination quality, as well as associations with the sense or feeling of the group working as a unit. Although many questions about what influences coordination still remain for scholars to consider,

this study presents an important, preliminary examination of how basic cognitive functions experienced at the individual level shape the performance of coordination by a group. Future work should continue to consider the linkages between individual-level cognition, feeling, and action, and the functioning of the group as a whole.

CHAPTER 3

THE EXPERIENCE OF INDIVIDUALS IN A COLLECTIVE COORDINATING FOR BEAUTY (SINGING THROUGH FEELING AND FOCUS)

Introduction

It's sublime. It is a spiritual connection with the Universe, or something, where you just know that everybody is absolutely on the same wavelength…you feel like your mind is merged, your spirit, your love, your whole being is part and parcel of something bigger than any individual… you can hear it, feel it, taste it, and it – you rise. It's so inspiring that, you know, that you are just swept up by it, and you say, oh, this is amazing! It's happening, you know… - Bass

…if you make a blunder or you come in where you're not supposed to accidentally or you—any number of things—I think for me that's the moment where I go back into my own head instead of having taken myself out of the experience and enjoying the bigger picture, I go back into my own head … - Soprano

In attending a performance of the University Chorus at Detroit's Orchestra Hall,

surrounded by gilt finials and red velvet-cushioned seats, a sense of order and structure

pervades the air. The sight of orchestral and choral performers dressed in gowns and

tuxedos, closely attending to their musical scores and the conductor, further evidences

this sense of stricture and constraint. This, it seems, is the stuff of beautiful performances.

Yet, if you were to stand with the chorus, simultaneously contributing to and transported

by the swell of sound, you might have a different sense of all that is involved in this

experience of beauty. A glimpse into this world of collective, performative coordination,

and the extensive practice that occurs before performers go on stage reveals the rich,

sensual nature of this experience. As you hold your score up so that you can

simultaneously follow your lines, look at the conductor, and avoid hitting the head of person in the row beneath, you might begin to appreciate how performing as a choir complicates notions of coordination, attention, feeling, and the use of the body in organizational endeavors. Specifically, in exploring the lived experience of individuals performing beauty as a collective, we can observe a richer account of the experience of coordination, one that may be felt less acutely, but is nonetheless still experienced outside the world of musical performance.

This choral performance is uniquely relevant to organizational scholars. First, it is an organizational performance, involving the interrelation of sounds across divisions of labor in some meaningful way (Weick, 1979). Sopranos, altos, tenors, and basses all coordinate with each other within and across their unique vocal contributions, but each singer's efforts are also intertwined with the gestures, facial expressions, and verbal directives of the conductor. In addition to relating to others, individuals coordinating in the University Chorus also apprehend the entirety of the musical work, and the collective whole of a group, rather than distinct elements, at work. This is in contrast to large, formal work organizations where individuals typically remain unaware of the whole to which they contribute.

What is also unique about this context is that it is one in which beauty is the performance itself. In striving to perform beauty, choir members determine the quality of coordination in terms of "Is that the most beautiful I can sound as an individual singer, and that we can sound as a group?" Unlike most of the formal work contexts organizational scholars examine, the choral context is explicit and deliberate in shaping and evaluating coordination in terms of beauty. The choir thus brings this aesthetic

quality to center stage in coordination theory and practice. In the following ethnographic account, I attempt to describe what individuals experience across variations in coordination quality, and how experiencing these as variations in beauty adds to our understandings about coordination.

Recent work on coordination has advanced our understandings from how managers can structure the relationships between organizational parts (e.g. Lawrence & Lorsch, 1967; Thompson, 1967), to how people think about their relationships with others at work (e.g. Dougherty, 1992); act out thoughts about these relationships (Weick & Roberts, 1993); and communicate in the relationships they share at work (Hoffer Gittell, 2002; Hargadon & Bechky, 2006; Quinn & Dutton, 2005). While outlining the relational and interactive nature of coordination has been a necessary scholarly focus, this still ultimately privileges the parts that comprise coordination, while only hinting at the enactment of a "whole." The emergence of a new form that occurs through collective organizational efforts, e.g. a new innovation, or a symphonic performance (Fleck, 1979), is necessarily comprised of these relational activities, but it is a combination, a set of patterned interactions, a unique whole that is qualitatively different from the individuals, and the relationships they enact.

This emergent, whole form is audibly materialized in the two hundred voices of the University Chorus sounding as one. Previous accounts of coordination would explain such performance in terms of individuals acting in a way that was mindful of being in relation with others (e.g. Weick & Roberts, 1993)[3]. However, beyond this particularistic perspective of coordination (of individuals relating to each other, and attending to both

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[3] In many ways, the choir's focus on error-free performance in its pursuit of beauty is actually akin to that observed in high-reliability organizations, such as aircraft carriers.

self and other), how are we to consider the experience of the form of the whole? Given

that the choir performs beauty, the role of aesthetics (from the Greek *aisthetikos*, or "felt

things"), and thus feeling, must be taken into account. As described by Sandelands and

Buckner (1989), work, and particularly work as art, is distinguished by its felt form.

Feeling is manifested in ongoing work activity, and is unique to the form of the work

(Sandelands, 1988) – one can easily imagine that singing by oneself *feels* dramatically

different from singing with two hundred other souls. The present research investigates the

characteristics of the feeling of performing as a whole, and its association with the

qualities of beauty and the interrelation of actions.

In this chapter, I present the results of an ethnographic study of a large adult

community choir to elaborate on our current understandings of how coordination is

experienced, especially when the coordination produces a beautiful whole. First, I discuss

how the literature on coordination in collective performance suggests the importance of

mind in relationships, but falls short of describing the feelings that accompany

coordination. Based on this literature, I suggest attention and feeling as orienting

characteristics of the experience of coordination. I then describe the context of choral

performance, and how it problematizes attention and implicates feeling. Data from

interviews and fieldnotes are presented as moments of extreme variation from

experiencing beauty to contrasting moments of poor quality. I go on to discuss how the

characteristics of these moments enrich our current notions about coordination, pose even

further unanswered questions, and suggest some avenues for further research.

THE EXPERIENCE OF COORDINATION IN COLLECTIVES

Coordination has always been of central concern to organizational scholars

(Barnard, 1968; March & Simon, 1958; Thompson, 1967; Weick, 1979). Since the

development of the perspective of organizations as open systems (Katz & Kahn, 1966;

Thompson, 1967), scholars have considered how the efforts of differentiated functions,

departments, or organizational units can be best integrated as an organizational whole

(e.g. Lawrence & Lorsch, 1967; 1976). Consequently, coordination has been defined as

the management of interdependencies (Malone & Crowston, 1994). This definition

implies that while coordination occurs through the relationships between various actions,

such relationships have to be directed or "managed" in particular ways. This focus on

designing and structuring actions while removed from the task itself has been a powerful

and important influence for our field, suggesting various contingencies that determine the

form of coordination such as the quality of uncertainty and interdependence (Thompson,

1967; Van de Ven, Delbecq, & Koenig, 1976).

More recent views of coordination, however, focus less on how coordination is

achieved through specific managerial choices, and more on the relational, interdependent

experience between individuals. This focus on how coordination is enacted by individuals

opens up the dynamic, cognitive, affective, and practice-based elements of organizational

coordination. Yet, the focus on the various relational practices that facilitate coordination

leaves unconsidered how the accomplishment of the collective is experienced. Very little

has been said about the phenomenal, or felt, experience of collectively-accomplished

beautiful performances. While considering the role of mind might be useful for

understanding *how* people coordinate, the feelings of coordination are perhaps key to understanding *why* people coordinate and what they are experiencing that encourages them to sustain coordination. A brief review of a selection of this research will demonstrate how its focus on relationships leaves us with a particularly key insight about attention in relationships, but that the phenomenon of collective accomplishment for which coordination is undertaken (and its attendant feelings) remains unexplored.

Recent theories about coordination have focused on both mind and action, and their involvement in the relationships between individuals. Despite greatly enriching our notions of coordination, this theorizing neglects the feeling of the whole at work. Weick and Roberts (1993) for example, describe how individuals interrelate their actions while being mindful of the greater system or collective in which they work. Although some sense of the whole or "system" is suggested, what this sense feels like and its association with coordination quality is not discussed. Weick (1993) provides a stronger account of such feeling in his analysis of the dissolution of a wildland firefighting unit in the face of a disastrous fire. Mind, heed, attention, and "noticing" are all cited as elements of the group's ability to work together, but so too is the leader's "presumption" or feeling of a group, even when his followers were scattering about him (p. 638). The relationships holding the group together as a whole were not based simply on propinquity, but on a sense of being together as a unit. Yet, rather than explore this sense, or "presumption," Weick focuses on the sensemaking processes of highly-reliable and resilient organizations to explain the group's demise.

While Weick does seem to hint at both a sense of the whole, as well as mindful interrelation in his work, other theorists have considered the question of feeling more

explicitly. Quinn and Dutton (2005), for example, suggest that the energy – or positive affective arousal – that drives people to relate their actions to particular people in particular tasks stems from the conversations people share. How we talk to each other at work can make us feel more or less like we are capable of contributing to an organizational whole; this influences our feelings and resultant actions concerning our work and our co-workers. The role of relationships in coordination and the possibility of mindfully engaging these relationships through talk are apparent. However, while the authors explain the forms of conversation in which energy is aroused and depleted, and the consequences of such variation in individual energy, they introduce, but do not elaborate on the form of the energy itself, observed as physiological changes and subjective feelings. These feelings and embodied responses form the sense of the coordination of the collective, yet they remain unexamined for their own sake.

Other scholarly accounts similarly focus on the practices that facilitate coordination, with little consideration for its attendant phenomenology. In highlighting the importance of relationships for the communication, helping, and knowledge-sharing necessary for coordination, Hoffer Gittell (2001; 2002) presents rich stories about the work of coordination, and how it is achieved. While these processes are undoubtedly important, the sense of a whole at work, suggested in, but not made the subject of other discussions of coordination, is not included. Likewise, defining and describing the kinds of interactions that help individuals collectively coordinate creative ideas add to what we know about how innovations emerge in organizations (Hargadon & Bechky, 2006). Interaction partners can experience a sense of recognition about the shared, collective nature of their knowledge, contributions and experiences. However, little is said about the

feelings that coincide with mindfully engaging in such interactions, or about their importance. While these accounts importantly address the role of relationships in coordination, considering feeling as well as mindfulness can only add to our current understandings about how actions are interrelated to produce a whole.

Sensing Coordination: Seeing Beauty in Work

Nowhere else is the place of feeling in coordination, alongside the mindful interrelation of action, made more apparent than in the beautiful performance of a musical ensemble like the University Chorus. Given the neglect of feeling and sensing in the mainstream organizational literature, I devote this section to describing what understanding feeling, in addition to mind, might contribute to coordination theory. Because, as described above, aesthetics refers to "things felt," in order to better address the role of feeling in coordination I turn to the small, yet powerful, literature on organizational aesthetics. According to scholars in this field, considering the role of aesthetics in work can potentially transform understandings about how we coordinate. Based on these ideas about the importance of aesthetics for organizations, I then describe the aesthetic form known as beauty, and suggest that this is the ultimate aesthetic or feeling of coordination.

Aesthetics and work. Aesthetics might be less of a focus for coordination scholars since feelings remain at the tacit level of knowledge. Such knowledge is difficult for organizational actors to articulate, and challenging for scholars to make explicit (Taylor, 2002). Indeed, once such knowledge is put into a readily communicable form, it loses its original, tacit quality, becoming only a shadow of its referent (Taylor & Hansen, 2005). Yet, it is because feeling is difficult to pin down that an aesthetic inquiry addresses the

"less understood spaces" in organizations (Taylor & Hansen, 2005, p. 1226). Aesthetics has typically been the purview of philosophers, and they appear to agree that since we first encounter reality through our senses (Gagliardi, 1996), "aesthetic experience is the basis of all experience" (Taylor, 2002, p. 831). If we consider all that can be possibly apprehended by our senses in an organization or in an organizational process such as coordination, then we can better consider the range of interconnections amongst organizational elements (Strati & Guillet de Montoux, 2002), as well as the diverse affordances that these elements and processes create for the work of the organization (Strati, 1992). If this is indeed the case, then an important means of human understanding and knowledge in the process of coordination has been neglected in coordination theory, especially when we consider that we all "know" by feeling (Sandelands, 1998). Individuals involved in coordination thus well understand what they do as much through feeling, as they do through attention, heed, and mind.

While a small number of scholars have explicitly considered the role of aesthetics in organizations, another subset of scholars has considered various art forms and their performance in order to elicit better understandings about processes such as improvisation (e.g. Barrett, 1998; Hatch, 1999); group adaptation (Allemendinger & Hackman, 2003); and group dynamics (Hackman, 1990; Murnighan & Conlon, 1991). All these accounts make the senses central, as found in the sensuality of musical performance (e.g. Eisenberg, 1990; Hatch, 1999). The audible and visible aesthetics of performing arts such as jazz improvisation and orchestra performance are used to directly draw us into the experience of work, and the qualities of performing that work. Jazz improvisation, for example, involves a tension between the unity of the ensemble sound

and the diversity of the various instruments' contributions to that sound. Describing the experience of performing jazz helps readers to visualize a process whereby organizations can support diverse contributions all aimed at a common goal (Hatch, 1999). When such a process is performed well, listeners appreciate it as beautiful, described as an aesthetic or feeling of unified variety (Bell, 1913; Berlyne, 1971). Since even non-expert listeners can tell whether something like a jazz performance is beautiful or not (Janata et al., 2002), the universal appreciation of the aesthetics of organizational processes in general, and the perception of beauty in musical performance in particular, suggests that this aesthetic deserves further consideration.

Beauty as the aesthetic of organizing. Since aesthetics comprises any sensory experience, it incorporates many felt forms regardless of their valence, such as ugliness, tragedy, and grotesqueness (Strati & Guillet de Montoux, 2002). Beauty is but one of these felt forms (cf. Ramirez, 1996; White, 1996). Because beauty is an explicit element of the coordination of the choir, some discussion of aesthetics in general has been necessary, but a specific focus on beauty is also warranted because it brings to life the notions left implicit in the coordination literature. Beauty is defined in terms of "a combination of qualities…that pleases the aesthetic senses…[and] the intellect or moral sense;" as with coordination, beauty is at once concerned with individual qualities, as well as their unique combination (Oxford American Dictionary, 2005). While a choir might produce a technically accurate sound, with the requisite whole rests, rather than half rests, and eighth notes, rather than quarter notes, such a performance might still not be described as "beautiful." When beauty enters into the equation, a concern for the quality of each element, the relationship between these elements and the emergent whole

are all simultaneously taken into account. Beauty may be understood as a meta-coordinative phenomenon, as the feeling or sense, rather than the objective knowing, of what is an aesthetically pleasing combination, set, or Gestalt of elements and their interrelation.

The concept of beauty provides two main contributions to coordination theory. First, by its very definition, beauty gives precedence to a Gestalt or whole, rather than the particularistic elements, or even the relationships between these elements. The performative or presentational quality of art forms such as music-making evoke a sense of belonging to something larger than any individual element. As Ramirez (1996) describes, "there is no 'meaning' in a single note in a symphony, nor to a color in a painting by Cezanne" (p. 236). Rather, beauty in art reveals how individual notes, colors, and organizational actors are expressed as simultaneously individual and part of a whole (Sandelands, 1998).

Acknowledging the importance of the whole is important for our understandings about coordination. Organizing is itself described as interrelating actions for some meaningful purpose (Weick, 1979). As suggested via numerous examples by Heath and Staudenmayer (2000), coordination breaks down when organizational actors neglect the whole to which they contribute. Coordination theorists, too, have seemed to focus on the "interrelating of actions" to the neglect of the "purpose" or the whole product or process being engaged by these interrelated actions. Feeling and aesthetics are important for understanding this whole since it is aesthetic experiences and forms like beauty that involve feelings of being part of a group or system, and thus of coordinating with others; other forms of knowing are usually limited in their abstraction from the lived experience

of organizations (Taylor & Hansen, 2005). At a fundamental level, while practitioners and scholars may not typically describe beauty in organizational endeavors, both care about whether or not various elements and processes work together well, and produce pleasing, meaningful outcomes.

In addition to bringing the meaningfulness of the whole front and center, the concept of beauty makes a second contribution to coordination theory by suggesting why people coordinate, and in turn desire to sustain their efforts to coordinate. Aesthetic experience involves a disinterest in the ends or purpose of the experience (Kant, 1790; Peterson & Seligman, 2004; Sandelands & Buckner, 1989). Considering the aesthetics of coordination thus suggests that people might coordinate in particular ways for their own sake, rather than for instrumental purposes. Beauty is an important aesthetic in considering why people coordinate and desire to sustain coordinative efforts because it not only points to the holistic purpose of coordination, but also serves as an intrinsic motivator. People are drawn to beauty for its own sake and repulsed by what they consider to be ugly (Dean et al., 1997). Notions of beauty derived from the philosopher Plato also suggest that we experience beauty in something through apprehending its unique, pleasurable connection with our senses, minds, and purposes (Ladkin, 2008). Accomplishing the whole through coordination can be seen as inherently desirable because it is inherently meaningful to us, and thus beautiful.

In drawing parallels between the aesthetic experience of coordination and the experience of art (and in the choir there is no such distinction), one might suggest that coordination is beautiful when it meets our motivations to belong with others, to make meaning with others, and to feel competent through making and elaborating those

meanings (Dissanayake, 2000**).** Feeling like one belongs with others is an intrinsic human need (Baumeister & Leary, 1995; McClelland, 1975), and meaning is also intrinsic to work (Hackman & Oldham, 1975; 1976; 1980; Pratt & Ashforth, 2003; Wrzesniewski, Dutton, & Debebe, 2003). Thus, not only can coordination be sought out for its own sake, but maintaining and repairing it in order to feel part of a meaningful and coherent whole also becomes important. The lenses of feeling, aesthetics and beauty make the intrinsically beautiful nature of coordination apparent in a way that only considering the interrelation of individual elements does not, and the use of these concepts helps us see why people might pursue and achieve high-quality coordination, and also seek to remedy poor-quality coordination.

With all work activity possessing its own aesthetic, or felt form (Sandelands & Buckner, 1989), I turn now to the case of the University Chorus as a context that displays the aesthetics of beauty as collective coordination. The work of beautifully coordinating vocal parts to produce a unified sound pulls us more deeply into the dynamism and complexity of the coordination experience (Sandelands, 1988). To that end, in this chapter I aim to use the knowledge of singers in the University Chorus, of which I am also a member, to address the questions of "What is the experience of the individual coordinating as part of a collective?" and "How does this experience vary from moments of beauty (when some "whole" is experienced) to moments when this "whole" feels lost (when performance is less than beautiful)?"

RESEARCH METHODOLOGY

Using Ethnography to see Beauty in Coordination

So far, I have considered how feeling and focus are important aspects of coordination, and now suggest that the ethnographic method is particularly well-suited to answer the research questions about individuals' experiences in the life and work of a group. An ethnography is a written representation of a culture (Van Maanen, 1988). In this case, the culture to be explored is that of the University Chorus, a community of singers for whom coordinating sounds in order to make beautiful music is a central concern. What these community members do, feel, think and hold as meaningful, as they coordinate to create beauty in a setting where this normally and naturally occurs, is thus the focus of this ethnographic, naturalistic enquiry (Bloor & Wood, 2006). The exploration of social phenomena in ethnography is usually limited to a small number of cases, or just one, providing rich details or "thick" descriptions (Geertz, 1973) as evidence, rather than testing hypotheses across a number of generalizable cases (Atkinson & Hammersley, 1994).

Qualitative research encompasses many methodologies. While I have described how this study fits the mold of an ethnography in a cultural anthropological sense, with its focus on understanding community members' experiences, I would also like to elaborate on how this study may be similar to and different from other forms of qualitative research. First, as will be revealed below, I was a community member prior to undertaking this research, yet this is not (participatory or collaborative) action research (Miles & Huberman, 1994). Action research is usually undertaken by community

members, in partnership with experts or researchers, in order to examine current

community action, create interventions, and then assess the subsequent change in action

(Bartunek & Louis, 1996). In contrast, I was both insider and outsider, and sought to

understand, rather than assess and change, the experiences of community members.

Second, this study does not utilize a grounded theory approach although, as will be

described below, data were inductively generated from fieldnotes and interviews.

Grounded theorizing usually involves an abductive process in which researchers

continuously cycle through data sampling, analysis and theory development in order to

develop theory that adequately explains the phenomena of interest (Glaser & Strauss,

1967). Rather than recant preformed hypotheses about what I might find in order to rely

solely on what my data would theoretically afford me, I used prior theoretical and

empirical discussions of the role of attention and feeling in coordination as lenses to

focus my observations, interview questions, and subsequent data analysis. My use of

grounded theory methods such as open coding, selective coding, and memoing, was

ultimately guided by my assumptions about what might be important in coordinating for

beauty.

While this study does not utilize action research or grounded theory approaches, it

is similar to a cognitive ethnographic case study, an exemplar of which is Edwin

Hutchins' (1995) *Cognition in the Wild*. In the present case, I used ethnographic methods

to explore how attention and feeling are socially and cultural derived. The interplay of

body, cognition, and feeling in the social interactions of the choir were the focus of this

study, much like Hutchin's (1995) examination of the actions, communications, and

thinking of a naval navigation team. I used an "instrumental" case study approach (Stake,

1994) to focus on a theoretically useful and unique instance of the phenomenon of coordination that can elaborate or extend theory about it (Eisenhardt, 1989; 1991).

Ethnographic involvement

I employed ethnographic methods of participant-observation and interviews not simply as a researcher entering an unknown community, but as a singer-member, specifically a baritone, a singer with a higher bass voice. Prior to conducting this research, I had been a singer with the University Chorus for two seasons, and took up my role as ethnographer at the beginning of my third season with the Chorus. I concluded my observations and interviews after two more seasons (2007-2009) and continue to perform with the Chorus. I have never before sung in a large community choir, with my singing experience limited to singing weekly with the congregation at my church, alone at home, and a brief stint in my primary school choir (around age 9 or 10). A fellow graduate student friend suggested that I join the choir, and with her help I prepared for the audition in September 2005. Despite my lack of previous experience and limited sight-reading ability, I was accepted into the University Chorus. I cite my personal experiences here to not only define my relationship with other choir members, but also my relationship with the context itself. Despite developing some expertise after four seasons with the choir, I still recall and experience (to a lesser extent) the challenges of singing in a choir – simultaneously attending to the directions of the conductor, the words and pronunciation of the text, the physical position of my score, the tone and pitch of my voice, the tone and pitch of others' voices, and doing all of this every week. I also recall, and still experience the attendant feelings of wonder, excitement and communion with my fellow singers as we perform beautiful music with various orchestras and conductors. My position as

researcher is thus one of an insider to the cognitive and phenomenal experiences of choir members in the process of coordination.

Prior organizational research has treated the issue of "insider" versus "outsider" research. Insiders are the people whose immediate social world is being studied, and who develop knowledge in the process of acting and surviving in this world. Outsiders, on the other hand are concerned with acquiring knowledge for its own sake, and their own immediate, personally relevant social world is not under investigation (Bartunek & Louis, 1996; Evered & Louis, 1981). In contrast to other organizational psychologists, I am an insider to the world of the choir who is seeking to survive and cope as a choral singer. Relative to choir members, however, I am also an outside researcher interested in relating insights about the experience of coordination in choirs to other researchers. Having the conductor/director on the dissertation committee gives me much-needed access to expert information, but further blurs the lines between the researcher and the researched. My perspective thus lies at the intersection of the contrasting perspectives of insider and outsider (Bartunek & Louis, 1996).

This uniquely marginal perspective is highlighted in order to point out the challenges and advantages to conducting research in the choir from this position. Linking the perspectives of insider and outsider aids in creating a more robust picture of the phenomenon and situation under study (Bartunek & Louis, 1996). For example, through his direct involvement as a Ford Motor Company employee, Gioia (1992) was able to account for the influence of cognitive schemas on the activities that allowed the Pinto car fires to occur even after initial complaints. Similarly, as an outsider, my questions and theoretical framings can make explicit my insider's assumptions, language and cognitive

frames (and vice versa; Bartunek & Louis, 1996). While the occurrence of this marginal stance within an individual (myself), rather than between separate outsiders and insiders was challenging, it allowed for constant reassessment of the relationship between my experiences as a choral singer and the precepts of my theoretical treatise. It is within such a relationship that I utilized the methods of participant observation and interviewing to gather data on the experience of coordinating for beauty.

Methods

Ethnographic methods, which involve participant-observation, recording fieldnotes, and conducting interviews, are meant to develop intimate familiarity with another culture, usually through entering the routine of the people under study for an extended period of time (Jones, 1985). These methods constitute "fieldwork," in which I report and analyze observations not as a stranger, but as an ingroup member of the choir (Hughes, 1971). In order to engage in participant observation and interviewing, researchers typically face the problem of gaining entrée. Fortunately, my insider status and relationship with the conductor (and to some extent the fact that the choir operates within the context of a research institution) granted me access to choir members and the director, as well as their cooperation with my research.

Participant-observation. As a member of the University Chorus, I attended all rehearsals (two and a half hours every Monday night during the school year), all dress rehearsals prior to a performance, and all public performances/concerts throughout the season (September – May). Across the two seasons with which this study is concerned, this amounted to approximately 211 hours of singing (in rehearsals and performance) and 22 hours of travelling to concerts in Detroit. I also attended functions that involved the

choir, but occurred outside the normal season, such as the "Summer Sings" program during July 2007 and 2008. In all of these events, I was both participant and observer, attending to actions, possible meanings, relationships and the setting (Jones, 1985). While, for the most part I focused on performing as a fellow singer to the best of my abilities, I did my best to fully interact with others in the situation and, if possible, I made brief jottings (usually in my score) about my observations. After each rehearsal, performance or other activity, I expanded my jottings to create fieldnotes in the form of Microsoft Word documents. These notes were written descriptions of my experiences and observations while being an intensely involved participant (Emerson, Fretz, & Shaw, 1995). With my field notes, I attempted to record concrete, exhaustive descriptions of all aspects of rehearsals and performances, no matter how insubstantial or irrelevant they may seem (Emerson, Fretz, & Shaw, 1995; Jones, 1985). These efforts amounted to a little over 250 pages of fieldnotes. These fieldnotes are a rich account of my own and others' experiences and observations, which can be compared and contrasted with the content of interviews.

Journal notes. Music is influenced by, and facilitates memory (Bigan & Poulin-Charronat, 2006; Palmer, 1997; Peretz, 2006); coupled with the opportunity for reflection, the experience of Chorus events affected my experience outside formal rehearsals and performances. Thus, I recorded a small number of journal accounts as a complement to my extensive fieldnotes. In these notes, I took account of my personal experiences, thoughts and feelings about how my involvement with the Chorus was influencing my life outside of singing and how my research interests might have influenced my experience in the Chorus. These notes were recorded either directly as

Microsoft Word documents or as jottings which were then expanded into computer documents.

(Group) Interviews. The development of interview questions was guided by theoretical considerations and my own preliminary experience in the choir. An initial set of questions was drafted with some advice from my advisor, Jane Dutton, and then two pilot interviews were conducted with members of the choir. While one interview was in an informal group setting, the other took the form of a one-on-one conversation with my office mate, who initially introduced me to the Chorus. After gauging what kinds of questions and wordings elicited the richest responses (and directly asking for feedback from respondents), I revised my interview schedule and further consulted with the choir's conductor/director, who gave suggestions in terms of the wording of questions and other topics that might be meaningful to singers. In the end, my questions addressed my research questions about attention and feeling in coordination, as well as issues that seemed to readily elicit responses from participants (e.g. experiences with conductors, feelings of making beautiful music). Further questions were developed for those with unique roles in the Chorus, viz. the conductor/director, the accompanist, and the manager. Conducting interviews *as a fellow participant* not only helped me better interpret participants' answers to questions, but also held me accountable to them, allowed me to appreciate and respect their perspective more and gave me an advantage in relating to the interviewees (Rubin & Rubin, 1995).

Interviews were open-ended and semi-structured, i.e. specific questions were used depending on the responses given (See Appendix H). "Grand tour" questions were used to elicit lengthy, detailed responses from interviewees without the imposition of my own

language and concepts (Spradley, 1979). Such questions included "Can you tell me, with as much detail as possible, what exactly is going on while the choir is singing? What are you doing, and what are the other people around you doing? What are you thinking and feeling?" In order to preempt any limiting of details due to an assumption about my own familiarity with such experiences, I included the stem of "Let's pretend that I am a perfect stranger, who has never sung in a choir before" in my initial grand tour question. These grand tour questions were followed by "experience" questions" (Spradley, 1979) about interviewees' experiences in times when coordination seemed to go well and when it seemed to be of poor quality. Unanticipated themes that seemed meaningful to singers and interesting from a research perspective, e.g. how the rehearsal process changes over time, were validated by the inclusion of new questions in subsequent interviews. "Structural questions" (Spradley, 1979) were used to probe other singers about their own perceptions of how rehearsals changed over time to see if these were important elements of the experience for many singers, or just a few. The complete interview schedule is presented in Appendix G.

Thirty-five individuals (including the conductor/director, accompanist and singer-manager), or approximately one-fifth of the choir's membership, were interviewed in this way. Two of these interviews were conducted over the phone, and seven of these interviews were conducted with pairs of singers. Interviews lasted between one and a half and three hours. In these paired, or focus group interviews, I directed my inquiry and the interaction between interviewees in order to purposefully understand how cognition and feeling are involved in experiencing coordination (Fontana & Frey, 1994). Using a group interview allowed me to directly record observations of interactions between participants

(which may not be possible in the intense personal involvement of participant-observation) in which the socially-derived experiences and attitudes about singing in a choir are made explicit (which may be difficult to achieve in individual interviews; (Morgan & Spanish, 1984)). The goal of these interviews was to create a context similar to the choir, in which experiences are contingent on being part of a group; in the group interviews, opinions bounced back and forth rather than being solely defined by one individual (Frey & Fontana, 1991). These paired interviews provided detailed insight into participants' perspectives, clarifying observations made as a participant (Morgan, 1997). In all interviews consent was requested and granted at the interview site, notes were jotted down during the interview, and responses were audio-recorded for transcription. All interviews were recorded on an Apple iBook G4 laptop, using the Microsoft Word for the Mac 2004 Notebook document feature, which was also supplemented by a digital voice recorder (Olympus VN-480PC) and handwritten notes.

Sampling and recruitment. In order to capture the multiple perspectives of a variety of individuals, stratified, maximum variation sampling was used, in which particular ranges of individuals were purposefully selected (Onwuegbuzie & Leech, 2007). On the one hand, singers were allowed to self-select themselves for interviews, signing up at rehearsals, or requesting informally that they be considered for an interview. On the other hand, I selected or limited the use of certain singers based on the number of interviewees who already met certain characteristics. I also personally requested interviews with those in special roles, such as the conductor/director, accompanist, and chorus manager. I attempted to gain a sample that was balanced in terms of vocal part membership, overall singing experience, and tenure with the choir.

This balance was only partially obtained due to imbalances in the size of vocal parts (e.g. more altos than sopranos), overall singing experience (most singers have more than five years of experience, so complete novices like myself are limited in number), and willingness to be interviewed.

Given these imbalances in sampling, and scheduling constraints, my initial intent to conduct all interviews in maximally-varied pairs proved challenging to accomplish. While maximum variation across my entire sample was feasible, actually pairing maximally-varied people did not prove beneficial to setting up a productive exchange. An early interview in which the pair differed in terms of age, gender, vocal part, and amount of choral experience did not seem to go as well (in terms of energy, length of responses, variation of responses). Subsequent paired interviews were scheduled for singers who were similar along one or two dimensions, and these proved to be much more effusive and rewarding in terms of the quality of the responses elicited (see Table 2.1 for a breakdown of the demographics of interviewees).

Further recruitment efforts stopped after about eight months of interviewing, when I felt that theoretical saturation had occurred. Such saturation occurs when the information being acquired in new data collection efforts (interviews and observations) adds little to what the researcher already knows (Glaser & Strauss, 1967). In the review of my interview notes, and in discussions with my advisor, I realized that interviewees seemed to be providing very similar stories about their experiences in coordination in comparison to prior singers. I thus concluded my formal interviewing activities and turned towards data analysis.

Data analysis procedures. Analytic procedures were borrowed from a range of qualitative methods. While a grounded theory approach did not guide all aspects of this study, some analytic features were employed, such as iteratively searching interview and fieldnote data for themes, creating memos and organizing these themes into a coherent conceptual framework. Ideally, as prescribed by grounded theory methodologists (Glaser & Strauss, 1967; Miles & Huberman, 1994), one would regularly search for themes and draft brief memos as new fieldnotes are recorded and interviews are conducted. However, such analysis did not occur either due to the frequency and intensity of data collection efforts (e.g. note-taking after each of six consecutive rehearsals in a performance week), or a lack of clarity about what points of comparison to consider across interviews, rehearsals, and performances. While I did not formally engage in deep, ongoing analysis as data accreted over two seasons, I participated in conversations with singers and my academic advisors, as well as presentations in academic settings that served as critical time points for reflection, questioning, and modification of initial perspectives. In weekly meetings and conversations with my fellow singers and advisors, I relayed my preliminary observations and feelings about my experiences and responded to probing questions about these experiences, which guided my focus in future observations and questioning in subsequent interviews. In the several presentations I gave (five conferences, one on-campus research group, and a class project), I gathered preliminary themes from my fieldnotes and observations and faced questioning and critiques that provoked new ways of thinking about my data. While not ideal (and sometimes painful), these experiences were key instances of preliminary data analysis.

In conducting more rigorous analysis of my data at the end of data collection, I used a variety of techniques. In general, I conducted most of the interpretation on my own. I first crafted a dramaturgical analysis of the choral context, in order to outline the key components of the context (Burke, 1969). In this analysis, I described the key interaction site for University Chorus members, the weekly rehearsal, in terms of the scene (location and physical space), the act (what is done), the agents (actors and roles), agency (means of acting), and purpose (reasons or motives for actions). This analysis forms the core of the description of the rehearsal context found in the following sections.

Following this descriptive analysis, I engaged in inductive analysis of my interview data using NVivo8, a qualitative data analysis software program that allows one to generate and apply codes to text and then meaningfully organize and observe relationships amongst these codes. After eliciting codes in a line-by-line analysis of each interview, I conducted a more focused thematic analysis of specific interview segments, viz. the sets of questions concerned with experiences of beautiful and poor-quality moments. Focusing on these segments helped bound my analysis, since the interviews also included a number of questions that captured many more aspects of the life of a choral singer, e.g. "How are your experiences with previous choir directors similar and/or different from those with (the Chorus' present conductor/director)?" Memos were composed that described and presented preliminary analyses of the themes that emerged from accounts of these particular interview segments (Miles & Huberman, 1994).

Dominant themes included the most commonly occurring topics mentioned across responses to particular questions. Specifically, I limited my analysis to those questions that were concerned with feeling and focus in beautiful and poor-quality moments. These

themes are more abstract categories that subsume the codes generated in open coding of the interview responses. While grounded from the data, themes were considered in terms of their relationship with the theoretical concerns of how attention and feeling are experienced in the process of coordinating for beauty. Some themes appeared to have limited or contradictory support as analysis continued, such as the theme of temporality, in which participants described lengthy and short durations of beautiful and poor-quality moments. Such a theme was dropped from analysis, given the lack of clarity around its inherent qualities. Prior considerations of my observations in data collection and the codes elicited in the general coding of the complete interviews informed the identification of themes and the relationships between them. After developing a broad sketch of the elements of the experience of beautiful and poor-quality moments, I returned to the initial theoretical framework presented in the Introduction, to examine the fit between these elements and the framework, and thus how these elements provided alternative considerations of the theoretical framework.

Making primary use of the interview data to uncover what people experience as they coordinate for beauty, and to determine just how attention and feeling are manifest in these experiences, gives precedence to community members' understandings and meanings about what they do as they sing. My own experiences, captured in extensive fieldnotes, were of secondary consideration as I aimed to report the general experience of members of this chorus. After considering the themes that emerged in interview responses, the fieldnotes served as a useful triangulation source to corroborate or dispute what others report, rather than the primary account. Given the differences I held with the general profile of a University Chorus member, in terms of choral singing experience (I

had almost none), musical expertise (I was unable to sight-read), age (I am at least ten years younger than the average choir member), race (I am of African descent), and national culture (although familiar with American culture, I am still Trinidadian, with different musical tastes), my own experience may have been particularly unique. My initial observations as a novice choral singer did point to how attention is problematized in the choral setting, and the powerful role of feeling as one experiences and creates beauty. However, while my personal account is useful in terms of noting how the experience of attention and feeling changes as one gains expertise over time, it may be a rather singular account in comparison to the general Chorus member's experience.

Member-checking. The multiple instances of casual inquiry with my fellow singers and the conductor throughout the participant-observer period were used as brief member-checks. Member-checking is defined as the relaying of observations and interpretations from researcher to the researched (or the "members" of the group under study) in order to assess the validity of the researcher's perspective (Lincoln & Guba, 1985). In addition to discussing what I thought about what I was observing (usually in response to fellow singers' direct inquiries), at the end of the study and after drafting this chapter, I conducted a more formal check in the form of a presentation to the Chorus. This consisted of a thirty-minute meeting with Chorus members in the rehearsal room prior to rehearsal. A Microsoft PowerPoint presentation was used to convey the general theory, method and final interpretations I had used and developed in the study, and most Chorus members seemed to be in attendance or at least be present for the discussion of my findings.

The usefulness of member-checking has received mixed support from qualitative researchers. In the end, we cannot simply assume that the checkers or members are the ones with the ultimate truth, and the researcher is incorrect when interpretations are called into question (Lincoln & Guba, 1985). Such an assumption not only masks the dialogic nature of the researcher and researched learning from each other, but it also constrains the researcher in his or her ability to contribute to theory if interpretations are re-shaped to meet the specifications of each member's disagreement or concern (Morse et al., 2002). With this study, however, members present at the formal member-check indicated their agreement with my interpretations at the presentation, during the rehearsal and in emails after rehearsal. Chorus members also raised several questions that I had not formerly considered. I found in answering these questions that the model developed from these data adequately accounted for the range of elements involved in the Chorus' coordination. Some of these questions and their responses are described in the Discussion section.

Summary. In sum, ethnographic methods of participant-observation, fieldnote recording, and qualitative interviewing were used to gather rich, particularized data that were then used to account for how attention and feeling were experienced in moments of beauty and moments of poor-quality. In these moments of varying quality, coordination, or the lack thereof, was of primary concern given the central task of this community of singers, viz. to produce beautiful music as a group. Given this unique quality, developing an ethnographic case study of the University Chorus presents a unique, and extreme example of coordination in which the demands for creating beauty elaborate and extend our notions of what comprises coordination. In the following sections, I first provide a

sketch of what occurs in the interactions amongst singers and conductors in the rehearsal and performance settings. I then present two types of moments, beautiful and poor-quality moments, and use ethnographic evidence to elaborate on what is involved in experiencing these extremes of quality in the coordination of the choir. After describing these types of moments, I outline a model of how coordination is performed based on these descriptions. I then return to the theoretical accounts of coordination introduced at the beginning of this chapter, and consider the linkages and differences between what people experience in the choir and what we as organizational scholars have so far considered about coordination.

COORDINATING FOR BEAUTY IN THE UNIVERSITY CHORUS

The University Chorus presents a unique case of coordination. It is a large adult community choir numbering between 160-180 members whose repertoire is mainly comprised of Western classical religious works (e.g. Verdi's *Requiem* and Handel's *Messiah*). It is polyphonic, with four vocal sections: sopranos (59 at beginning of study), usually female singers with the highest range of voices); altos (66 at beginning of study), or singers (usually female) with voices lower than sopranos, but higher than tenors; tenors (26 at beginning of study), who are usually male singers with the highest natural male voice); and basses (43 at beginning of study), who are male singers with the lowest voices. Organizing the sounds of the many members is a complex task, as individual singers' sounds have to be accurate and beautiful, these individual sounds must be suitably blended with the sounds of immediate neighbors and the vocal section, and then the section sound must be harmonized with the sound of all the other sections in order to produce a beautiful choral sound. The number of mechanisms in place to facilitate this

coordination, such as the use of scores, the conductor's gestures, and the accompanist's performance, highlights the importance of coordination in the Chorus (see Table 2.2). The complex, and sometimes intense work of the choir, occurs within a larger context of public arts activities in the United States, but also includes a local context and actors in key roles within the choir that shape how performance is experienced. These considerations are described below since they inform how singers perceive their membership in the choir, and thus what they report in their experiences of beauty and poor-quality moments.

Situating the University Chorus

The University Chorus is one of approximately 12000 professional and community choirs in the United States, and is representative of the most popular public arts activity in the United States (Chorus America, 2009). The University Chorus draws individuals from local and neighboring communities, including neighboring states (Ohio) and countries (Canada). Many of the chorus members are also students or employees of the major University with which the choir is affiliated. The University Chorus is not only a unique case of coordination, but also a positively deviant example of community choir excellence, since it exceeds the expectations one might have of a typical community choir in ways that bring it acclaim (Spreitzer & Sonenshein, 2003; 2004). Prior to my joining the choir, the University Chorus participated with other choirs in a performance and recording that garnered "Best Choral Performance" and "Best Classical Album" amongst the four Grammy Awards it received. The choir also regularly performs with major regional, national and international orchestras.

Motivations to participate in the University Chorus

Such characteristics evoke a variety of feelings in singers desiring to sing in the Chorus. Auditions are available to the public at the beginning of the season, and recur for current singers every two years. Although one ultimately hopes to meld sounds with others, the audition process requires solo singing, leaving one's voice naked and exposed for critique and evaluation. This readily elicits some fear of rejection, even for those with some musical expertise. While some are initially fearful about their chances of gaining entry into such a high-profile choir, others intensely desire to work with the renowned conductor/director and other acclaimed conductors and orchestras. For others, the chance to perform large classical religious works that are familiar and meaningful to them is a welcome opportunity, e.g. "I just love the Messiah…It's nice being able to do the big pieces that you don't get to do in smaller groups" (alto). Some singers express a simple desire to have music be a part of their lives, e.g. "I like my life better with singing" (soprano). For some, choral music is a specific creative outlet that their formal occupations cannot provide, as this alto describes: "I think it literally stimulates something artistic that I don't get from my work… I dry up the creative side of my brain so I have to reenergize, remoisten it with music". Several singers see the Chorus as an opportunity to socialize and meet people that "you would not normally mix with in terms of age and careers" (tenor). Being part of a community of diverse others ("scientists, mathematicians, teachers—all sorts of other people," (alto)) who all commonly desire to have music be a part of their lives is inspiring and encourages singers to participate week after week.

Member characteristics

While chorus members do hail from a variety of professions and possess different motivations for participating, most singers possess some common characteristics. Most singers have some degree of musical expertise (e.g. moderate to high sight-reading capabilities) and have been participating in choirs for a long time. Several singers are themselves school choir directors and music teachers. My interview participants, on average, had been members of the choir for approximately nine years, and had twenty-nine years of choral experience. The average age of my interviewees was forty-three years, although they ranged from ages nineteen to sixty-nine. There are significantly more women than men involved in the choir, and there are only a small number of ethnic minorities in the chorus. Table 2.3 elaborates on the various actors and roles in the Chorus.

The conductor

Apart from the singers, or rather, in conjunction with them, the other major actor in the chorus is the conductor. He (and it is most typically a man in the world of classical music) is a professor of conducting, chair of the conducting department at the local university's School of Music, and the Director of that university's choirs. In addition to performing the various gestures and baton movements we might readily associate with conducting, he also plans each rehearsal, outlining the portions of the music that will be worked on that night. He also develops seating assignments for each week, placing people next to each other based on musical abilities and characteristics (rather than other considerations, such as height). In the case of the Chorus, the conductor is also the musical director, determining the season's repertoire, and working with the Musical

Group and other conductors and orchestras to coordinate the season's schedule.

Typically, he prepares the choir throughout the season to perform in concerts "under the

baton" of other conductors. Affable, highly-skilled, renowned (winner of two Grammy

Awards for the aforementioned recording), efficient, well-prepared, and so far successful

in maintaining positive relationships with most of the diverse group of singers that

comprise the choir, the conductor is highly esteemed by singers and many seek to join the

choir to work with him.

Other musicians

The singers and conductor work together with text and music that is not only

located within their scores, but with the sounds and efforts of several other musicians in

both rehearsals and public performances. In rehearsal, the choir is usually joined by one

of two accompanists who play the piano at practices throughout the season. The

accompanist does his/her best to provide the feel of a full orchestra on a grand piano,

playing various parts of chords[4] for each vocal part to "tune" into. Accompanists must

respond to the conductor's demands on the fly, repeating particular chords, returning to

certain spots in the music, and sounding out specific notes on the piano for the benefit of

singers. In public performance, the accompanist and his/her piano are replaced by the full

suite of instrumentalists in a symphony orchestra. The conductor of that specific

orchestra usually takes over the proceedings of the concert; the chorus is coached by its

conductor/director in the ways of particular maestros[5]. In addition to a new conductor and

set of musicians, public performances also usually involve soloists. These highly-skilled

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[4] A chord is a "group of (typically three or more notes) sounded together as a basis of harmony" (Oxford American Dictionary)

[5] This is the term given to a "distinguished musician, especially a conductor of classical music" (Oxford American Dictionary, 2005), and is used by singers and the Chorus' conductor/director to refer to other conductors.

performers are trained to deliver their own embellished versions of musical works, in contrast to the efforts of the choir, which are constrained by the contents of the score, and the directives of the conductor.

Rehearsals and performances

The singers, conductors, and other musicians all interact with each other at different points across the musical season. As a group, the University Chorus engages in rehearsals every Monday night for two and a half hours for a season that spans the academic year (between September and May). Because several of the members are University students, the choir takes breaks from rehearsals and performances when school is not in session. There are usually four to six performances over the course of the season, and these take place in locations such as Detroit's Orchestra Hall, or Ann Arbor's Hill Auditorium. Usually, two to four months of rehearsals precede a particular concert. During the summer, however, members of the Chorus arrange a three-week singing program in which participants (mostly from the Chorus itself and from the community) pay a small fee to rehearse and perform a musical work in one evening.

Weekly rehearsals form the core of the life of the choir. After a full day of work or school, some singers meet an hour or two before rehearsal to have dinner and catch up on the past week. Others head straight to the large room or auditorium located on the university campus in time for the "downbeat" at seven o'clock (i.e. the time that the conductor takes the rostrum and literally moves his hand or baton down to signal the beginning of warm-up gestures and sounds). The rehearsal space for the past two seasons has been a large, well-lit, rectangular room, with several rows of chairs arranged across its length. These rows are slightly curved, giving the effect of a widely spread out half-

ellipse that opens out towards the conductor's centrally-located rostrum and a piano set against one wall of the room. Singers try to quickly find their seats before the start of rehearsal, getting their scores and pencils ready for that night's rehearsal (see Table 2.4 for more on the materials used in music performance).

Rehearsals usually begin with some sort of warm-up, involving the repeated vocalization of nonsense syllables and vowels by singers, as directed by the conductor. The warm-up exercises typically involve some musical elements that are present in the work being rehearsed, e.g. we practice performing melismas, or strings of notes for one syllable, before we rehearse Handel's *Messiah*, which contains many melismas. Warm-ups might also include reminders about proper physical posturing (e.g. standing on the balls of one's feet) and breathing; there have even been rare occasions, usually at the beginning of a new season, where singers are directed to turn to the side and massage their neighbor's shoulders. In general, warm-ups allow singers to practice making fluid, musical sounds, and to engage their connection with the directives and gestures of the conductor.

The rehearsal itself is intense and deliberate, and the conductor uses various modes of communication to focus on the portions of the music that seem to pose the greatest difficulty to the choir, or to specific vocal sections, rather than general repetition of the entire work. One of the most important communicative tools used by the conductor is gesture (see Table 2.5 for other forms of action and communication in the choir). In addition to the constant movement of his hand or baton, the conductor also uses specific gestures in warm-up and rehearsal that singers are directed to mimic so that they can better match the desired formulation of the sound. For example, the conductor might lift

his hand up to his face, turning his palm perpendicular to his body, with his fingers pointing up. This would indicate to singers that they were to not only perform the same gesture, but to also produce a more "open," and "upward" sound (See Table 2.5). In this way, the conductor induces a collective embodiment of his preferred formulation of the sound through the use of shared gesture (cf. Roth & Lawless, 2002).

Speech is another important mode of communication, as the conductor verbally directs singers toward the specific portion of the music with which to begin. Inscription is also employed, as the entire sequence of such portions is written out on an adjacent whiteboard. Every ten minutes or so, the conductor tells singers to stand and sit periodically. When asked about the intention behind this, the conductor admitted to using the regular physical movement to keep people physically and mentally engaged with the rehearsal process. There are frequent stops and starts to singing as the choir is made to sing, the conductor points out how the sound is lacking in terms of meeting the prescriptions for pitch, pronunciation or volume, and then the choir is made to repeat the sound, hopefully made better by the conductor's correction. At times, the conductor does not halt the singing, but cries out his corrections over the sound; at other times, he stops the singing, actually models the sound he just heard, then the sound he desires, and then has the choir resume singing. Correction also involves directing singers to modify the notation in their scores, or writing out pronunciations on the board. Apart from direct corrections, e.g. "it should be a C sharp, not a C natural," the conductor uses many colorful metaphors to bring to life for singers his vision of the sound, e.g. "think of each note as a string of pearls, each more beautiful than the last." Altos are told to think of themselves as "Russian truck drivers" and to shape their voice accordingly; singers who

have to create dark, sweet sounds are told to make it "richer, more chocolate, more macaroni and cheese." These metaphors are easily understood by a range of people with varying degrees of expertise and familiarity with the repertoire, aiding musical performance.

The rehearsal is usually interrupted for a break after about an hour and a half of singing. As the conductor announces the start and end times of the break, he asks the chorus manager if she has any announcements to make. She usually does, standing at her seat in the alto section, giving reminders about concert details, telling us about other musical events of interest, or updating the community on the status of a fellow singer's health. On occasion, other singers follow her with brief announcements about their upcoming performance in other music ensembles. Break then ensues, with many singers racing to get a drink of water (if they have not brought their own water bottles to sip on during singing) or use the restrooms. Singers congregate in their cliques from across the corners of the room, split up as they were by their vocal parts and seating assignments. Although brief, the break is a prime site of socialization in the choir. Waiting until the end of rehearsals to chat is limiting, since the dismissal at nine thirty on a Monday night usually finds most singers heading straight home to meet the next work day. While some members of my own clique would regularly meet at a restaurant or bar after rehearsals at one point, this practice has died out as several of those members moved away, rehearsals became more rigorous, and thus exhausting, and as we all advanced in our own professional and educational careers.

The performance setting is markedly different from the rehearsal space. In many cases, particularly when performing with the Detroit Symphony Orchestra, the

performance location is about one hour's driving distance from the rehearsal space. If public performances are to occur a considerable distance from our local town, the chorus manager coordinates travel to and from the performance location for dress rehearsals and concerts. At other times, the performance location is within the town or its environs and singers coordinate transportation amongst themselves. Performance locales are usually much larger than the rehearsal space, with a stage and a large space for audience seating facing the stage. Concert halls are also typically more resonant than the "dry" rehearsal space, adding a richness to the sounds produced from the stage. The choir is usually placed along the back of the stage, with singers arranged in rows of risers (instead of individual chairs) in the same seating placement they were assigned for rehearsals. In general, the choir performs with moderately-sized to large symphony orchestras, which can number fifty to one hundred musicians depending on the size of the orchestra and the particular instruments needed to accompany particular musical works. The orchestra (or whatever musical accompaniment will be involved in performance) is usually located between the conductor and the choir. The conductor usually takes up his position at a podium located at the front of the stage, nearest to the audience. However, while the choir and orchestra face the audience, the conductor turns his back upon the listeners in order to face the musicians and direct their performance. If the musical work involves solo parts, the soloists are also present on stage (generally speaking), seated on individual chairs that are placed in between the orchestra and the conductor's podium. Usually, the lights of the concert hall are trained onto the stage, illuminating our scores so that they can be easily read, but also limiting what can be seen of the audience.

This detailed analysis is an important contribution to the organizational literature – while much has been written about the work of conductors and instrumentalists in symphony orchestras and jazz bands, little has been reported on the comparatively different interactions amongst conductors and singers in a choir. These descriptions entail the bare, yet complex, framework of what is involved in singing as a choir. As the processes, actions, artifacts, and actors involved in making beautiful music are all set to work together, performers experience intense highs and frustrating lows that coincide with the coordination quality of that moment. Variations in coordination quality in the choir are part and parcel of differing levels or degrees of beauty, and the contrast between beautiful and poor-quality moments guides the examination of the experience of coordination in the next section.

EXPERIENCING VARIATION IN BEAUTY (AND COORDINATION)

It is in the act of coordinating within the contexts of rehearsals and concerts that the singers, conductor and accompanists of the University Chorus experience various degrees of beauty. Coordination in these contexts involves the social and material surround of the relationships amongst Chorus members, the musical notation and text they attend to and enact, and the actions of the conductor in shaping the collective experience of almost two hundred people. Beauty in this context involves a tacit understanding of the aesthetics of making ensemble music; specifically, it refers to being aware of how the interplay amongst the various elements described above achieve the purpose of making music as a group (White, 1996). In a sense, the layering of beauty or aesthetics onto the necessity of task coordination demands a coordination of understandings or knowledge, as well as actions.

Experiencing beautiful and less-than-beautiful moments in this choir includes a set of coordinating activities that are undertaken by the group, performed through the interactions amongst group members, and that vary in how well they facilitate shared understandings and actions. For example, as will be described below, beauty involves feeling a "whole" coming together, partly through the alignment of individual choir members' actions; poor-quality moments can involve feelings of not understanding what the conductor desires from the singers. The following descriptive accounts, based on data from interviews and fieldnotes, are meant to add flesh to the shadowy outlines of what singers experience as beautiful and not-as-beautiful as they coordinate in rehearsal or performance.

1. Beautiful Moments

Moments of beauty are experienced in the choir primarily as felt moments of wholeness. The whole is apprehended in some way, in some instant, in a manner that is deeply felt and known. Attention, too, is felt and experienced in a rich, senses-filled, intense, and holistic focus. The work of rehearsals, rendering accurate performance automatic, is made manifest in such moments, and singers recognize the enactment of their own purpose, and the intent or message of the text that they sing. A priori, moments are a suitable temporal division to consider in this context, since music is itself ephemeral. All music involves momentarily-experienced tones building on the memories of the tones that came before, the anticipation of the tones that will follow, and their relationship with accompanying tones. What we might refer to as "the music" is itself never fully present as a whole at any one point, except for how it is represented in the memories and anticipation of the listener and performer. Given the performative nature of

music-making, only the artifacts of performance like the score, the concert hall, and the

conductor's baton remain after "production", unlike the durable products of

manufacturing, or even knowledge work (e.g. reports and designs). In the end, all we

really have as listeners and performers are experiences of moments set in the greater

context of the musical work.

A brief account from my fieldnotes, describing a performance of Handel's

Messiah demonstrates the interweaving of all these elements in such experiences:

> *Overall, the sound was beautiful, with each section sounding as if they were of one voice, truly making a choral sound. I love the Hallelujah, because [the conductor] turns around to conduct the audience as well, who all have copies of the music for that movement. We don't even rehearse the Hallelujah in the weeks before the concert because the audience sings over us anyway. When [the conductor] turns, he includes the thousands of people (maybe 3000!) in this work of art, and just seeing him waving his hands around, directing everyone (whether they sang or not) felt great. The soloists sang their heart out too, so now they were joined with the choir and audience as well. As the noise of the standing ovation washed over us, I tried to keep from grinning, but let myself smile a bit. I knew this wasn't my moment alone, but that I was part of a large body of people responsible for making the audience happy. I had enjoyed singing more to the audience, looking at [the conductor], but also past him into the darkened house. I enjoyed being a true performer on display at the front of the choir, singing out to the people who were listening. My face was expressive (I enjoy it so much, I have to keep myself from smiling in the more serious movements) and I felt that I was communicating a message with my words and expression to the audience. I enjoyed it! (Fieldnotes, 12.01.07)*

1.1 Core qualities of beautiful moments

A closer look at this vignette reveals some of the key elements of beautiful

experiences evinced from interviews with choir members. First, there is an overwhelming

sense of the whole – of the unified sound people are making, of the people themselves

(conductor, singers, soloists, and audience) working as a unit, and in the coherence of the

story being communicated by singers to the audience. Importantly, this "whole" is known

through feeling, but is also a point of focus, as demonstrated in the concern I held for

being connected with the audience, and for beautifully performing the story of *Messiah*. The conductor is also a key figure, as he embodies and reflects the whole; singers feel an intense connection with him, and also focus on him in order to regulate their performance. What is also important in these moments is what is missing from this account – there were no errors or inaccuracies that captured my attention. Rather, in that moment, the many other singers and instrumentalists and I (at least from what I could hear), were masterfully executing a beautiful performance. Apart from displaying expertise, there was the perception that the actors involved were deeply engaged in their work, which, in turn, fueled my own engagement. These, and other contextual cues, such as the quality of the music and the immediate performance situation (e.g. actually being physically comfortable on stage), all seem to contribute to the beauty of the experience. These elements all emerged as dominant themes across the range of choir members interviewed, and are further described in the sections below (see Table 2.6 for a display of these themes).

1.2 Feeling in beautiful moments

Apart from *what* is felt holistically in the coordination of the Chorus, (the music, the people, and the story), *how* coordination is felt holistically is also important. First, as described in prior theoretical accounts, this "work feeling" is a subjective, tacit experience (Sandelands & Buckner, 1989). Singers report simply "knowing," but being unable to articulate how they know that a particular moment was beautiful. For example, a bass describes it as "just the vibe you get…you can't really put it into words, you just sense it." Second, this "knowing" is drawn from the bodily senses, but is ultimately a socially-derived phenomenon since the individual's body is co-located with so many

other bodies, producing sound. Feeling is thus an embodied experience, rather than a

cognitive percept held in the mind of an individual.

Feeling occurs through the bodily senses, since one is producing sound, listening

to sound, looking at others, and experiencing the fullness of the sound that you are

producing with others. There is great physical involvement, since "you're trying to keep

the sound going and spinning as long as you can, but your body needs the air and the

oxygen. It's like having a baby" (soprano). The physical senses might also overlap,

informing each other, with some singers reporting a sort of synesthesia. A young bass

describes how, with beautifully performed music, "when you close your eyes, you can

see a story. You can see colors, you can see just wonderful, wonderful things." The body

becomes a sounding board that resonates with the performance of the group, since the

energy amassed in the group performance is sensed with the body but tied to the

performance of the self with others. Physical arousal is thus a common facet of the

experience of beauty: "I get the chills onstage, and sometimes it's something so

incredibly gorgeous that you're just standing there singing and then your eyes are filling

up with tears, and you get totally overcome with the euphoria and the emotion"

(soprano); but this arousal is tied to feeling as one with the group in performance as an

alto describes, "… to not only feel like I'm contributing, but to be engulfed in this wall of

sound that's just glorious, I feel—words can't really describe it" (alto).

1.2.1 Aesthetics as work feelings

The above quote indirectly references the positivity of the emotions felt in

beautiful moments, but importantly, it also describes feeling that "everyone's feeling the

same way." This feeling of everyone else sharing one's experience also characterizes this

chapter's opening quote, which does not so much describe the bass' emotions, but his experience of being part of a group that seems to feel a certain way. These feelings are connected to, yet different from the emotions involved, since they emerge in the enactment of performance, and can best be described as "work feelings" or the aesthetics of the task (Sandelands & Buckner, 1989). In the case of the Chorus, the task being performed is the ensemble work of a group. The feelings described here about the quality of such work differ from emotions, or appraisals of the situation that vary in terms of their arousal and valence (Russell et al., 1989; Watson et al., 1999).

Feelings, or aesthetics, are concerned with the form of whatever is being directly experienced in the world (Taylor & Hansen, 2005). As with anything else in the world, particular tasks have their own aesthetics or feelings (Sandelands, 1988). For example, just as hearing one person sing feels and sounds different from hearing an entire chorus sing, for the individual, singing by his or herself feels different from singing with several others. In the latter case, feeling is tied to the movements, dynamics, or phases of the life of the group (Boudens, 2005; Sandelands & Boudens, 2000), in addition to the dynamics or form of the music itself. The physical closeness of others performing the same task, and the experience of hearing others produce the same sounds that are coming out of one's mouth are quite unique. *Doing* together in the choir is linked with *feeling* together in both senses of the word: people not only feel that they feel the same kinds of emotions together, but feel as if they are part of a whole. These latter, aesthetic, feelings are tacitly "known," since "you can feel it in your bones" (bass). Various forms of a whole are experienced, specifically the music, the performers, and the story or message of what is being performed.

a) Music as whole. There seems to be an almost universal sense that in beautiful moments, everything seems to "come together" or that there is a "sense of…click" (alto). This "clicking" is the feeling of musical elements coming together as one; there are no more separate parts being perceived, but one tonality. The music is experienced as "a block of sound" (tenor), in which "there is that togetherness of the sound, not a voice sticking out" (bass). One soprano describes feeling part and parcel of "a beautiful sound [that] inspired me to want to be part of it" (soprano). Singers "feel like we're, as a group, feeling the big picture" (alto). Singers also feel the choral and instrumental sounds meld to create a meaningful whole, and experience the beautiful complement between the layering of words and sounds. Hearing the sound of an organ complement the choral sound has a particular impact on this alto:

> *"I think there was something about when the organ came back in where it was just like, almost unsettling, it was so gorgeous. And so it was not just the choir, I think like without the organ I don't think I would have noticed that part as much. But there's something about the engagement of that sound that literally anchors the rise…"*

The inclusion of the organ adds layers of tones and, in effect, layers of meaning to the work for this singer. This particular case of the organ and the choir occurs in Gustav Mahler's 2nd symphony, which describes the resurrection of the soul after death – referenced by the "rise" mentioned at the end of the quote above. The tones from the instruments and the choir not only build on each other, but in beautiful moments seem to unequivocally match the story of the words being sung. The "rise" of the human soul in the story being sung is matched by the "rise" of voices and organ and our alto goes on to admit that "parts where religious sentiment comes together with the music get me more than any other, just the beauty of the music or the choir by itself, I need both." Even in

secular pieces, the matching of sounds and text becomes very moving, as a soprano describes how "…[Vaughan Williams'] *Sea Symphony* was very emotional for me…You can hear the crashing waves in the orchestra, you're singing exactly what's going on like "On the beach at night alone".

b) People as whole. Combined with the sense of the music as a whole, the sources of the various sounds are also felt as a unit, a group, or some indivisible whole. As one alto put it, "you're not two hundred individual people, you're one person, one entity that's working together" (alto). There is a sense of wonder at the synchrony of so many performers, since "There are so many of us; and to know that all, or nearly all, of us are doing that well toward a common goal just feels great" (alto). Knowing that "everyone's just on the money" is "really great" (tenor).

Just as the instrumental sounds build on the choral sound, so too is there a sense that choir and orchestra are sharing mutual engagement, emotion, and excitement. As one bass describes, "it is amazing to put all these people and the conductor controlling, bringing music out of all these people – the orchestra is amazing, too. And the choir is so wonderful, to see all these people working together, focused, concentrating to create this thing of beauty." In a key moment in Handel's *Messiah,* this bass just knew what "all of the University Symphony was feeling. They're all just scrubbing away and we're just singing our hearts out." Even the soloists are included since they impact the way the choir feels about the performance. In recounting a *Messiah* performance to another interviewee, one alto describes how "the soloists really started it in the Messiah this year. They were technically very good, but they also carried the emotion of the piece and were

very dramatic and I think that just sent everybody in the right direction." All the other

performers are seen as influencing the choir in some way.

The key individual in the choral experience – the conductor – has a special place

in this sense of all actors performing as a whole. Feeling connected to the conductor is

important since he embodies the whole. For the most part, the size of the choir limits any

one singer nested within the group from hearing the sound of the whole at all times; the

conductor, on the other hand, in his central position outside of the choir, continuously

monitors and guides the choral and orchestral sounds. The "conductor literally is the

person who connects it all…literally the thread that ties it all together" (bass). It is

through the conductor/director that individuals have a sense of what the whole feels, as

one tenor describes:

> *"I'm hoping that they're having the same experience I am, even I can
> sometimes sense that because it's usually through your director that you sense
> that. As you listen to the chorus and you're following and once again, when
> everything becomes unified and synchronized in some way that you're sharing the
> same experience and hopefully the director recognizes it and says, 'Well,' and
> keeps you there…I'm aware of what's going on."*

Furthermore, the emotions elicited and meanings derived from music are subjective, and

thus personal and even intimate. Thus, if one senses the conductor's appreciation of a

particular moment, not only does this signal that the group as a whole is performing well,

but it also marks a special connection between singer, choir, and conductor. A soprano

describes this intimate connection:

> *" …You're in this huge group and yet—and I think you feel, too, like
> you're sharing something very personal with each other. I do notice at those
> times, I'm always highly aware of [the conductor] and his conducting when he's
> doing that. I can tell by—sometimes, I think, parts that really mean a lot to him
> by the way he's conducting or his face…I think that draws—sometimes you feel
> like, 'Oh,' you made a connection, 'This is definitely—this is my favorite spot,
> too.'"*

Feeling the conductor's approval and mutual appreciation for that moment seems to matter a great deal for these singers. What matters here is that the conductor's communicative acts are not directed towards any single individual, but are visible to the entire group. Additionally, what he is reacting to is a sound being produced by the group at large, of which the individual is a part. Thus, if singers feel a connection with the conductor in such moments, they are essentially connecting with something also potentially meaningful to the rest of the group, and are finding common meaning in something being produced by the group.

Apart from fellow choristers, the conductor, the instrumentalists and the soloists, another key set of actors in performance is the audience. In describing beautiful moments, singers demonstrate a profound recognition of the impact of their performance on the audience's experience. There is feeling for the audience, as the same sense of beauty that a singer feels in performing is something that "ultimately, the audience feels…also" (bass). Singers see themselves as playing a significant role for the audience, and in turn, they appreciate the role that the audience plays for them. One tenor recounts how, while he was on stage, he spied a harried businessman rushing to his seat and turning off his phone and laptop; the singer recognized how that man had taken time out of his life to "hear something beautiful," so it was the job of the choir to bring soothing beauty to these listeners. Another tenor describes the feeling of "I've done something for people, and it's not just for me – this is my community volunteerism…if there weren't anybody to get up onstage and sing, [Ann Arbor] wouldn't have a *Messiah*." There is a sense of duty and respect for the relationship with the audience as yet another tenor describes how "it's just a wall of humanity there listening to you…when I go out there

and I see that, that to me is just amazing that someone would come and see—sit silently for two hours and watch us perform and see this mass of humanity out there."

   c) Story as whole. A final dominant element of holism that emerged from interviews was that of understanding, appreciating, and communicating the story, narrative or message that one was performing. Unlike instrumental performance, choirs explicitly communicate a text, adding an important dynamical layer to the evocative ebb and flow of a musical work that elicits so much emotion from listeners. Thus, in addition to the darkness or joy being painted by the pitch, volume and timbre of the voices and instruments, there is an element of linguistic comprehension that shapes how the music is felt by both performers and listeners. Finally "getting it" is a powerful experience, as one soprano describes her relationship with singing Handel's *Messiah*:

> *"When…we did it all the way through, I start to go, "Oh, now I get it."*
> *And I get that we are dumb sheep—completely unaware of—completely bouncing*
> *around. Here God is dying on a cross for the sins of the world and the fact that I*
> *finally went, 'Oh, we're stupid.' And then he goes right into, 'The Lord hath laid*
> *on Him the iniquities of us all' and I'm like, 'Oh.' I get very choked up there"*

This comprehension involves not only cognitively apprehending the literal message of the piece, but also feeling and transmitting the emotional layers that communicate this story. While one bass describes it as "almost acting with singing almost because you feel as if there's an emotional tie", a tenor elaborates on how "it really is experiencing the emotion of the words that keeps the intention. When it's really working I'm totally in it. So, if it's a Requiem[6], I'm crying…"

   In addition to fully feeling and engaging the story and its emotions, the narrative that is perceived in these moments is further textured with the religious themes of most of

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[6] A "Requiem" refers to a (holy) work composed in memory of a deceased person, or an interpretation of the Christian Mass for the dead (Oxford Dictionary of Music, 2006).

the choir's repertoire. For several singers, and the conductor, beauty is experienced as the

enactment of the musical message constitutes a form of "witnessing" to one's faith. As

this bass so eloquently describes:

> *"I think the last Messiah, this past fall, was wonderful. It became more than just a musical experience. There did seem to be something more. It was telling a story if you let yourself become involved at that level and not just singing the words…that is my way of witnessing, both in church and in [University Chorus]…it's a way of sharing emotions, both happiness and sadness, elation and in a way that it's not as well done in some other ways. And as you share the emotion, you again have to do more than produce the words and the notes; you have to produce the feeling behind the words and the notes… Music gives you a special platform of which to witness, and which is also a socially acceptable way of witnessing without overtly proselytizing. So, that's—my faith is an important part of my being, so that's why it's important."*

Experiencing a personal expression of one's faith in the beautiful performance of the

collective is quite powerful. There is a feeling that self, choir, and audience all experience

the meaning of the message communicated by the tones, words, and emotions elicited.

1.2.2 Positive emotions

Musical performance is rife with feeling, and performing as a choir renders

coordination a feeling-rich experience. Music-making is one of the most complex

cognitive processes in which human beings can engage, since it simultaneously employs

a variety of brain modules that are responsible for temporal, motor, auditory, memory,

and emotional processing (Koelsch et al., 2006; Palmer, 1997; Peretz, 2006; Peretz &

Coltheart, 2003). While this might be considered an artifact of the task, musical

performance and appreciation readily elicits emotion, to which many of us can attest

when we hear our favorite song come on the radio, or are moved by a particular

performance. Although the feeling of a "whole" in various forms seems to dominate the

way choir members describe their feelings, a deep positive emotional experience is also a

key component of experiencing beauty. For many choir members, there is great joy and

satisfaction when they experience beautiful moments. As one bass describes,

> *"It's just the excitement, like everything's coming together, people seem to be smiling, and they're going for it. That, to me, signals happiness or some kind of satisfaction, because if you were really afraid you might not be going for it so much. You'd be a little timid, a little reserved, you wouldn't really be reaching out as much as you could. But at the end of these words, you're just like, "Yes, yes, they're smiling—the choir is going for it." I think that's the thing that is universal. If you look around, everybody seems happy. Everybody seems to be really going for it."*

Joy, rather than fear, seems to be a key part of the collective engagement in the task. As

might be expected, beauty is appraised in an overwhelmingly positive manner as

reflected in the "excitement", "smiling" and "happy" looks that people display.

Apart from the valence of what is felt, singers also describe the form of their

relationship with the emotions themselves, providing descriptions that are themselves

moving. Several singers and even the conductor describe how "there's a sense of

emotional abandonment—maybe that's not the right word—emotional freedom in a sense

that your heart is full—maybe tears, extreme joy" (conductor). Not only does one engage

one's capacity for feeling, but singers also limit that capacity in order to not lose focus on

the task. One soprano describes how "I've had a couple times where I've had to remove

myself, emotionally, because I do start to choke up or well up…a lot of times those

places that I get choked up tend to be things that I really also connect with—something

that we're singing." Emotions are thus intimately tied to the nature of the task, to the

emotions elicited by the music, and to the collective nature of the performance. A

soprano declares that "you just know that, at this point, you're all in it together and you

just—it's just this whirl of emotions and everyone's feeling the same—you know—you

just know that everyone's feeling the same way." These positive emotions thus serve to

connect the group members as a whole, facilitating and sustaining their collective performance.

1.3. Attention and Holism

The above descriptions reveal how feeling is a key element of the experience of beautiful coordination. Yet, as suggested in several descriptions of coordination in formal and informal work organizations and groups, attention, focus, and awareness, comprise another important component of the coordination experience. Given the aesthetic nature of choral performance, attention is a densely sensate phenomenon, rather than a "thin" monitoring system through which issues are selected and decisions are made. Attention in beautiful moments takes on various forms, is of a particular intensity and has certain points of focus. These characteristics are richly described in the following accounts.

1.3.1 What is attended?

Attention is intensely aimed through sight, vision, and sound at some form of the whole; similar to the feelings in the experience of beauty, this includes attending to the whole of the music, the people, and the message. Importantly, and as previously implied, focusing on the conductor is also an essential component in the experience of beautiful moments.

a) *Music as whole.* In beautiful moments, the whole of the musical work is both seen and heard. "When you're in performance, you hear how everything goes together," and a singer can finally say to herself, as this alto does, "That makes sense. Yeah, now I see that where that little melody comes from and why we need to be singing it this way." The conductor, as a co-performer with the choir, also experiences a holistic focus as he describes being "completely focused on the music…in a way, that allows it to transcend

the minutia"; ultimately, he "would be focused on the really big picture." In a sense, "the details of the music get lost, and it becomes music," or, as this tenor continues, "if you just focus on the details, it's just – that's all it is."

b) *People as whole.* Not only focusing on the work as a whole, but also seeing the totality of the corpus present on stage – of singers and instrumentalists – provides a sense of beauty in that moment. This soprano, sitting on the edge of stage right, was able to

> *"look across-- I could see the whole choir and the children's choir and the organ. I think that's part of my appreciation for choral music-- is seeing how many people are coming together and working in unison towards a particular purpose? I think that's part of why I'm like, "Oh, this is so cool." You're like, "Wow, there are hundreds of people on stage."*

Singers not only focus on the physical "oneness" of the actors on stage, but also the social oneness. One soprano described thinking about the "oneness" between the music of the orchestra and the choir, despite a previous conflict over who would be allowed to use the bathroom! A tenor, caught up in the divine message of the *Messiah*, describes focusing on a sort of "love between those who were singing." A bass describes the unifying of the diverse contributions in this way:

> *"it's like you hear no diverse things happening there. There's not black, there's not white, there's not woman, there's not man…you don't hear individuals, you hear a collective sound of everybody universally making one central idea coming across, which I think is great."*

c) *Self as involved in whole.* The whole that takes up performers' focus of attention is an entity of which the self is part and parcel. Producing a choral work beautifully is at once the work of large collective, and, for this bass, "a very personal experience, which doesn't mean I want my voice to soar up above everybody else's, but I want my voice to do precisely what it's supposed to do in that context." Similarly, many other singers consider their own part in relation to the whole when singing beautifully.

An alto describes how "the basses can't just be thinking about their own part, the altos can't just be thinking about their own part. It doesn't mean that I'm sitting there thinking about what the tenors are doing, 'cause I'm not. But I'm understanding what I'm doing in the context of what everybody else is doing and the feel that that creates." The self is a point of focus insofar as it is suitably part of the whole context.

    d) Communicating the story. How the self communicates the message of the work being performed is another major focus for singers. As one tenor put it,

> *"when you say, 'What do you focus on?' it depends. When we were singing the Adams'…Thinking of those 9/11 messages and the recording that was playing in the background. You're thinking, "This really is for them" and also thinking "Wow, these recordings are real people and all that and I hope some of them are here tonight."*

Apart from focusing on the sounds themselves, singers describe thinking in the back of their heads "'This is what I'm singing. This is what the words say, and this is what's happening" (alto). Focusing on the words and their emotional context equates to a focus on the broader message that singers find personally meaningful, and that they are communicating to the audience.

    e) Conductor. The role of the conductor as a discrete point of focus is perhaps one of the most important aspects of experiencing beauty in the coordination of the choir. In beautiful moments, people are attuned to the directives and signals that the conductor provides. As described above, by virtue of his physical location, and expertise, the conductor has the ability to hear and sense the beauty of the choir while it performs in real-time. Practically, most singers cannot see or hear the contributions of others on the far side of the stage, so it is important to stay with the conductor, since being in time with him means being in time with the body of performers. Even the accompanist, when he

joins us in a rare instance on stage to play the organ, describes how "anything I heard from the other side seemed so distant, including the choir…everything I heard was at a distance, and I had to go with the conductor to stay with all of them."

Importantly, too, a collective focus on the conductor ensures that one is sharing in the energy, excitement, emotion, and beauty of those moments. "Seeing the emotion that's portrayed by the conductor really…has a lot to do with the energy and the excitement of those moments…At that time you're just like a unit, but…really just to focus on the energy that's emanating…from the conductor" (alto). The life of the group is reflected in the conductor's actions since he "is living the vision as best he can and you can see it 'cause he's just giving you that energy" (soprano). Through his facial expressions, singers know that they have accomplished something beautiful as a collective, as was the case with one alto who "looked at [the conductor] and he was just blissed out. I mean, you could tell it was really coming together…you can see it on [the conductor's] face" (alto).

2. Less-than-beautiful moments

In contrast to moments of beauty, instances where the choir falls short of performing beautifully are experienced as a loss of the whole, and involve concern for and attempts to recover this whole. Whereas beauty is a subjective, tacit experience, what occurs in poor-quality moments is made objective, concrete, and apparent to all involved. Performance is either halted or disrupted and conductor and singers attempt to clarify what exactly was missing or went wrong. Feeling and focus are narrowed as performers attempt to repair breaks in the cohesive whole of the choir, and the music. Usually, such moments are experienced in rehearsals, since this context is appointed as the appropriate

setting for committing errors. The context of public performance, on the other hand,

renders breaches in the whole of the sound, or in the social togetherness of the performers

as even more painful and problematic. The fragmentation of the solidarity of the choir in

and out of performance is made apparent in the following vignette compiled from the

recollections of three long-standing singers:

> *This was the worst experience in all my thirty-eight years in the choir, as low as it gets. I blanked the name of the piece out of my memory because it was such a horrible experience, but it was when we were preparing to perform Rachmaninoff's* The Bells. *The director that preceded our current one was such a poor and inefficient rehearsal manager - he got focused on certain passages and certain movements, and we'd spend half an hour at rehearsal going over eight bars of something, until it was exactly the way he wanted it to be. He'd have the men repeat it, and repeat it, and then kept the women after to practice. This was difficult music to prepare, too. Next thing you know, it was time to perform, and there were a couple of movements that the men didn't know. Of course, he would have said that we should have prepared on our own, like a professional choir. But this is an amateur choir, you know? People set aside the time and they come to rehearsal, and expect to cover all the music in a rehearsal. We're not being paid to come into rehearsal already knowing the piece. Well, when it came time for dress rehearsal, it was obvious that at least two-thirds of the guys didn't have a clue about the rhythm or the notes; it was just a disaster. And as for the ladies, rather than bells pealing, they sounded like little table bells. Everyone sounded unsure and tentative since people thought, 'Ooh, this could be a disaster here.' And apparently, the orchestra and conductor thought the same thing – they were stunned. The conductor was almost speechless, and the whole orchestra was looking at us. Those are moments that you say, 'Oh, I wish I were somewhere else,' you know."* (Bass, and two altos)

This bricolaged account reveals several aspects of poor-quality moments that

choir members revealed in their interviews. First, there appears to be an obvious

disconnect between the conductor's expectations of the choir, and what the choir needed,

which was reflected in the lack of collective assurance that everyone knew all of the

music, and the poor quality of the overall sound. Rather than experiencing a whole,

singers experience fragmentation and disconnection amongst themselves, within the

music, and with the conductor and orchestra. Set against the holism in the feeling and

focus experienced in beautiful moments, poor-quality moments involve negative feelings of detachment from the situation and separation from others, alongside a narrowed focus on the error itself, rather than the fullness of the musical whole. As with beautiful moments, the conductor plays an instrumental role in preparation, correction, and also the feelings that accompany correction. As seen in the above account, the conductor's reaction to these kinds of moments is a powerful influence, determining if performers themselves feel damned or hopeful about survival. These elements all emerged in the accounts of a majority of choir members, and are further described in the sections below (see Table 2.7 for a display of these themes).

2.1 Core qualities of poor-quality moments

The experience of poor-quality moments contrasts with the experience of beautiful moments in several ways. Poor-quality moments are readily known through the inaccuracies or errors that occur in performance. Singers need not "feel it in their bones," but can easily hear when a cellist screeches some of her notes (soprano), when they themselves miss the entrance to the next measure or bar or music (tenor), or if other singers seem to have poor intonation and just cannot seem to read the music properly (soprano). There are objective prescriptions for the performance, and if those are not met, the moment is readily ruined – according to an alto "if we sing really crappy, we probably all know it to some degree, and if we make individual mistakes, which we all do from time to time, it impacts things."

With poor-quality moments, bodily involvement also takes on a different meaning. Rather than bodily arousal signaling the music "getting under one's skin" in the form of chills and goosebumps, performers do not describe the sense of being subsumed

in a "wall of sound," but instead feel their bodies limiting their participation with the group. Illness, the effect of age on one's hearing and vision, and simple exhaustion from a busy workday and week, all either make singers drop out of singing or have their contributions stand apart from the group. The resultant missteps involve discomfort and pain, rather than pleasure. Apart from a negative body-state, not being able to hear both the self and others suitably, or see the conductor – all renderings of the whole – leave singers unable to apprehend the experience of the collective. As one alto put it, "if you can't see the director, and the director is the element that's pulling everything together, it's really, really hard to do your best back there when you can't see what's going on." In general the experience of these moments is not one of the interdependent, cohesive nature of the group come to life, but one in which the fracture of the whole is noted and felt. What runs throughout the various elements described below is a common theme of separation, brokenness and a concomitant movement towards repairing and resolving such breaches.

2.2 Feelings of poor quality moments

As with beautiful moments, both aesthetics and emotion are primary aspects of feeling in the coordination of poor-quality moments.

2.2.1 Aesthetics of poor-quality moments

a) Music as fragmented. A sense of the whole still pervades poor-quality moments, but in a qualitatively different manner than that experienced in moments of beauty. Rather than a sense of "the whole being more than the sum of its parts," such moments leave choir members feeling as if a particular performance was less than it could have been. As one alto describes, it is possible to have experienced "singing the

notes with the text, with the right rhythms; but it almost sounded like rehearsal one month prior to that." These moments, although not as dramatically horrible as the Rachmaninoff's *The Bells* episode, are still consequential for the choir since the beautiful whole that is their raison d'être is not being enacted. As another alto put it: "the parts that were more difficult—it wasn't that they were that horrible. People were getting most of the notes, but the music wasn't coming—the music wasn't there. The notes were there, the music wasn't." The "music" is what the choir strives for and hopes to produce in front of an audience, since, according to one bass "no one cares to hear notes…they want to hear music." Rather than the transcendent experience of beauty, performers instead experience a sound that, while comprised of many sounds, falls short of the aesthetic standard of sounding like a coherent and meaningful whole.

   b) People as fragmented. Given the ongoing connection between person and sound, a lack of transcendence in the sound is accompanied by a sense of the people also being less than a unified whole. As one soprano describes, "you know at the end of a performance because you have the euphoric feeling or you don't. You'd know if it was a really awesome performance or if you were all just onstage at the same time. You'd know if you were all together or if you were just all there at the same time." While there may be a diffuse sense of being simply co-located with others, rather than "one entity," the lack of connectedness is often acutely felt. This bass describes how "you literally just have disconnected by accident or by mistake from the group and then all of a sudden you're like, 'Oh'." Commission of a specific error leaves one feeling out of step with the rest of the group; if one is not the culprit, then hearing others stick out also dissolves any feelings of cohesiveness. For this alto, "standing near somebody who stuck out more for

some reason… are the only times when I really think about the group as individuals." At times, attributions are made about others' feelings about the task, since a divided sound feels like "… an all over sound—people doing their own thing… We have some people who think they're soloists…and it doesn't work out" (alto).

Poor-quality moments not only involve feelings of disconnection amongst the singers, but also between the singers and conductor, and the singers and the audience. At times, singers' "moving in time" with the conductor is disrupted since "maybe the conductor changes something up and you're not expecting it, maybe not everybody's looking up," which induces a feeling of "something's off a little bit" (alto). At times of error, no longer do singers have a sense of communicating with and sharing an intense experience with the audience, but they instead hope that the audience did not hear it. There is the feeling that the choir has ruined the audience's experience since, even though listeners do not necessarily know the notational or rhythmic prescriptions of the score, they "have to know something's wrong because it just wasn't right" (tenor). Concern over the audience knowing something was wrong, or assuring oneself that the audience could not possibly hear the choir's errors over the music all indicate a separation between performer and audience: we either did not fully enact our part of the relationship, or we hope that listeners did not apprehend the full extent of our (poor) efforts.

2.2.2 Emotions in poor-quality moments

a) Emotions about the self. As the music and the group feel fragmented, so too do the majority of emotions seem to be framed in terms of the self or the other. Rather than a simplistic feeling of the whole that accompanies the self operating in unity with others, emotions in poor-quality moments reflect the variety of the many ways in which

beauty can be lost. While most of these emotions concerned about the self are negative, a few of them are also positive. Self-directed, negative emotions include a desire to escape, or to essentially be removed from the immediate group situation. This is noted by the bass in the section's opening vignette, and other singers express a desire to hide, or just have the experience come to a swift end. As one alto describes, "Oh my God, you just want to dig a hole and bury your head in it." This sentiment communicates the great discomfort and unpleasantness that singers feel in poor-quality moments. Negative emotions are even more commonly experienced than this desire to escape, but similarly involve a sense of pain. Singers feel annoyed, frustrated, sad, disappointed, and embarrassed, with some, including the conductor, feeling guilty for being involved in some error or disruption to the group. People can become greatly discouraged as their goals of creating something beautiful become frustrated. Interestingly, possessing externally-validated expertise, such as a degree in music (as is the case for the conductor and several of the singers) heightens feelings of guilt, frustration, and embarrassment, since one has high expectations for oneself, and assumes that everyone else shares those expectations. As this soprano put it:

> "I put all this pressure on myself like, "I have a Masters of music in voice performance. I damn well better sound good, otherwise how did I get this degree? Are they just handing them out?" So, when I feel like I don't live up to my standards—when I don't realize my own expectation of myself then I get self conscious about it."

For the conductor, guilt and frustration, rather than embarrassment, color his experience since "as a conductor, I tend to think that it was my fault that it didn't go well and that I maybe I chose the wrong tempo or that we needed to rehearse that more."

Furthermore, the desire to hide and the negativity are accompanied by tentativeness about performance. The confidence that seems to fuel a beautiful performance is no longer present. A tension is built as one is unsure about whether "is this gonna fall apart?" (alto). Feelings of panic, of being lost, and of being out of control all surface in these moments. As one tenor describes, "you're not sure where you're at, you're not sure how you're gonna get to the next place" and he ends up questioning, "What do I do next because I'm not completely in control?" Not feeling in line with others leaves one at a loss of how to go on with what is ostensibly meant to be a performance by the group.

In contrast to these feelings of uncomfortable disconnection, some performers also describe positive emotions about the self that coincide with poor-quality moments. As will be seen, despite their positivity, these feelings are generally derived from the self being set apart from the group. For example, several singers express relief that someone else committed the error and not them. A sense of assurance and comfort not only comes from ensuring that someone else is to blame, but is also derived from feeling that other choir members, or the audience, did not apprehend one's errors. As one tenor put it "In the scope of things, no one knows you really made a mistake and if they did you don't show it." Additionally, knowing that one is not the cause of a disruption in performance can induce a sense of arrogance or superiority regarding those who seem to be demonstrating a lack of expertise. The altos in particular, in their interviews, and in the course of various conversations, conveyed a sense of "we're so much better than the sopranos who obviously can't technically read the music, like seriously."

There are however, some feelings that do not involve feeling good at the expense of others. Some of these feelings involve others being assuring or complimentary about one's efforts. An alto describes one such moment "where the woman next to me was like 'Well thank God you're here because we're all sucking.'" In other instances, performers are able to reassure themselves that they can persevere beyond the poor-quality moment, and manage to eventually do better. Not only do singers accept that **"**you're human, you make mistakes," but they also feel that "you just have to keep striving to try to let the music survive" (bass). There is some sense of hope in the chances of going on to create beautiful music.

b) Emotions about others. Just as with emotions directed towards the self, performers experience a variety of emotions about others that range from negative to positive. Just as with the self, there is annoyance and frustration with others, but also hatred, anger and a desire to inflict pain. Rather than a sense of 'Kill me now!" (soprano), singers want to hurt offending parties and are "ready to kill 'em by the end of rehearsal or consistently you just want to beat them" (tenor). The lack of togetherness that produces these emotions is also readily located in others. As one alto describes, after she prepared a piece of difficult music on her own, she felt "like all the pieces are aligned. And other people's pieces were not yet aligned." A soprano describes her frustration at others who "will see rests on the page, but they don't really count them. It's just kind of like they're like, 'I'll just come in sometime when I think it's okay,' and it's like, 'You could count, it's all written out for you.' That sort of thing drives me nuts." Indeed, an inclination to blame others manifests itself in such moments. In recounting her experience of a performance of Shostakovich's *Oktyabr*, where the sopranos came in early, inducing

panic and consternation amongst the altos who were to follow, this alto said, "It's just horrible. The instinct, for instance, in the Shostakovich, the sopranos—and you're like, "Stupid sopranos!" Your instinct is to try to point the finger." Others limit the group's ability to perform a beautiful unity of sounds and people, producing a sense of disappointment and failure. The sense of floundering and loss of control felt about the self can be linked to the fact that one is at the mercy of the group.

Although blame and disappointment in the group are common elements of the experience of poor-quality moments, singers also feel positively towards others, and this is usually experienced as empathy (Batson et al., 1988; Davis, 1983). Rather than shaming others, singers appreciate how anyone can mess up a note or an entrance, with the knowledge that "We all do it" (tenor). Singers understand that just as others frustrate their efforts, so too must their flubs frustrate others. A common subject of empathy is the audience: even while on stage, singers intensely impute frustration to their listeners. As another tenor describes, "You hear a mistake and then you're like, 'They all paid fifty bucks for this?'… I'm like, 'Oh man, not worth it anymore.'" Singers feel a dutiful responsibility to those who have come to hear them perform.

Apart from empathy, singers also make each other feel good, and in turn, can even feel good about others. Although the interdependent nature of the choir's singing may be felt in terms of its disruption and fragility, there is some comfort in knowing that if one messes up, others are there to take up the slack and maintain the performance. There is "something…that is very reassuring" about knowing that "even if like 10, 20, 30 people stop singing, people, other people keep singing" (alto). Also, singers see value in making others feel good about themselves, figuring that "I'll just make a nice comment to

them and say, '…it's just your German,' that's like if they get a compliment from me, they don't mind hearing something bad from [the conductor]" (alto). Neutralizing others' potential negativity is important if the group is to collectively advance beyond the poor-quality moment.

   c) Emotions and the conductor. As the person who continuously has a view of the whole at work, the conductor is an important reflector of and influence on the feelings of the choir. While he ultimately attempts to maintain accuracy and only rarely is the cause of the frustrations within the choir, the conductor is undoubtedly important for shaping the emotional context within which errors are handled and hopefully overcome. In general, the conductor appears to be aware of his impact on the emotions of others, restraining his own frustration at the many errors that might occur in rehearsing a difficult piece. One soprano provides a particularly vivid description of the conductor's self-control in the interest of the choir:

> "…*even when he is just absolutely furious with us, almost always he can still do it in a funny, kind way…I've never ever seen him lose his temper—ever, which to me, I think musicians do that a lot—or directors. And I've never—he's always pulled it back in at the last minute. I'll never forget…It was when we were rehearsing Sea Symphony. And there was one time… I remember just watching his face. He was getting madder and madder and madder. And just finally… I saw him stop and take a deep breath and he got real quiet and he said, "We have performance in two weeks, ladies and gentlemen. Go home and learn your part," and I thought, "Eh." That takes, for me—that takes a lot."*

Singers are quite vulnerable to the feelings that the conductor portrays. As in beautiful moments, the feeling of that moment is conveyed and reinforced by the conductor. Thus, as this alto and bass discuss:

> Alto: "*You can see so much about how a conductor feels about your performance by his face. So, just thinking about these moments, especially in catastrophic moments—and part of that guilt feeling is seeing a panicked look or, "Ugh." …something visually on the conductor's face that says not only did we screw up,*

but we disappointed him, or something like that. But I think so much of that can be also overcome if you look and continue to see a feeling of, "Alright, we can get over this together." It's all conveyed on the conductor's face and their—"

Bass: ***"It's inherent. It's like he's saying, "It's okay. We make mistakes in life. It happens."***

In addition to providing assurance and comfort in the midst of poor-quality moments, the conductor also sets the tone of rehearsal, the arena in which most errors occur. Sarcasm and humor are used to lighten the mood of this space, which can be fraught with frustration and exhaustion as singers struggle to learn the music. The conductor knows "how to be critical but not discouraging" (bass) by "[making] sarcastic comments—it's sometimes insulting and I think that's his way to make you laugh at your mistakes and also to be like, 'That was awful' without saying, 'That was awful' and being so negative." (bass). As this alto describes, "sometimes the way he insults is so everyone laughs." The bass being interviewed with her cited the example of "'You sound like chipmunks, meh, meh, meh, meh, meh.'" Although one may feel insulted, one is still laughing at the error, at oneself, and at the group, and doing so along with a host of others. Thus, apart from using humor in the course of making singers feel that "we get it and we're able to change it" (alto), the conductor's strategies regroup the whole by striking a common chord in the midst of fragmentation, frustration and disappointment.

2.3 What is attended?

a) ***Distraction from whole***. Distractors from the task of singing together as a choir are associated with poor-quality moments. For example, having the doors to the rehearsal room slam shut disrupts singers' focus on making music. Singers might also contribute to the distraction. Whispering jokes about other singers in rehearsal is bad enough, but some singers have even been observed to surreptitiously type and send text messages during

soloists' portions of the *Messiah*! The distraction is protracted beyond the immediate moment as other singers call and email the chorus manager to complain about so-and-so texting while on stage: a singer's self-distraction becomes a distraction for the group. With busy schedules and work-week rehearsals and performances, simple exhaustion also detracts from a focus on the complex task of singing well with other. A tired singer might find herself "staring into space and happen[ing] to be looking at the wall" (alto). Interestingly, even reveling in the beauty of the moment can result in a poor-quality moment, if one's enjoyment distracts one from the work of singing. As one alto describes, it is not about "just saying, 'Oh, this is so beautiful' …you're actually supposed to be doing particular things not just enjoying" (alto). Whether one self-distracts or suffers from external distractors, the task of listening to and producing sounds with others, while attending to the score, the music and the conductor, is not fully engaged.

  b) Error as distractor. The errors or inaccuracies that detract from performance are themselves distractors, directing focus away from the task of producing a beautiful whole. There is a concern for how the error will be dealt with, and how it is experienced by others. For example, not only do particular people distract through their errors, causing one to "try to figure out who is screwing it up" (tenor), but singers also attempt to ascertain the extent to which the error was apprehended. When the trumpet player in a *Messiah* performance started to play quite noticeably behind the beat, one tenor describes "looking around to see other peoples' reactions in the chorus. And then right after, people were talking about how that guy might not be invited back." In rehearsal, people

turn around to exchange looks that communicate, "'Boy, how'd you like that one?'" (soprano). The experience itself is a potentially consuming point of focus for performers.

As implied so far, poor-quality moments are accompanied by a drive towards recapturing the whole, involving some consideration of how to save a performance gone awry. The experience of poor-quality moments is not only negative and fragmented, but it is also an experience of resilience. Because the task of singing involves linking notes, sounds, and words into phrases, lines, movements, and whole works, continuity is of the essence. Singers are also constantly reminded about the whole which they are enacting by virtue of holding the entire work in their hands in the form of the musical score, being surrounded by scores of other singers, and by the presence of a central coordinator, the conductor. Disruptions of the whole are thus ruptures set in a context that constantly involves producing a whole. Singers thus focus on repair in the midst of poor-quality moments, and engage in correction either for themselves, for and through others, and, of course, via the conductor.

c) Repair for the self. As one tenor describes it, poor-quality moments involve "pulling your focus back" from the error itself. The question is, how do singers do that, and where do they "pull" their focus? Singers focus on themselves, on their scores, on other singers, on the accompanist, and importantly, they also focus past the error, letting it go in order to successfully perform the next portion. Apart from becoming self-conscious, all of these foci involve some re-inclusion of portions of the whole into singers' awareness. In order to correct the problem, singers attend to the only element truly within their control: their own performance. One bass describes how "if there's a problem and the director calls it out or if I clearly am flat or not doing something

properly, I always check myself before I check someone else." Understandably, when performers are faced with a difficult or unfamiliar piece, they want to ensure that they are "not one of the loud entrance crazy people who's off" and singers thus end up "… checking myself… being in my own head, like 'Is this okay, am I wrong, is this, you know?'" (alto).

Singers also direct their focus beyond their "own heads" to various elements of the whole. Singers' scores are their personalized road maps of the journey they take in performance. These texts are subject to idiosyncratic inscriptions that are used to remind singers about particularly difficult areas that can be prepared outside of rehearsal, or at least warn singers about an upcoming problem area in performance. As one alto describes, " when you make a mistake…make a note. When you make the mistake a second time, you put a star by it. When you make a mistake the third time, you hit yourself in the forehead." Her interview partner, another alto, recalls, "I've got a big stop sign in this one spot." In addition to modifying the score, singers pay closer attention to the score in general, in order to have a more accurate sense of what notes, rhythms and words are actually prescribed by the composer. In this way, singers return to the basic components of the music, even counting out the beats as they sing, in addition to focusing more on reading the music. Rudimentary elements are attended to in order to ensure that one is on task; a husband and wife bass and soprano describe this re-focusing in terms of regressing or being "shaken back to a different stage," of "Oh shit, I have to remember I don't do that or don't breathe there" or "I'll mark that for next time." One reverts to an earlier developmental stage in learning the music, a stage that is necessary before one can transcend details and start making "music."

Singers also re-engage with the whole by both limiting and increasing their individual participation. Singers withdraw their participation by either stopping their singing completely, or mouthing and lip-synching the words so that, as one tenor describes, "if I'm not sure if it's me then I can control that…by stopping singing and let[ting] things get back" (tenor). Rather than potentially adding to the errors they are hearing, singers attempt to ensure that they are not the cause of these errors. While singers might drop out in the course of singing, outside of performance they also focus on improving the expertise they bring to the group by practicing difficult portions of the piece on their own. The frustration of not being able to perform the music well is often translated into a motivation to master the music through private rehearsal on a piano somewhere, practice of the language pronunciations, study of the score, and passive rehearsal by obtaining and listening to a recording of the piece.

A major component of repair involves an anticipatory focus beyond the error itself to include upcoming elements of the music. Not only is a coherent, continuous narrative being performed, but the choral sound is an emergent property of the contiguous presentation of notes by singers. In other words, singers operate on a sense of "the show must go on!" letting go of the error and moving past it. Getting past the disappointment and frustration of poor-quality moments is difficult, and several singers describe only being able to accomplish this after learning through years of experience that "performance…is like gossamer…it could fall apart" (alto). Errors are thus to be expected and through experience, one becomes more adept at getting over mistakes. Based in an attitude that "it's okay to make mistakes. There's never really a perfect performance. There's always something that could be better" (bass), singers are able to

focus on the next portion of the music, and on not letting themselves '"screw up again"
(alto). In order for the music and tempo to continue onward, singers must focus on what
is left in the performance and set aside the potentially consuming negative feelings and
narrowed focus that accompany poor-quality moments

   d) Repair for and through others. Repair is not only established through a focus
on what one can do for oneself, but is also enacted with others, and for others. First,
singers describe attempts to correct the sound by leading the group with their voice, or by
filling in parts that seem to be missing in the music. As one tenor describes, "I'm trying
to compensate for what's missing in the group in some sort of way…sometimes if they're
not as great of singers or I just try to be a leader, and I've become more as a soloist—a
section leader. A section leader is more like a—in terms of a chorus, is kind of like the
core of the sound" (tenor). Singers also use others as a resource for their own correction,
as this bass describes how "this past season when it was not going quite so well for me
and possibly the choir, I tried to listen…intently to the singers that I knew were excellent
sight readers" (bass). The balance of sound to which singers attend is purposefully tilted
towards others, as singers lower their own volume in an attempt to "get back on track and
listen harder to the people around me" (tenor).

   Repairing through one's vocal contributions is somewhat risky, since one might
end up providing an accurate sound, but ultimately end up a soloist. As one alto
describes, "you've got to choose your way. You're either gonna go with the people who
are off the beat or people—or try and get back on the beat, but you'll be by yourself."
Yet, an even riskier form of repair is the use of direct speech to communicate a correction
with others. One soprano recounts her reaction to a singer in front of her who "turned

around and she was like—she had her music and she turned around from in front of me and said, "That right there, that's a major third. You're singing it wrong," and I went like this, 'Turn around. Turn around'… I was so mad. I was like, 'I'm going to kill you.'" Unless it is the conductor providing verbal criticism, most singers assert that singer-singer correction has to come from someone with whom they are familiar, and whose judgment they trust. Some singers argue against singer-singer correction since this would produce pockets of idiosyncratically influenced pockets of singing; by contrast, a collective focus on the conductor ensures a unified interpretation and performance of the music.

There is, however, a sub-group of singers who seem to advocate and engage in some sort of singer-singer correction, and these tended to be the tenors – the smallest vocal section. Not only do tenors tend to be highly expert, given the lyric nature of their vocal contributions, but the size of the section allows members to get to know and trust each other. Tenors describe being direct in their correction and trusting in their receipt of such correction, as for example when they "try and nudge people," or "you say, 'Measure thirty-four there's a rest there,' and that's it." Members of other vocal parts rarely described such direct correction, but when it was mentioned, singers described how they deftly got around the possibility of offending someone by phrasing the correction in the form of a question. One alto actually asks neighbors if she is the possible cause of error, so that "If a person next to me starts covering his ear, I'll be like, 'Is it me?'" The focus on correction of both self and other is also shared with a familiar neighbor, and is carefully shaped, as in the case of this bass:

> *"Like Mike and I now, we both say, "Laben or Lieben?" We kind of help each other back and forth and be like, 'Yeah, I don't think we're getting this*

exactly right' but it's not to be like, 'You're making a mistake and I'm right.' It's like, "I don't know if we did that right and I've been doing it wrong."'

Using a question form to communicate that something might be wrong with what one is hearing leaves the questioner in the vulnerable position of the "unknowing," while allowing the person who is being asked to feel that they may be possibly knowledgeable, rather than a poor performer.

e) Repair via the conductor. The conductor is also responsible for facilitating and directing repair, influencing what singers focus on in poor-quality moments. Apart from creating and maintaining the mood within which errors are dealt, the conductor verbally and gesturally directs the choir. Practically speaking, the conductor provides feedback to singers in rehearsals about the quality of their performance, directing them to note particular portions by marking it in their score, and describing how to make these musical elements even more beautiful. As described by one soprano, by associating the admonition of "'Oh, do it more beautifully, even more beautiful still,'" with the person of the conductor, he "acts as like a reminder of all those things" when it is time to perform. The conductor also uses gesture to correct singers. One soprano describes the frantic attempts at correction in a public performance, in which "the conductor's trying to get the eyes of people, and…he's conducting like this—frantically." The conductor not only demands more of their attention, but singers also focus on the conductor, returning to a "secure," expert base of direction. As this bass describes, "Generally, conductors help, because they know the score…So, if they know you're supposed to be somewhere and they see that you're lost, they'll do gestures and things like that to help you along, to let you know that, 'This is where you're really supposed to be.'" The conductor tunes one

back into the performance of the group, since he helps the group "have one idea" about what to perform (bass).

Apart from directive speech and gesture, the conductor also displays a facility in the ways he communicates with singers that encourage their engagement with him in poor-quality moments. Although he ultimately determines the repertoire and the rehearsal process, the conductor is open to hearing singers' concerns when they feel challenged by particular pieces of music. With a show of their hand, singers can indicate that they have a question, and the conductor will entertain their need for clarification. One tenor even recounted approaching him directly during break to express his concern over our slow progress through a particularly challenging set of rehearsals of the very long, and very German *St. Matthew Passion* by Bach. The conductor did not rebuff the singer's request for more rehearsals, but actually shared his own concerns and his anticipation of the need for more rehearsals. In the course of rehearsal itself, the conductor also uses a variety of modes of communication to ensure that singers understand how repair should be undertaken. In general, singers think that he "is one of the clearest conductors I've ever seen. He really telegraphs to you what you need to know" (soprano). An alto describes how "he communicates very well what he wants in different ways. So he'll sing the line the way he wants it. He'll also sing it incorrectly, so we can hear the difference. And after he's worked on a bit, a section for a while, he knows where to stop and say, 'Okay, we need to come back to this'" (alto). The use of different means of clarifying what needs to be done, coupled with a knowledge of when people have had enough, lets singers feel as if the conductor is in tune with their needs, as much as they are in tune with what the conductor demands.

3. Other factors that influence feeling and focus

A number of other components influence the experience of feeling and focus in these beautiful moments. The choir is a context in which diverse elements are brought to bear on the performance of a particular musical work. Bringing almost two hundred voices together, and then successfully combining them with the efforts of soloists and instrumentalists demands a high level of engagement from the ensemble, as well as masterful, expert, and confident contributions. The structure of the circumstances of the particular moment also provides certain affordances for the appreciation of the moment. Specifically, the context of group activity (e.g. public performance or rehearsal), and the structure of the music at a particular point in time impact how a specific moment will be apprehended. A look at how singers characterize their experience of beautiful moments beyond feeling and focus reveals how all these various factors are consequential.

3.1 Embodied focus

Attention is performed by a number of the body's senses, but the primary senses with which one takes in information about the quality of a performance include the senses of hearing and vision, which, in turn, are represented in the sound the choir creates. Hearing others is necessary in choral singing, since singers need to hear both themselves, and others in a suitable self-other ratio of sound (Ternstrom, 1991; 1999). In beautiful moments, hearing shapes the collective sound since singers can "literally feed off of each other and make each other better" (alto). As another alto describes, **"you find yourself tending to blend better with people that sing more like you, "and thus the conductor's**

manipulation of seating assignments may be key for experiencing beauty. One can also tell by the sound whether the group is collectively acting on the cues of the musical score and from the conductor (soprano); hearing the music "flow" signals that the group has "gotten it" (alto).

The sound of the choir is also shaped by and reflects the literal visual focus of the collective. Being able to "really read his eyes and his hands" enables singers to feel connected to the conductor (soprano). Yet, looking at others also provides information that "…this is amazing! It's happening, you know" (bass). As previously mentioned, seeing others experiencing the moment's beauty is itself inspiring as one recognizes, "Yes, yes, they're smiling—the choir is going for it… If you look around, everybody seems happy" (bass). Singers might draw each other into their own experience by signaling their feeling. An alto recounts sharing with another singer the experience of "this one part where she would just turn to me like almost with tears in her eyes, and she'd be like, you know, like literally hand to her chest like 'Oh, my God,' and I would be like, 'Yeah, I totally feel it.'"

In a similar fashion, a given poor-quality moment is also experienced via the embodied focus of choral actors. As the conductor once barked in rehearsal, "I *hear* people *looking* down!" What one sees, particularly the visual cues from the conductor, impacts one's performance experience. Just like the conductor, singers hear what others are looking at, as this soprano describes:

> *"I think when people really do what they're supposed to do, that it's like, "Watch [the conductor]," rather than look at their music and listen. I think there's really a qualitative difference. You can tell the pickups for entrances, they are actually timed to exactly right. The same thing with cutoffs. If you are cutting off three quarters of the way through the beat-- people actually do. [The conductor is] showing this, they just don't look half the time."*

As previously described by one alto, "you can't do what you can't see," so whether singers are distracting themselves away from the conductor, focusing too much on their score, or are simply unable to see past taller singers, the quality of the sound is nevertheless lowered in such instances. Hearing not only reflects vision, but is itself consequential for poor-quality moments. As this bass recounts, "even though you may read music and know the music, if someone sings it differently around you, you are kind of swayed sometimes to what they are doing even though in your heart you know." While the score and conductor are collectively-accessible coordinating mechanisms, the sounds of neighboring others are nevertheless a powerful influence on a given individual's performance experience.

3.2 Engagement

Beautiful moments involve a sense of full engagement by the individual and by other performers, in which people feel personally responsible for the group's performance. There is a "sense that the people in the choir have risen to the occasion and are prepared…people are, including the orchestra, are just a little more in tune with what's happening, a little more on edge" (alto). Or, as one older bass put it, such a moment "probably isn't gonna happen if you don't have a group that is serious about music-making." Instead, making beautiful music involves the mindset of this alto who wants to be "putting in as much as I possibly can during rehearsal and in performance. I don't feel really satisfied if I haven't put in as much effort as I possibly can." As another alto describes, "You can't go in and be like, "Oh, I'm just hanging out with a group of friends." You have to go, "No, I'm here to work," and you are working with friends and you are having a good time, but you're still working."

Engagement in beautiful moments also involves an intense focus on the task at hand. No matter the form of attention, be it in the vision or hearing of choral members, singers also report that perception and awareness are intensely undertaken. Singers have a sense that "everyone seems completely focused" (tenor). The intensity is reflected in the effort singers feel in putting forth a beautiful performance, as an alto describes how "it's hard to sustain that level of energy and focus on the piece. No matter how beautiful it is for two hours, I think it's just hard to lock in for that long." A tenor also similarly describes how he experienced certain moments as beautiful since "sometimes the John Adams piece[1] kept me pretty well focused a long time because I had that emotional experience attached to it that was pretty intense," but that in other instances, his "mind would wander to other things." Being deep in concentration was thus an important aspect of being engaged in beautiful moments.

In poor-quality moments, the engagement that seems to be collectively shared in beautiful moments is no longer as apparent. As we can see in an older alto's following account, while factors such as age might limit one's ability to perform well, singers can still exercise discretion in how they will expend their efforts:

> "…what would slacking off entail? Well, I think you think about the…runs in Handel Messiah. I mean, some people technically just may not be able to—I think I used to handle those melismas better in my younger years. I haven't been handling them as well as I used to be able to, but that sort of thing could be considered slacking off. I think if you decided that you were only going to hit every other note in a melisma rather than trying to do the entire run." (alto)

As suggested in this quote, one's engagement is interpreted as a reflection of one's commitment to the group enterprise of performing each element beautifully. When some singers don't demonstrate full involvement, this has implications for how much they are viewed as belonging to the group. As another alto describes:

"there were a few choir members who were like, 'Uh, I don't like this contemporary music. Why are we doing it?' and just kinda dragged things down a little bit…. I'm really not a fan of Haydn. Other people like him, that's great, but that doesn't mean that I'm not gonna put a hundred and ten percent into it… there's always something you can get out of it and especially with this type of group, you made the commitment. You don't just say, 'Oh, I don't like the piece. I'm not gonna sing.'" (alto)

Engaging with the music thus has implications for self-selection into and out of the choir, and lack of engagement signals to others that one does not know, or care to be a "good choir member." As described in the examples of distractors in poor-quality moments, flouting choir rules and norms, such as text messaging on stage or joking during rehearsal, disturbs others and can result in complaints being lodged with the director or the manager. Poor-quality moments thus not only involve direct breaches in the task of coordinating sounds, but also breaches in the social ordering of the choir. Adherence to the rules of the handbook, and to the norms discussed leaves one in good standing, but a break of the norms is met with criticism, ensuring a negative experience for the offender. When a tenor forgot to bring black socks to wear with his tuxedo in performance, he was not only stuck with his white socks, but also had to endure the whispers of "socks, socks, socks" floating around him as the choir assembled to go on stage. He knew who the particular instigator was, a woman singing near to him, and he reported that "for the few days…I think there was a certain barrier, at least that I was putting up...And there was a lot of like animosity… the warm-ups were like, really weird, because we're sitting next to each other. You know, she wasn't singing in the way she was, I wasn't singing the way I should have been..." Poor-quality moments such as this reveal how the way singers engage with each other, and the way they engage with music are richly intertwined.

3.3 Mastery

The expertise being demonstrated also influences whether a particular moment is experienced as beautiful or of poor-quality. Beautiful moments involve positive feelings about the group's expertise: the enjoyment of doing well for its own sake, feeling confident, and appreciating the lack of errors in the group performance. First, performing well is an autotelic experience, enjoyed for its own sake. One tenor describes his perspective: "I think it's the reward of really doing your very best with a whole set of people who are doing it really well…and you want to say, "Yes, I'm so glad I'm up here with you guys." A sense of accomplishment accompanies "when you really know you've nailed a performance. And it's that collective feeling, but also individual feeling…" (tenor). Knowing that one has attained the goal of all one's hard work is at the forefront of these moments and it can feel like "all of your work that you put into it was in that moment like, 'This is what it was all for'" (bass).

Second, confidence is generated that allows people to fully give themselves over to the music. This confidence, derived from knowing the music really well for instance, is necessary to match the conductor's sudden increase in tempo, for example. The use of "rehearsal, study, and practice" to build one's expertise has to be coupled with "the self-confidence to sing and to sing out and not wait for one's neighbor," according to one bass. Third, in these moments, performers fully appreciate the expertise of all the actors involved in performance. The experience is one of accurate performance, which is difficult to achieve. After many corrections in rehearsals, "there's a sense of enjoyment if there's a part that the men have been working on and it's tricky with the rhythm or whatever, and they do well" (alto).

Expertise in beautiful moments also involves a focus on self-regulation. Singers cannot allow themselves to get too caught up in the moment. This alto states "the focus during the performance has to be on getting to those points but not allowing yourself to linger at the same time. You have to get the job done in order to give that experience to everyone in the audience." As one tenor concurs, "it takes so much of my mind to stay— it's like rolling a boulder up a hill or something. You can't stop to admire it or it'll crush you… I'm busy singing and I have to keep singing, and it's happening in the background." Getting the "job" done (well) demands a focus on how the self is performing the task, while fully participating with others, and appreciating the beauty of these moments.

In poor-quality moments, singers no longer apprehend the expertise of a collective at work, but rather the diverse and fragmented quality of the choir's efforts. As this alto describes, what singers apprehend in these moments is the lack of expertise being demonstrated: "I felt like the basses weren't doing well as some of the other sections on the Bach and I'm not sure if that's true or not but I was kind of like, 'I'm not going to, I don't want to tune into their tonality if it's not quite right'" (alto). The lack of expertise on the part of singers in one vocal part thus not only disjoints the sound, but also produces further discord as singers distance themselves from that particular element of the music.

Rather than the confidence that marks beautiful moments, poor-quality moments are marked with uncertainty about what needs to be done. Singers feel stupid, awful, and uncomfortable, questioning why they did what they did, or what could possibly have happened with another vocal part. Doubt, rather than certainty in one's expertise, and in

the excellence of the choir seemed to accompany the self-focus described in the prior sections. A number of singers describe how, in these moments, they focus on the amateur, rather than "professional" nature of the choir. One soprano reminds herself that the choir is "using people who are willing to sing, some of them who can't read music and are not very good. And it's really different. We just learned to accept it—accept less." The frustration that also accompanies these poor-quality moments is also derived from the failure to accomplish the goals one has set out to achieve. In this soprano's account of "I'd really rehearsed something and then what drove me nuts is then if I'd screw it up because everything around me was a mess," her own expertise, and ultimately the expert performance of the choir, were all rendered meaningless by the missteps and inadequate preparation of others.

3.4 Context of activity

According to University Chorus performers, both beautiful and poor-quality moments are experienced in both rehearsals and public performances. The latter context, however, provides a certain set of circumstances that better afford for experiencing beautiful moments, while the former actually allows for poor-quality moments. In (deliberate) rehearsal, the focus on problem areas results in hopping around the musical piece, leaving a sense of the unified whole to be acquired until the week of performance, unless one listens to a recording. The linkages between musical elements at the macro level, i.e. the sounds and story lines of one movement to the next, rather than the links between sopranos' and tenors' sounds, are finally apprehended in performance, when the entirety of the work is usually first performed (due to the length of classical holy works). It is also usually only at performance time that all of the performers, be they

instrumentalists, or other singers, are present to fully enact the entire work with the choir. Finally, the role of building architecture and acoustics cannot be dismissed, since the resonant space of the concert hall adds a richness to the sound not afforded by our rehearsal space. As one alto describes: "we rehearse in kind of a crappy auditorium and then we move into [the concert hall] and then the first time we sing there it's also one of those moments where you go, 'Wow, that was unexpected.'"

Concerts involve a different sensory atmosphere not only in terms of sound, but also a general heightening of the senses, at least partly due to the physical context on stage, and the presence of an (paying) audience. Some people, like one alto, simply "kinda get a high just performing, just being on stage." As this tenor describes, the physical context on stage shapes one's focus since "in the beginning of the concert the lights come up and your world is limited to the front of the stage and that includes the orchestra and the whole chorus." The lights shine right down from above the choir and, from in front of the stage and behind the conductor, into the choir's eyes. Finally, having an audience present "raises the stakes" or the consequences of having a less-than-beautiful performance. There is a sense of responsibility towards the mass of people who have come to hear a performance, and a sense of duty about giving them the most beautiful performance that one can render. In concert, singers are more mindful about doing what it takes in order to not mess up in front of a sea of people.

Unlike performances, rehearsals are not designated arenas for perfection, but instead "in rehearsal you're supposed to make mistakes…You're supposed to screw up, that's what it's there for" (soprano). Rehearsals involve continuous realizations of "Oh, if we did *that* it would be more beautiful," and "so, by nature, rehearsals are little glimpses

of how beautiful it might be," and tend to afford more poor-quality than beautiful moments by virtue of the constant stopping, correcting, and restarting (alto). A number of factors, such as the occasion of correction, limit the rehearsal arena to one of poor-quality moments. First, unlike performance, in rehearsals singers may encounter a piece for the very first time, and the conductor's constant note-taking and provision of new information about the piece in each rehearsal also demonstrates that he too has more to learn about the musical work in the weeks of preparation for a concert. This would understandably limit the confidence and expertise usually associated with beautiful moments. Second, the whole of the musical work is difficult to apprehend given its novelty (in some cases), and the constant corrections that interrupt any sense of how a whole movement or piece sounds. The conductor's deliberate focus on difficult portions of the music can leave one unsure of the connections amongst sections and movements until the whole work is performed in dress rehearsal.

A third characteristic of rehearsals limits performance: the fact that only the choir, conductor and accompanist are present. The accompanist, although skilful, is a spare representation of the orchestral ensemble, and the rest of the work remains incomplete without the soloists or other choirs that will also take the stage on performance night. Thus, it is difficult to feel the people as a whole without the sights and sounds of all the other performers who will join the choir in collectively performing the music. Fourth, even the physical space of the rehearsal room lays bare errors more readily than the performance spaces singers experience. As one alto put it, "[The rehearsal space] is so 'dead' that you can't hide anything." This "deadness" refers to the lack of acoustical resonance usually found in concert halls that enhances the sounds being produced. Both

singers and the conductor agree that the lack of resonance make slight errors sound more pronounced than they would in concert, but this allows the choir to recognize areas that need improvement.

The opportunity to discuss performances outside of rehearsal and performance is also important for communicating about beautiful and poor-quality moments. Since one is engaged in the task of singing, and cannot communicate one's opinions and experiences while on stage, the time immediately after a concert is a major occasion for sharing what one has experienced, and corroborating this experience with others. There is a lot of talk while coming off the stage, filing out to the main rehearsal space to get changed, and if travelling, on the bus back to Ann Arbor. It is in these non-singing spaces that talk allows members of the group to ascertain whether the beauty or poor-quality of a particular moment was indeed a collective experience. As one alto describes, "I know the people around me are very passionate about music, anyway. We'll have conversations during break about, 'This is a really beautiful part here,' and the folks that are around me feel the same way about what we're singing. I think it's because we discuss it." Talk also perpetuates the feeling of poor-quality, as this tenor describes how "there are certain negative comments that are sometimes said like immediately after a piece is finished, or 'Oh, I didn't that do so well'...and that sort of puts a damper on the interactions you have with other people." Conversation also facilitates the sharing of a focus on poor-quality moments as this bass describes: "it always seems to me that many other members of the choirs seem to point out specific spots that didn't go so well that I didn't pick up on…It's just like, 'This person's flat,' or 'This happened,' or 'He was arrogant.'"

3.5 Immediate circumstances

The elements of the immediate rehearsal and concert contexts are also consequential. For example, a beautiful moment in which the music feels like a gorgeous swell of sound sweeping up the entire body of singers is easily ruined by the discomfort of the seats on stage. One soprano describes how "it's hard to have it [a sense of beauty] last the entire piece because half the time you're so uncomfortable. My back is killing me, I'm trying to sit still and sit up straight or whatever. So, that can be very distracting, and that's gotten worse as I've gotten older." The circumstances surrounding a particular performance can also potentially limit feeling beauty. A prime example of this is the one-time concert of Bach's *St. Matthew Passion* held on Good Friday evening. After months of frustrating rehearsal of this long and difficult piece, the night of the concert was met with a severe snowstorm that delayed the children's choir by one hour, slowed down many of the orchestra players driving from Detroit, and in which a few singers had automobile accidents on their way to the concert hall. The already three-hour long concert was thus delayed by an hour in which we sat on stage, watching the audience mill about the floor of the concert hall. For this alto, "it was sort of a traumatic performance anyway with everything that had happened…I don't want to say it left me cold because that's too harsh. But again, it wasn't the, the 'mountain top' experience I thought it might be."

For others, however, the immediate circumstances evoke feelings of beauty, even in the case of the *St. Matthew* performance. For the accompanist, who joined the choir on stage to play the organ, it became an experience of impressive perseverance:

> *"…that opening chorus, after all we went through, we sang that. Standing back stage wondering, 'Alright, is it gonna happen? Is it gonna partially gonna*

happen? What are we gonna do? What are the financial implications?' all of that stuff. Then, just to go out on stage, be with the symphony, be with the chorus and then the little kids and just start. And this glorious music in this safe haven of [the concert hall] while this massive storm was happening was a rush. It was just, "Here we are a part of something that's historical, that's still relevant. It's biblical, it's masterful, it's one of the greatest pieces."

The event was already poignant since the *Passion* was being performed on Good Friday evening, the same day Christians were celebrating the death of Jesus Christ. As one alto describes, "the fact that we're only singing it once on Good Friday as a religious or spiritual kind of experience…might heighten the experience, because you're basically telling the story that's very pertinent to something that's happening in the spiritual lives of those who believe, right?" The various circumstances surrounding a concert can thus not only detract from one's experience, but also reinforce the feelings of beauty that can arise in performance.

3.6 Musical structure/quality

For several singers, the form of the music itself elicits the sense of beauty associated with a particular moment, and can also be the source of great frustration. In terms of feeling beauty, one tenor attests that "it's just how ends are written like they're meant to be beautiful and maybe I'm swayed by like larger finale-ish sounds than other things." Apart from endings, certain phrases or transition points also seem to elicit feeling from performers. These structural forms seem to be inherently enjoyable, as found in the "initial bounce," and "really beautiful minor chord" that sets up the "Since by Man came Death" movement in Handel's *Messiah*. Beautiful moments also involve recognizing or focusing on end points as forms that signal the conclusion of the narrative being performed. The same tenor continues to describe, "Maybe it's because at that point you have arrived at the point. You have completed the story. You can see the whole thing, so

it's like there's a sense of finality of having succeeded of completion like it is done. It is good." An alto agrees that "those moments are just—it's like at the end of the piece or at the end of the movement."

When musical forms present a challenge to performers, however, the musical structure can easily contribute to a poor-quality experience. Difficult music limits focus to successfully executing quick changes in dynamic (volume) levels and pitch, foreign, hard-to-pronounce words in Russian and German, and tricky rhythms, which all easily throw singers off from focusing on the music as a whole. As one alto describes, "It's always the darn little things. Overall, of course, its like Guitar Hero right, I would pass. I'm heading 98 [% accuracy], but it's those 2% that can really ruin it for me." Feeling is also transformed by the musical qualities in poor-quality moments. In addition to not being able to fully comprehend the message being communicated when the piece is in a foreign language, the difficulty of meeting the standards of correct pronunciation detracts from singers' ability to "start hearing the phrasing properly, the dynamics properly, the flow of the piece, [to be] able to watch the conductor and really follow what he wants you to do" (tenor). In this way, the feeling for the whole of the music, as well as the message being communicated are limited by the form of the music.

ELABORATING ON KNOWING AND ACTING IN COORDINATION

Exploring what people experience as beautiful or not as they make music as a group reveals that both attention and feeling are important, meaningful aspects of coordination. While attention, or mindfulness, has taken the forefront of our theorizing about coordination, the feelings or aesthetics of coordination are also important to those who actually perform coordination. Asking choir members about what they feel and

attend to reveals that a feeling of the whole, and a focus on the whole in beautiful moments contrasts with an explicit feeling of fragmentation in less-beautiful moments, that is accompanied by an atomistic focus on parts and repair of the violated whole. What is striking in these accounts is the primacy of the whole, with the relational practices that have been the focus of the coordination literature taking a supporting role.

Based on these insights from the data, Figure 2.1 summarizes a model of knowing and acting in coordination. The model demonstrates how coordination is sustained via the maintenance or modification of actions that are associated with apprehending a whole, or parts, respectively. The perceptions of whole or parts that influence these coordinative responses are known through the perceptual mechanisms of feeling and focus. In turn, the data reveal that feeling and focus seem to be influenced by several other components of the coordination experience, viz. the conductor's role as an embedded, co-performing leader, and "person-based" elements such as emotions, engagement, expertise, and the situated nature of choral coordination. In describing the components of the model, and their relationships, several propositions are also suggested. Final reflections on knowing in the performance of coordination are also offered.

1. Coordinative responses

In the performative context of the choir, coordination is an ongoing phenomenon, and the interrelation of actions amongst singers, conductor and instrumentalists at any given moment can either enable further coordination, or limit the use of a particular pattern of interrelation. The responses in the interactional sequence that comprises coordination can be either of the same quality as the preceding actions, thereby maintaining performance, or differ from prior actions, in an effort to restore coordination

to a quality that ensures successful performance. In performance, singers seek to maintain

the actions that are associated with pleasurable feelings of beauty, or to perform actions

of the same quality on other occasions, such as singing as lyrically as possible. In

contrast, when they experience poor-quality coordination, singers not only desire to stop

the actions associated with the accompanying discomfort but also do their best to

maintain the interrelation of actions by employing new action-sets that enable

reconnection with others and ultimately with the whole, whether it be maintaining the

conductor in their line of sight, or listening more closely to the interplay between vocal

parts. As described so far in Chorus performers' accounts, the conductor, singers and

accompanists all try to correct the qualities of their own efforts, or the efforts of others, in

order to produce a beautiful interrelation of sounds.

> *Proposition 1: In performative groups, individuals perform coordinative behaviors in order to facilitate further coordination.*

> *Proposition 2: The coordinative behaviors performed by individuals in performative groups facilitate further coordination either by maintaining current efforts or by limiting actions that disrupt coordination and employing different behaviors that serve to repair and restore coordination.*

2. Contents of knowing

Whether or not performers maintain the quality of their efforts or seek out

alternative behaviors that would better facilitate or sustain coordination depends on what

they perceive or know about the state of coordination quality. One major finding of this

study is that members of the choir can first of all know the whole, as well as disruptions

to the whole in the form of a number of discrete parts. In this section, I describe "whole"

and "parts" as the primary percepts of coordination.

The ultimate purpose of coordination is to accomplish some whole through the interrelation of parts. Since the whole is explicitly associated with the intrinsically enjoyable aesthetic of beauty, it is what performers desire to know, and seek to maintain in coordination (Peterson & Seligman, 2004; White, 1996). Performers seek out and desire to maintain beautiful experiences of a whole since those are "the moments…that you live for" (bass), and "the longer it happens…the more exciting it almost becomes" (tenor). Just as what is not beautiful is known only in relation to what is beautiful (Strati, 1996), so too are the parts known in contrast to the whole (Sandelands & St. Clair, 1993). When people hear "just notes" instead of "music," they know that the members of the group are not yet acting in concert, or as an undifferentiated entity. This spurs repair in order to produce the "music" since "it gets really uncomfortable when things aren't exactly right" (soprano). The experience of parts and whole inform each other, since the former signals the latter's absence, and knowing the whole necessarily involves a transcendence of parts. Ultimately, these two perceptions are antagonistic in nature, one counteracting the other, suggesting the following:

> *Proposition 3: "Whole" and "parts" are the fundamental percepts beheld by individuals in coordination, since coordination involves the interrelation of diverse elements to enact some organizational whole.*

> *Proposition 4: "Whole" and "parts" are antagonistic percepts; knowing one also informs the absence of the other.*

The importance of the whole in the coordination of the University Chorus helps us consider how this has been hinted at in the coordination literature. Weick (1993), for example, describes how "Dodge continued to see a group and to think about its well-being…the rest of the people took less notice of one another" (p. 638). The dissolution of "the entity of a crew" (p. 637) is attributed to a lack of this "seeing" or sensing of the

group, which is not discussed much past these pages in the article. Other accounts of coordination mention "collective work proper," or the emergence of a new form in coordination (Dougherty, 1992); the system supported by mindful actions towards others (Weick & Roberts, 1993); the superordinate work process facilitated by sharing goals and knowledge (Hoffer Gittell, 2001); or the organizational whole in which individuals feel included (Quinn & Dutton, 2005). In all cases, the whole is described as fundamentally important for individuals to apprehend; yet, until now, the descriptions of the whole itself, and how individual actors engage with it have remained superficial.

3. Perceptual mechanisms

Both the whole and parts are perceived or known through the perceptual mechanisms of feeling and focus. By considering the relationship between these forms of perception or knowledge gathering, as well as the forms or percepts they allow us to know, this model is as much concerned with "knowing" as it is with "knowledge." The relationship between these perceptual mechanisms in coordination has not been made explicit in the literature. Based on the experiences of Chorus performers, it remains unclear whether individuals' feelings about the beauty of particular moments cause them to focus on a whole or on discrete parts, or vice versa (hence these relationships are represented by dashed arrows in the diagram of the model). Research on organizational knowledge pits against each other the logical-rational, objective form of knowledge derived from attention, and the subjective, tacit form of knowledge derived from feeling (Polanyi, 1966; Strati & Guillet de Montoux, 2002; Taylor & Hansen, 2005; Tsoukas, 2005; Tsoukas & Vladimirou, 2001). The stories of Chorus performers, however, further elaborate on the nature of each form of knowing, and the relationship between them.

3.1 Feeling

Both feeling and focus appear to be involved in "skilful doing and knowing," whereby performers apprehend the fit and belongingness (or lack thereof) of parts as a whole (Polanyi, 1966, p. 64; Ramirez, 1991). When we look at feeling, we see how individuals simultaneously perceive a multitude of elements comprising a whole, and also how it is possible to experience the whole in various ways. While the whole is felt as the practical form of the task itself (music) or through the actors performing as a unit (people) in the Chorus, so too do aircraft carrier pilots apprehend the "system" or the "joint situation" by asking themselves "Does *it* feel right?" (Weick & Roberts, 1993, p. 363). Conversely, the corpus of choral singers feels fragmented and disjointed, and the music is also felt as formless and indeterminate in poor-quality moments, much like the dissolution of the "entity of [the firefighting] crew" (Weick, 1993).

The above examples suggest that coordination research has missed something by only considering focus as a form of knowing/mechanism in coordination. Although the senses may be especially engaged in a performative context, tacit, subjective, aesthetic forms of knowledge seem to be important in coordination. Just as a subjective sense of knowing helps scientists select what "feels right" to explore (Polanyi, 1966), it aids Chorus members in knowing whether to maintain their actions, or do something differently to acquire the longed-for feeling of beauty. This is truly "organizational" knowing since knowing through beauty is at once personal (beauty is a subjective, personally-felt sense of pleasure) and collective (derived from the ensemble performance of the choir; (Tsoukas & Vladimirou, 2001)). Individuals thus draw on a richly-informed, meaningful kind of knowing that guides how they coordinate.

3.2 Focus

In contrast to the rich descriptions of feeling in the coordination of the Chorus, most accounts of coordination seem to suggest that the whole is primarily engaged through socially-mediated cognition and lean information-processing (with Quinn and Dutton (2005), as a notable exception). Focus seems to parallel feeling in the Chorus and this redundancy might suggest that focus is not necessarily the prime psychological mechanism involved in coordination. However, the role of focus in facilitating repair in poor-quality moments suggests that it is important for maintaining the basic processes of interrelating actions, especially when these processes break down. The experiences of coordinating as a choir highlight the embodied nature of attention, reveal how attention can apprehend both the parts and the whole, and also describe the effortful nature of mindfulness in the repair of coordination.

The accounts of Chorus performers broaden our notions of attention in organizational research by describing the embodied and distributed nature of attention. First, talking about focus in coordination in terms of using the body to see and listen reveals the interplay between mental states and the immediate context (Clark, 1999; 2006). This clarifies how information is shared in the direct interaction described in so many accounts of coordination (e.g. Dougherty, 1992; Hargadon & Bechky, 2006; Hoffer Gittell, 2002; Van de Ven, Delbecq, & Koenig, 1976). In addition to post-performance discussions, singers communicate their thoughts and emotions in performance by exchanging and attending to non-verbals such as looks, glances, facial expressions, and gestures (Bartel & Saavedra, 2000; Kelly & Barsade, 2001). The situationally-determined, bodily enacted attention that best occurs in face-to-face interactions may be important to consider for

understanding how people gauge the quality of their interaction (cf. McGinn, Thompson, & Bazerman, 2003; Weisband & Atwater, 1999).

A second aspect of focus in the Chorus suggests that attention captures much more than previously suggested in organizational research. Although attention in organizations is shaped by the nature of the (interdependent) situation (Ocasio, 1997; Weick, 1979), it has still been described as a selective spotlight (e.g. Corner, Kinicki, & Keats, 1994; Daft & Weick, 1984). The descriptions of mindful coordination in the literature already imply that attention in coordination has to take into account both the self and the other, rather than a singular focus. The results of this study go a step further in describing how focus is also used to apprehend a whole. Performers are mindful of how their actions fit into the context of the global sound around them (Weick & Roberts, 1993) by virtue of many aspects of the choral context. For example, they see the interrelation of the contributions of all the vocal parts in the scores in their hands and can see the unfolding state of collective performance as embodied by the conductor. Singers are thus capable of distributing their attention across their own contributions, and the gestalt of the contributions of others, in order to appropriately shape their efforts.

> *Proposition 5: Feeling and focus are the primary mechanisms through which individuals perceive parts and whole in coordination.*

3.3. Connecting feeling and focus

Considering how performers manage and use myriad points of focus further complicates how we think about attention in coordination, and also suggests a potential link between feeling and focus. Performers attending to the discrete elements of the error itself (and whether it is due to the self or others), the performance of the self, others' performance, the contents of the score, the musical accompaniment, and the actions of the

conductor in order to gather more information about how to correct the sound at that given moment. Attending to all these multiple foci is effortful, and little has been said about why people would engage in such efforts. Assumptions about task, goal, and reward interdependence usually explain why people coordinate. When these interdependencies are all high, people seek to maintain interrelations with others because they depend on others' efforts to serve as their own inputs, or need the entire group to succeed in order to maximize their individual reward (Bacharach et al., 2006; Wageman, 1995).

The unique context of the choir, however, precludes the sole use of levels and kinds of interdependence to explain the efforts of Chorus members. There are no monetary rewards, vocal parts are (at times) only intermediately interdependent, (e.g. the basses can produce a low C note without the sopranos), the conductor does not point out individuals, but praises and reprimands vocal sections independent of each other, and there are no critical, life-or-death consequences of the group's failure to coordinate (cf. Vogus & Sutcliffe, 2007; Weick & Roberts, 1993; Weick, Sutcliffe & Obstfeld, 1999; 2005). It is here that feeling seems to best explain the effortful focusing on the self, others, music, score, and conductor employed to restore the beauty of the choral sound. It is the intrinsic appeal of the whole, derived from its association with beauty, that draws people to restore it via attention to the qualities of the various elements that comprise the whole. In lieu of extrinsic rewards and structural constraints, the aesthetic of the beautiful whole draws, inspires, or motivates people to reclaim it by any or several means, including attending to multiple sources of information. This is another demonstration of how the

unique nature of the choral context allows us to consider new relationships between previously unrelated phenomena, such as feeling or aesthetics, and focus, or mindfulness.

Despite the suggestion of a positive relationship between feeling and focus, the apprehension of form via the conglomerate of senses (e.g. knowing the manner in which altos and basses complement each other in a particular movement), stands in opposition to the selection of information by discrete senses (e.g. listening out for the sopranos' entrance to hear how loud or sharp they are). Yet, while scholars differentiate between these forms of knowing and knowledge, they also suggest that the two are not separate, but that aesthetic, tacit, or felt knowledge serves as the basis for other forms of knowing (Polanyi, 1966). The parallel nature of what feeling and focus seem to perceive in coordination, and Gagliardi's (1996) suggestion that knowing develops from a "shuttling between intuition and rationalization" (p. 577), imply that although the two forms of knowing may not co-occur, they do inform each other. This literature on knowledge and aesthetics suggests that feeling precedes focus, such that the feeling of "everyone coming together" occurs before hearing "a block of sound." This would also suggest that knowing "something just wasn't right" precedes a focus on the particular vocal part or note that "wasn't right." Thusly:

> *Proposition 6: Individuals may not simultaneously employ feeling and focus, but the sense of form derived from feeling may inform what is to be a point of focus.*

4. Feedback loops of knowing and acting in coordination

Feeling and focus constantly take in the responses that comprise coordination. One tenor already described the building up of intense feeling "the longer it happens," where "its" maintenance refers to enacting a whole. Focus, too, is fed by the maintenance of performance as people describe focusing on the conductor in beautiful moments,

connecting with the performance of the whole. Attempts at repair also feed back into how

feeling and focus are engaged, as singers describe the "discomfort" (alto) of feeling lost

in the group, and the narrowing of focus on key portions of the score. In turn, feeling and

focus apprehend whether coordinative behaviors are being maintained or repaired, and

thus whether whole or parts are being experienced. While high-quality coordinating

involves a self-sustaining feedback loop, repair engages alternate loops, since it is

ultimately performed to either attain or restore the whole. When the actions that follow

from repair are perceived as enacting a whole, these actions are then maintained (double-

lined arrow). However, if these actions still render the perception of parts, then repair

must continue until a whole is perceived. This is what occurs in the training that precedes

a concert, where various attempts at correction by the conductor in rehearsal, or through

practice at home, or listening to a recording of the musical work all aid singers in seeing

how their efforts fit in with others to create a whole. This suggests the following:

> *Proposition 7: Feeling and focus are informed by the coordinative responses of maintenance or repair, and inform whether maintenance or repair should continue.*

> *Proposition 8: In high-quality coordination, the maintenance of performance by individuals involves a self-sustaining feedback loop between the perceptual mechanisms and contents of knowledge.*

> *Proposition 9: In low-quality coordination, individual efforts at repair involve a feedback loop with the perceptual mechanisms and contents of knowledge that either promotes new attempts at repair if parts continue to be perceived, or are maintained when a whole is eventually perceived.*

5. Influences on perception

5.1. Leadership and coordination: the role of the conductor

Performers know whether to maintain or repair actions by knowing through

feeling and focus whether they are simply performing parts or enacting a whole, based on

feedback loops between perception and action. Perception and action in the Chorus are strongly influenced by the co-performing leader and several person-based factors. I first consider the role of the leader in coordination, which has been described either in terms of a "manager-as-central-coordinator" who structures and enforces rules and routines that integrate the divisions of labor (e.g. Lawrence & Lorsch, 1967; Thompson, 1967) or has altogether been omitted (see Dougherty, 1992; Hargadon & Bechky, 2006, Quinn & Dutton, 2005). Because the importance of both aesthetics and focus is inhered in his personage, the conductor is an integral part of the stories about beautiful and poor-quality moments. In beautiful moments, his own expressions of pleasure indicate that the whole is performing to his own aesthetic standards, and in focusing on him singers infer that the whole is also experiencing such pleasure. In poor-quality moments, in addition to pointing out errors and providing directions to repair those errors, the conductor creates a positive emotional tone that allows performers to escape a narrowing of focus and thus envision how they can restore the whole. In looking more closely at the conductor's involvement in these accounts, we can see at least two aspects of leadership that are especially fleshed out with the choir: the leader as co-performer, and the leader as the source of group cohesion.

Rather than managing organizational actions at a distance, the Chorus' conductor influences coordination *in situ* as a co-performer with the group. Through the course of rehearsals and performances, he takes on several roles that demonstrate how he experiences coordination right along with the choir. First, he provides real-time feedback of the collective's performance: he is visibly "blissed out" along with the choir when things are going well, and indicates his displeasure when things go awry via speech or a

glare. In these ways, and at his place at the central "hub" or focus point at the front of the choir (Scheflen, 1976), he makes each individual aware of the state of the coordination of the collective. Second, rather than simply tell us to make a beautiful sound, he models how both focus and feeling are to be engaged in order to produce such a sound (Bandura, 1986). Focus is implicated in verbal directives such as "Listen more than you sing," but also in his modeling of "beautiful" vs. "poor-quality" forms of sound, that are usually coupled with gestures that relate to qualities such as the "height" or "warmth" of a sound. In then mimicking both the form of the sound and the gesture along with him, singers collectively focus on and relate their individual efforts to a single "idea" of the sound (see Figure 2.2).

The conductor also shapes feeling, or the collective sense of what is "beautiful," by setting up the associations between variations in beauty and certain forms of the sound (as a whole, or as fragmented). Although other leadership accounts describe how leaders supply followers with a "vision" of what the organization does or can do (e.g. transformational (Bass & Avolio, 1993), and charismatic leaders (Weber, 1947), the current account helps flesh out how the leader is directly involved in shaping such aesthetic knowing in coordination. With their high degree of expertise, on average, most Chorus singers might be aware of inaccuracies in performance, such as performing a B natural rather than a B sharp. In immediately making evident to the entire Chorus what he feels about "fragmented" kinds of sounds (displeasure) versus "together" kinds of sounds ("a necklace of notes made out of beautiful pearls") the conductor adds a layer of subjective understanding to singers' performance. He feels right along with the singers, imbuing performance with meaning by demonstrating its personal significance. As we

rehearsed the religiously-themed *St. Matthew Passion,* this alto described how "One of the things along with the message that I enjoy is performing a piece—like we're having [him] conduct a piece that obviously he really feels strongly about." The conductor's expert, educated, yet still subjective sense of what is beautiful, informs each individual singer's sense of the quality of their efforts as part of the group and so becomes part of the collective knowledge of the choir[7] (Tsoukas & Valdimirou, 2001).

The conductor's obvious exemplification of what it means to be a performer of the group ultimately draws performers to the group. As the only individual whose actions and expressions are collectively accessible to every member of the choir, he bears the fullest expression of the life of the group for the members of the group (Sandelands, 2003). Given his status as a preeminent conductor, he exemplifies the Chorus' consensual identity as an excellent, "almost" professional, regionally-renowned choir (Hogg, 2001; Hogg & Terry, 2000)**,** and his own reputed excellence was repeatedly cited as a cause for joining the group. Additionally, his common accessibility provides the "emotional ties," or feelings of common bond that hold the group together (Freud, 1959; Weick, 1993). These "ties" are essential in situations of non-disclosive intimacy (Eisenberg, 1990), where people work closely together, but do not necessarily know each other well, as is the case in the University Chorus. As one alto describes: "he is the glue…it's a common language to be able to talk about the conductor. Even if we don't know each other at all, I don't know the person six people down…I could say 'oh [the conductor] said this today, isn't that interesting?' That's the thing that we have in common for sure of all the other things we could have in common." This alto also goes on to describe how, in his behavior

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[7] This shaping of aesthetic knowledge is also performed by conductors of symphony orchestras (Marotto, Roos, & Victor, 2007)

conducting the group as a whole, the conductor is also able to make "you feel talked to, sort of individually even if he doesn't talk to you exactly". The conductor's communication style ensures that even while they experience being part of a whole, people do not experience a loss of the self. Rather than establishing close ties with a select set of followers (cf. Scandura, Graen & Novak, 1986; Wang et al., 2005) the conductor ensures that each individual feels personally engaged, allowing as many people as possible to effectively feel part of the whole in performance. This suggests:

> *Proposition 10: A highly-involved, co-performing group leader can influence the collective engagement of the perceptual mechanisms of feeling and focus by a performative group.*

The role of the conductor in the coordination quality of the Chorus' performance was strongly endorsed by singers at the formal member-check session. Singers themselves suggested that the conductor strongly influenced their experience. They specifically cited the role of the conductor's expertise and skill in shaping the choral performance. As one bass described in an email following the presentation: "The director is what guides the individual to make the group good or bad. A good director can take "marginal" singers and get a good sound. But a bad director, even with good singers, will have a difficult time getting a good overall sound from the group. As a fairly good singer, I have felt extremely frustrated singing in a church choir where the director was not a qualified choral director." As described below, this comment highlights how individual singer's characteristics (such as expertise) are intertwined with the conductor's efforts, and how their interaction shapes the coordination experience.

5.2. Person-based influences

Although the coordinated performance of individual singers and vocal parts is at the core of the experience of beautiful and poor-quality moments, the concern for beauty shaped by the conductor reveals the multitude of elements involved in coordination. Since aesthetic knowledge takes into account everything that can be possibly observed and felt by the senses, we can observe how a number of elements are involved in coordination that have previously been left unconsidered (Gagliardi, 1996; Strati, 1992). By asking people about beauty instead of directly enquiring about coordination, the roles of emotions, engagement, expertise, and the local situation in the perception of coordination quality were made evident, suggesting that a complete understanding of coordination may involve much more than simply focus and feeling.

5.2.1 *Emotions and coordination*

The accounts of these choral performers are rife with emotions, both positive and negative, in part due to music-making's involvement of emotion-processing centers in the brain (Peretz & Coltheart, 2003). Yet, despite its omission in other accounts, the positive emotions that accompany feeling and focusing on the whole in moments of beauty, and give singers a lift in poor-quality moments must surely accompany the moments of successful coordination described elsewhere (e.g. Hargadon & Bechky, 2006; Hoffer Gittell 2001; 2002). Similarly, the negative emotions that accompany feelings of fragmentation, and the focus on parts in poor-quality moments may be important components of coordination per se.

At first glance, it may be simplest to consider that positive emotions are derived from the sense of accomplishment associated with enacting a whole, since it meets the

very purpose of coordination. However, current theory on the influence of positive

emotions suggests that they might have a causal influence on apprehending a broad range

of environmental elements since they enable broader capabilities in thought and action

(Fredrickson, 1998; 2001). Conversely, negative emotions may influence perception in

poor-quality moments since they assist with narrowing singers' focus on what needs to be

repaired (Kelly & Barsade, 2001). Yet, because negative emotions can be disabling and

difficult to shake (Baumeister et al., 2001), positive emotions, whether derived from the

reassurance of others' support, or the use of humor by the conductor, aid in recovery or

repair, as people consider how to best move beyond the error. Not only does it seem that

emotions matter for coordination, but the group leader's influence on coordination might

stem from emotional manipulation, in addition to formalized control mechanisms.

5.2.2 *Personal engagement in coordination*

In addition to their emotional selves, Chorus performers also seem to fully

involve the physical, cognitive, and even spiritual aspects of their selves in coordination.

This implicates the role of engagement in coordination, another element left unconsidered

in prior coordination theory. Engagement with one's work is defined by the involvement

of multiple aspects of the self with one's role at work (Kahn, 1990). As described by

several singers, the self is intimately involved in the experience of a whole in beautiful

moments, or of discrete elements in poor-quality moments. This involvement is

accomplished in a number of ways.

First, the acoustical nature of choral performance warrants that people are aware

of the quality of their own contributions vis-à-vis the contributions of the rest of the

choir, since a suitable ratio of heard sound from the self and from others is necessary for

successful participation in choral singing (Ternstrom, 1999). Second, individual

intentional variations in timing, intensity, and pitch (or performance expression) are key

to any musician's communication of nuance and "shape" in the music that successfully

relays the message, story, or narrative in beautiful moments (Palmer, 1997). Indeed, at a

fundamental level, it is the myriad fluctuations in diverse individuals' reproductions of a

particular tone that give a "naturalness" to the choral sound, in comparison to an

electronic synthesis of tones (Ternstrom, 1991). Third, as described in a bass' account of

"witnessing" to his faith in beautiful moments, and other singers' descriptions of how the

choir fills a hole in their lives, highly-cherished aspects of the self are involved in the

work of singing with others. This "vital" engagement (Nakamura & Csikszentmihalyi,

2002) is fully expressed in the coordination that accomplishes beautiful moments, and is

frustrated in the coordination that limits the active involvement of the self and the whole.

Coordination in the choral context reveals the importance of personal engagement

in seeing coordination as meaningful or not. In addition to perceiving whether one is part

of a coherent whole or not, judgments are also made about whether others belong to that

whole or not. This sheds some light on how individual members of a whole perceive

themselves and others as part of an entity. Research on group entitativity usually focuses

on how those outside of a group perceive a group as a coherent, indistinct whole

(Campbell, 1958). This can be based on commonly-held characteristics of a group's

members, such as similar physical traits and actions (Ip, Chiu, & Wan, 2006); beliefs,

attitudes, and values (Sani, Todman, & Lunn, 2005); and similar knowledge (Yzerbyt,

Rogier, & Fiske, 1998). While the perceptions of outside observers influence whether

they individuate group members, and engage in stereotyping, less is known about how

group members themselves perceive the group as a whole or not. The level of

engagement and adherence to group norms (such as being engaged in task performance,

rather than text messaging on stage, or wearing the "right" socks) seem to be important

influences on whether people perceive their own group as a whole, and whether certain

individuals disrupt the whole or not. As described by the tenor who wore the wrong socks

to a concert, the breach in social norms led to ostracism that disrupted the actual

coordination of sounds. Ultimately, future research needs to consider that both the

individual and the group are present in coordination. Not only is it important that

individuals demonstrate personal commitment to the collectively-enacted standards and

ideas of the group, but it also matters that in doing so, individuals feel personally

connected to the work of the group as a whole.

5.2.3 Expertise and coordination

In addition to demonstrations of collectively-shared engagement, performers'

perceptions of a whole also seem to rest on the degree to which a high level of expertise

is being displayed across the choir. While beautiful moments involve feeling and

focusing on the smooth interrelation of sounds, poor-quality moments involve

apprehending that either the self or another person is not "getting it" or that someone is

"off." The ability to comprehend and perform a task fluently influences how people feel

about it (Reber, Schwarz, & Winkielman, 2004; Schwarz & Clore, 2007). Where

coordination is concerned however, people also have feelings about how the group as a

whole performs. Prior descriptions of coordination do not consider how the diversity of

expertise in an organization affects how people coordinate, or perceive the state of

coordination quality (cf. Dougherty, 1992; Hoffer Gittell, 2001; 2002; Hargadon &

Bechky, 2006). The choir demonstrates what people experience when coordination is foiled not only because they interrelate their actions more or less, but because they are simply not as fluent in the task.

The learning necessary to perform beautifully as a group is not only based on the wealth of experience performers have gained outside of the Chorus, but it is also developed with each rehearsal and performance. In describing how learning can be "organizational," scholars have described the role of the socialization of newcomers by more experienced members (e.g. Weick, 1993; Weick & Roberts, 1993). Additionally, descriptions of communities-of-practice apply the Vygotskian perspective on proximal learning to understanding how members acquire the culture and defining practices of the group (Lave & Wenger, 1991). This perspective also suggests that individuals learn from the "periphery" of the group, working closely with more "central" and more "knowledgeable" group members in order to become more "full" participants as they become skilled in the group's practices and understandings.

Although the University Chorus can be described as a community of practice, since members collectively desire to make music with others, and interact in weekly practices and yearly performances (Wenger, 2007), learning to sing beautifully as an individual and as a group is not accomplished through gradual advancement from the periphery to fuller inclusion in the group. As a novice four years ago, I was expected to do my best to keep up with others, although I was encouraged to talk to other singers about how to read the music and follow the conductor. An uneven distribution of understanding and skill cannot be allowed since the Chorus is meant to perform as a coherent unit, rather than through the solitary actions of individuals. Organizational

actors can be described as always trying to learn about the organizational whole, and while individual representations of the whole can be shared in order to develop a more complete picture (Argyris & Schon, 1978), in the case of the Chorus, it is the central figure of the conductor that represents and helps individual singers learn about the "whole" and their place in it.

The Chorus develops its expertise through a collective focus on the conductor's deliberate pointing out of errors, and shaping of the qualities of discrete elements of the music in rehearsal. This all takes place in distinct time periods in which an arena set apart for the practice and correction of attempts at coordination (rehearsals), is repeatedly engaged in order to later enact a work in its entirety (public performance). In rehearsal, people may be aware through their own senses that not everyone is "on the same page" (a literal concern for singers!), but this is made apparent to the entire group by the actions of the conductor. His use of deliberate rehearsal – making the areas and means for improvement obvious to the group – ensures that the almost two hundred singers all share a common idea of what sounds "beautiful" or not for the Chorus, and how to engage with the music for their individual parts, while interrelating this music with the contributions of the other vocal parts (Ericsson, Krampe, & Tesche-Romer, 1993). The use of explicit socialization processes and communication amongst organizational actors seems less important for learning in the Chorus than the shaping of temporally and spatially separate instances of practice by a central coordinator.

5.2.4 Situated nature of performance

The descriptions in the above sections have constantly referenced the "situated" nature of developing and demonstrating knowledge and expertise in performance.

Learning in communities of practice is "situated" since it is based in the performance of the practices that define that community in that space and at that time (Lave & Wenger, 1991). One means of knowing, organizational cognition, is also situated in terms of how particular procedures, rules, and forms of communication shape what issues people attend to, and thus how they behave (Ocasio, 1997), as well as in terms of how conditions of interdependence shape attention (Weick, 1979; Weick & Roberts, 1993). Other scholars describe how the practice of various organizational tasks depends on enacting knowledge about what will be useful for each particular situation as it occurs (e.g. Hutchins, 1991; 1995; Orlikowski, 2002).

The richly-sensual choral context fleshes out these ideas of how the immediate situation grounds organizational performance. Everything about the immediate situation, from how the lighting of the stage limits attention to the conductor, and how illness, the weather, and seating arrangements cause discomfort, are potentially influential for how coordination is experienced. The praxis of beauty involves the enactment of all that shapes what is beautiful *here*, in a particular instance or moment. Thus, the individual's moment-to-moment experience of comfort or discomfort, his/her (in)attention to other performers, and taste for particular musical elements all shape the immediate, felt form or experience of coordination. Additionally, the conductor shapes all these elements to some degree, influencing the emotions the group experiences via his facial and verbal expressions of pleasure and displeasure and use of humor, his transmission of personal meaning about performance, or in even selecting a rehearsal space with more comfortable chairs. Together, the conductor and a range of other elements unique to the individual shape how feeling and focus are engaged. This suggests the following:

Proposition 11: Person-based elements such as emotion, involvement of self with group, expertise, and subjective perceptions of the immediate situation can influence the engagement of the perceptual mechanisms of feeling and focus in individuals in performative groups.

Proposition 12: In addition to their independent influence, these person-based elements are also subject to the potential influence of the group leader in performative groups.

IMPLICATIONS AND CONCLUSIONS

The view offered by this model and its propositions reinforces other perspectives on organizational knowing, and also considers new relationships between organizational phenomena. First, the grounding of this model in how coordination quality is known in moments of performance, and how what is known in these moments influences future behavior, highlights the situated and enacted nature of coordination (Orlikowski, 2002). The role of immediate, situational factors and the moment-to-moment behaviors of the conductor and singers renders coordination an ongoing, emergent accomplishment based in a collective knowing what to do and how to do it. Second, while the view of knowing in practice based on the Chorus considers how cognition is inhered in action through the use of focus or attention (Weick & Roberts, 1993), it also considers aesthetic knowing as an important aspect of performing coordination. When we say actions in coordination are performed knowingly (cf. Orlikowski, 2002), we now have to consider how they are performed sensually, as well as mindfully. If we are to seriously consider how people apprehend form, and the effect this has on organizational behavior, then we must also consider how the senses are engaged, and how aesthetic knowing is represented in organizations (Taylor & Hansen, 2005).

In addition to the situated, enacted nature of knowing in coordination, and the role of the senses, a third implication of the model is the influence of a central leader on

feeling and focus in practice. While traditional views of coordination may have focused on its "management" (e.g. Thompson, 1967), and more recent perspectives have omitted the role of a leader in the performance of the collective (e.g. Hargadon & Bechky, 2006), the Chorus presents a clear case of a highly-involved group leader. The conductor shapes how and what performers know by his active co-construction of behavior and meaning with Chorus singers; by virtue of the joint focus and feeling in which he and the singers engage, he is not simply a manager, but a "co-performer." Since knowing is continuously being updated in ongoing performance, the conductor cannot restrict his role to enforcing the prescriptions of the score. Instead, he must be engaged with, and provide knowledge about the ongoing local and global coordination dynamics within, between, and amongst all the vocal parts in order to ensure continuous, beautiful performance. While it is not clear from these data whether a leader is a necessary component of the performance of coordination, the joint knowing of a group and its leader seems to matter a great deal for the coordination of a collective.

As a final contribution to what we know about coordination, this model suggests that understanding why people coordinate can help explain how the processes of "mutual adjustment" (Thompson, 1967) and "group meetings" (Van de Ven et al., 1976) might actually operate. In its simplest form, the model asserts that people seek to work as a group in order to experience beauty and not only sense when this beauty is not being accomplished, but also adjust their behaviors in order to maintain or restore the feeling of beauty. In the Chorus' singing, coordination and beauty are forms that are enacted by the very people that experience them and that are essential qualities of the work of singing as a group. By considering the intrinsically human endeavors of music-making and

experiencing beauty, we can see why people choose to persevere in the effortful adjustments necessary for coordinating successfully with others. By extension, we can also understand the appeal of the coordination of performative groups for performers and audience alike. The moving together in time of marching and dancing groups (McNeill, 1997) as well as choirs and orchestras not only produces something beautiful, but its beauty is remarkably accomplished through the simultaneous efforts of scores or hundreds of individuals effectively responding to the challenges and breakdowns of coordination.

Limitations

By pointing to the signaling or informational qualities of aesthetics in coordination, the account of the University Chorus speaks to large issues in the field of organization studies. Yet, one can easily argue that the role of feeling or aesthetics is limited to the world of the arts. Scholars of organizational aesthetics would themselves strongly associate art and aesthetics, arguing that aesthetic experiences depend on the ability of the object to elicit surprise by the novelty of its form, which art easily does (Gagliardi, 1996), or that art objectifies or "makes solid" an interrelation of forms (Sandelands, 1998). The context of the choir fully involves the senses, since one hears one's own voice, the voices of others, holds up a score with text to be read and marked over, looks over a sea of others who are either singing, playing some instrument or looking on at the performance, and looks at a conductor providing myriad gestures, verbal directions, and facial expressions. Carrying out this investigation in a context in which the senses are not only richly involved, but in which beauty serves as an explicit standard for performance certainly led to more articulate descriptions of the role of

aesthetics in coordination, doing away with the "muteness" usually encountered when asking people to describe such tacit, subjective knowledge (Taylor, 2002). Yet, the role of aesthetics in coordination specifically, and organizational knowing, more generally, is not limited to the context of performance art. Rather, the feelings of working with others, the objects used, and the actions performed exist in all forms of work, since people, their minds, bodies, and senses, are present everywhere work is performed (e.g. Carter & Jackson, 2000; Strati, 1992; 2000).

This study is limited in several other ways. First, despite a desire to obtain a maximally-varied sample in terms of age, gender, vocal parts, singing expertise, and tenure with the choir, the homogeneity of several of these qualities such as the high level of expertise and average tenure of four years with the choir may account for the similarity of singers' accounts. While the minority of singers with little choral experience prior to the Chorus could not inform some of the ideas about the role of socialization in learning how to coordinate (cf. Weick, 1993; Weick & Roberts, 1993), their responses did map onto other singers' accounts. Additionally, despite the high average level of music expertise, at one time or another every choir member felt challenged by a piece of music they had not performed before, with difficult-to-perform language, or discordant harmonies. Thus, while I cannot account for how a complete novice would experience beautiful moments or engage in repair in poor-quality moments (except for myself, four years ago), what I do have are accounts of how fairly knowledgeable performers experience both kinds of moments.

Another limitation of this study is the self-selection of performers into my interview sample. These people may have had an inherently greater interest in and richer

experiences of coordination than other members. However, this self-selection was coupled with requests for interviews of specific individuals to meet the required maximum variation sampling desired. Thus, I limited interviews with altos beyond those I already interviewed, despite their requests to be included, and I focused on recruiting the less forthcoming sopranos and tenors. I also limited the number of personal acquaintances I interviewed, with whom I might share similar interpretations of the coordination experience, and whose accounts would thus limit the necessary variation needed to meaningfully question my own assumptions, and thus better contribute to theory elaboration.

Issues of generalizability and associative, rather than causal relationships, are typical limits on the use of ethnographic findings. A single community choir, let alone a Grammy Award winning choir, presents a unique case of organizing and coordination in a performative group that limits the generalizability of these findings to other forms of complex interdependent work. Additionally, as indicated in the description of the proposed model, causal relationships are difficult to determine. For example, it is hard to say whether positive emotions facilitate a broadening of sensory capacity to feel a whole, or whether the senses first apprehend a whole, and consequently elicit positive emotions. The University Chorus, however, is nevertheless useful in supplying researchers with a case of variance in coordination quality within a flat, highly interdependent organization. Additionally, ethnographic involvement is expressly undertaken to produce rich descriptions that can further elaborate or dispute our current ideas. These elaborations suggest propositions for future research, stimulating further insights into how people

coordinate, what they experience in coordination, and the consequences of these experiences.

Future Research

The accounts of how coordination is performed and experienced that are detailed in this research suggest a number of directions for further investigation. Four in particular stand out. First, highlighting the role of perception and knowing in coordination suggests that there are two perceptual mechanisms that serve to signal or mark the quality of coordination. Considering both feeling and focus should draw scholars' attention to how people develop knowledge in real-time, during performance rather than in moments of conscious reflection outside of performance. Further research can help identify other ways of knowing, other cues and aspects of knowledge-in-performance that are consequential for coordination.

Second, in bridging the worlds of organizational aesthetics and coordination, this research would suggest that aesthetics not only provides a kind of knowledge, but also serves a regulatory purpose, in a manner analogous to attention (e.g. Carver & Scheier, 1981). Tacit knowledge has not been formally addressed in the coordination literature, and aesthetic knowledge of the group has only been theorized (e.g. Sandelands, 1998). Linking these literatures should elicit questions about how aesthetic concepts such as beauty, ugliness, or tragedy can regulate and motivate performance, and about the role of the senses in other aspects of organizing, since coordination is an inherent part of the overall organizational process.

A third potential area of future research concerns how we think about attention in organizations. The current research suggests that attention can be distributed across

several elements, or apprehend a whole, corroborating recent research that demonstrates how people are capable of a holistic or contextual focus if suitably primed (Kuhnen & Oyserman, 2002). Although the interdependence inherent in organizing makes the literature on relationships in organizations valuable (e.g. Cross et al. 2002; Dutton & Heaphy 2003; Gelfand et al. 2006; Sanchez-Burks 2005), it seems possible and important for the individual to apprehend the system or whole in addition to the relationships between organizational actors and elements. Uncovering ways in which the whole can be made apparent to individuals in different kinds of organizations, whether through the use of artifacts, socialization processes, or the structuring of interactions, should be of interest to organizational scholars.

A fourth consideration for future research is the role of the leader in coordination. More than a manager operating apart from subordinates, the conductor of the Chorus is directly embedded in the work of the group. The conductor has a powerful influence on the communication, correction, meaning-making, and cohesion of the group. The conductor also influences the emotional context in which performance occurs, providing for the resilience observed in the choir's coordination. Examining the conditions that determine whether explicit or implicit forms of communication are used amongst a leader and group members, the use of leader- or member-provided correction, and how emotions are regulated and communicated across the group should better inform just how a person in the position of centralized coordination center can be effective.

Conclusions

So far, coordination theory has focused on how individuals enact their relationships with others at work. The role of beauty in the coordination of the University

Chorus has opened up our vision of coordination to look past discrete relationships to see the importance of the whole to individuals as they perform as a group. By considering the role of both aesthetics and focus in coordination, both performers and scholars become aware of all that can be possibly felt through the senses, and thus know more intimately how each element and action creates affordances for the work of the group. The creation of a beautiful sound by almost two hundred people, however, still remains a wondrous, and somewhat mysterious phenomenon. By revealing some of the key aspects of this phenomenon, as described by those who actually perform such coordination, this research further complicates our theoretical and empirical considerations of coordination. Ultimately, by noting the appeal of such a sound, we acknowledge the worthy endeavor of coordination to create something meaningful and beautiful.

CHAPTER 4

RECAPITULATION AND FINALE

> *The poem brings unconscious, inward knowing together with conscious, outward knowing.*
> *…[poems take] for their medium [the reader's] breath and hearing as he both enacts and imagines the sounds of the words and sentences…*
>
> — Pinsky (2002)

This dissertation has taken a performative lens to coordination and magnified the individual's experience of the group, and of beauty. As the former United States Poet Laureate Robert Pinsky describes in the above quote, the performance of the poem brings it to life in the utterance and apprehension of one's own enactment of sound. Hear the University Chorus performers singing out Schiller's *An die Freude* (Ode to Joy) set to music in the last movement of Beethoven's ninth symphony. Not only do we singers literally breathe life into the poem's idea of the unity of all mankind for audiences to hear, but each of us also hears him or herself singing out and doing so as a whole body with others. Individuals performing coordination not only see and hear their involvement with the group, but combine this conscious, outward knowing with a tacit, unconscious, inward, and felt knowing of the whole. The two studies reported in the preceding pages demonstrate that, in addition to focus or attention, people feel high-quality coordination as the beautiful form of a whole group, feel poor-quality coordination as the frustrating and disappointing form of fragmented individuals or parts, and are capable of articulating these details.

This concluding chapter aims to synthesize the insights of both studies and present some final conclusions. In doing so, I consider how the two studies, taken together, address the research questions presented in the introductory chapter: "*What are the organizational (concerning individuals and groups doing work) psychological (concerning the mental processes of these individuals and groups) processes involved in the coordination of a group?*", "*What is the content and role of individuals' attention in the continuously adaptive coordination of actions within a group?*", and "*How is coordination related to feelings of the life of the group?*" I recount how the results of the two studies complement each other in their contributions and limitations and how these results help to answer these larger questions.

CONTRIBUTIONS

The two studies presented and discussed in this dissertation are unique attempts at opening up the black box of coordination. Organizational scholars have built up a wealth of knowledge about how different kinds and levels of interdependence (Thompson, 1967; Van de Ven et al., 1976), uncertainty (March & Simon, 1958), mindfulness (Heath & Staudenmayer, 2000; Vogus & Sutcliffe, 2007; Weick & Roberts, 1993), relationships (Hargadon & Bechky, 2006; Hoffer Gittell, 2001; 2002), energy-in-conversation (Quinn & Dutton, 2005), team mental and situational models (Rico et al., 2008), routines and interpretive barriers (Dougherty, 1992), roles (Bechky, 2006), memory (Liang et al., 1995; Majchrzak et al., 2007) and improvisation (Harrald, 2006; Vera & Crossan, 2005) all influence coordination. Psychology, on the other hand, treats coordination as a fundamental human fact as we unintentionally entrain our actions (Richardson et al., 2005), associate liking and rapport for others with such entrainment (Bernieri et al., 1996;

LaFrance, 1979; LaFrance & Ickes, 1981), and even utilize coordination in child development processes (cf. Bernieri et al., 1988; Cappella, 1981). Coordination as a topic is to be taken seriously as a primary element of how we interact with others, with organizing as a key site of human interaction defined by coordination.

The current studies involved theorizing about, testing, observing, and personally living the experience of coordination as it occurred. These studies uncovered the embodied, cognitive, and aesthetic aspects of coordination, and accounted for the simultaneous involvement of the individual, the group, the situation, and even the presence of a leader. As described in the introductory chapter, this dissertation was an attempt to answer "big O" questions (Heath & Sitkin, 2000) that tap into the heart of organizing. Both the experimental and ethnographic studies described here have their own individual contributions, but the synthesis of what we can understand from their results also provides a unique contribution to what we know of coordination. I first consider the contributions of each study, and then attempt to coordinate, or at least cogently align, their insights.

Manipulating the qualities of attention and coordination

In the experiment, small groups were observed as they self-organized to compose a song under conditions of varying attentional focus. The role of the self as well as the other was implicated through examining how coordination outcomes were influenced by the ratio of attentional behaviors focused on the self to those focused on others. The almost-matched ratio of attending to both self and other in coordination was negatively associated with being responsive to others in speech. Specifically, relatively more other-focus was moderately associated with greater responsiveness. In turn, the more timely or

overlapping the response between individuals, the higher the coordination quality, and the higher the reported sense of the life and work of the group. Although the cross-sectional nature of the final analyses limits causal inferences, we have here at least the suggestion of attentional focus and responsiveness as possible causes for explaining coordination and the aesthetic of coordination. Importantly, even participants' dismissal of the experimental instructions is telling – the enactment of coordination is of greater consequence here than the prescriptions to interrelate in particular ways.

Although the lab study does not empirically specify the association between coordination quality and feeling "group," it at least specifies a common cause for the two, the tight linking between individuals' expressions of their own efforts. As individuals better linked their thoughts and ideas in time, they were judged as interacting more smoothly and as moving to the same tempo. Group members also felt more in "harmony" with others, even others whom they barely knew. This "tight coupling" of speech acts reflects several of the components of frequent, timely, and problem-solving communication in relational coordination (Hoffer Gittell, 2002). As individuals used both self-focused and other-focused attention to shape their responses, they more frequently shared information pertinent to resolving the task at hand in a timelier manner.

These results, obtained from groups working in an ahistorical and acontextual environment, suggest that attention, responsiveness and the aesthetic of coordination are all fundamental psychological elements of the coordination experience. The results demonstrate that coordination itself and the experience of synchrony or "wholeness" is not imperceptible or immeasurable in the sharing of information amongst strangers (cf. Bernieri et al., 1988). Even without the benefits of prior expertise, familiarity with others,

or a central coordinator or manager, people can experience the aesthetic of coming together as a whole to accomplish work as a group. This suggests that these results are generalizable to other instances of coordination where participants may have limited experience with each other (e.g. ad hoc temporary disaster relief teams), and that an observer or manager could at least partly gauge the coordination quality and degree of "jamming" in a work group by the temporal proximity of people's responses to each other. Further work remains to specify the relationship between this aesthetic and the coordinative behaviors associated with it. At present, it is still undetermined whether feeling "group" is caused by coordination quality, marked by the tight coupling of action, and involving attention that slightly favors the other but also includes the self. It might be possible that this feeling is not directly derived from action, but through some other means (e.g. beholding the entire song in one's head), and this apprehension of the form of the whole goes on to spur greater coordination quality so as to accomplish the envisioned "whole."

Coordinating for beauty through feeling and focus

The case of the University Chorus presented a radically different picture of coordination than what was observed in the laboratory. Although many of the Chorus members operate in nondisclosive intimacy (Eisenberg, 1990), most singers develop some friendships or acquaintanceships with others in the choir. On average, most singers have a great deal of musical expertise and some familiarity with the genre or with the specific repertoire selections. Furthermore, the choral context has structures that explicitly shape the coordination experience, such as the musical score containing the printed prescriptions for the formulation of sounds, and the conductor himself who

shapes appraisals of what is "beautiful" and less-than-beautiful coordination. Since choral performance is the coordination of sounds itself, beauty was associated with the experience of coordination. In beautiful moments, performers both felt and focused on a whole, whether it was of the people, the music, or the story being communicated. In poor-quality moments, performers felt and focused on the discrete elements involved in the coordination of the choir, also primarily in terms of the people and the music. Given the performative nature of choral performance, focus and feeling are not only important for perceiving poor-quality coordination but also for ultimately seeking to repair coordination or restore the whole in order to sustain performance. Furthermore, the senses-rich nature of the choral context involves the entire person's body, emotions, engagement, expertise, and perception of the immediate situation in coordination.

This ethnographic account of coordination in the University Chorus focuses on moments of knowing, in which beauty is the prime referent for coordination, and the whole (as the key accomplishment of the choir, and continuously represented in the personage of the conductor) is the felt form of high-quality coordination. In choral performance, coordination is immediately experienced and "done" so the state of coordination is being constantly re-constituted with each note issued on each singer's breath. The momentary knowing that occurs through seeing the entire corpus of singers on stage (focus), or sensing that something is "off" in the music (feeling) is sufficient for performers to know if they are performing beautifully or not. Moments of knowing also *have* to be sufficient since the whole (the entire musical work, the group of almost 200 singers) is difficult to apprehend while individuals regulate their own performance in the context of others' performance. However, with the functioning of the Chorus conductor

as an ever-present referent for the state of the whole, individuals have a medium through which they can perceive and re-shape the state of coordination quality.

A place for feeling and focus in coordination

The contributions of both studies are grounded in the rich detail that both designs afforded. In the laboratory experiment, audio/visual records allowed for fine-grained analyses of how individuals coordinated their actions as they worked as a group. In the ethnographic study, personal knowledge and in-depth qualitative accounts of how others experienced beautiful and poor-quality moments of coordination provided rich descriptions of how the state of coordination quality was perceived and also repaired. Taken together, the results of these studies inform our understandings of coordination by focusing on those who actually perform coordination, through their grounding in fundamental elements of organizing, the inclusion of the oft-forgotten embodied aspects of organizing, contrasting how coordination is enacted in the presence and absence of a leader, and the use of the context of music-making.

Performance and the performers of coordination

As a first contribution, these studies address the larger organizational issue of coordination (a big "O" question) by looking at the behaviors and perceptions that occur at the level of those who "do" coordination. While the experiment provided a loose structure in which participants were free to interact as they saw fit, the ethnography accounted for the experiences and actions of the performers themselves, in addition to the role of the conductor. It was assumed in these studies that while various contingencies framed how coordination was to occur (e.g. telling participants to work as a group to compose the song, or the use of a score to prescribe which vocal sections sing when), the

actual enactment of coordination could deviate from these structures and thus prove more consequential for the work of the group. While this perspective is not entirely new (e.g. Dougherty, 1992; Heath & Staudenmayer, 2000; Orlikowski, 2002), it has not been simultaneously engaged in a controlled setting and in an actual performing group.

Forging the insights from both studies on how coordination is performed involves mentally overlaying the grounded model from the ethnography with the empirically-validated model from the lab study. Although the experimental design hypothesized that attention would influence coordination quality and feeling, the cross-sectional analyses limit such a claim. The relationship between attention and feeling in the lab could very well be as suggested with the University Chorus, with each informing the other. The focus on both self and other demonstrated in the talk and action amongst group members in the lab may be essential to the perception of parts or whole described in the Chorus. Both singers and ad hoc lab group participants displayed and experienced attention through looking and listening to both the self and other, which are key elements of the "whole." As suggested by the experimental model, it is a shift in attention more towards one element in particular – the self – that is indirectly linked via responsiveness to lower coordination quality and less feeling of the "group." This parallels the perception of parts, and the narrowing of focus that accompanies poor-quality coordination in the Chorus.

Ultimately, the experience of performers knowing and doing coordination through feeling and focus demonstrates how the sustainment of coordination is ultimately inhered in the knowing and actions of the actors themselves, with the prescriptions of the task or the directions of a leader serving as guides toward experiencing the whole (Van de Ven et al., 1976; Weick & Roberts, 1993). The successful composition of songs by lab groups

and the myriad forms of repair in the Chorus reflect an active responsiveness towards other actors, task elements, and in the case of the Chorus, towards the leader who embodied the whole. The positive relationship between timely responses and coordination observed in the lab parallels the knowing of a "sense of click" that positively varied with the quality of coordination in the Chorus. In both the lab and the Chorus, group members demonstrated an understanding that they were to perform a coherent (and beautiful, or at least somewhat appealing) whole; this understanding was based on the experimental task instructions on the one hand, and on prior experience and the directives of the conductor on the other. The fact that singers were able to ascertain that "the notes were there, but the music wasn't" on their own, and that responsive behavior in the lab occurred without feedback from someone in a central coordinator role suggests that individuals' knowledge of the state of coordination quality ultimately matters for sustaining group action. The importance of the active, agentic role of the performer would have been overlooked if these studies only considered the role of the structural conditions that shaped coordination.

Fundamentals of the psychology of coordination

In addition to addressing the experience of the fundamental (en)actors in the coordination of workgroups, both studies also outline and elucidate the relationships amongst fundamental dichotomies of organizing: parts and whole; individual and group; feeling and focus; tacit and explicit. Organizations are comprised of divisions of labor that only ultimately make sense as parts of a whole system or process. The individuals in organizations, plain to the human observer, are part and parcel of the greater, less immediate, organizational whole, whether they comprise groups, teams, units,

departments, or divisions (Sandelands, 1998). Both studies adopt the perspective that

while it is the individual who supplies information to the researcher, the life of the group

is observable and even describable to some degree. Knowledge of the individual and

group, the parts and whole of organizing, is ultimately derived through feeling and focus.

The explicit, logico-rational form of knowing derived from focus or cognition (see

Elsbach et al., 2005) operates in conjunction with the tacit knowledge derived from

feelings, intuitions, or aesthetics (e.g. Buber, 1958; Levi-Strauss, 1966; Polanyi, 1966;

Sandelands, 2003). These dichotomies all together complicate our view of organizing and

coordination, a view formerly dominated by cognitively-based explanations of the

interrelations amongst parts.

The data from both studies demonstrate that not only do people look, listen, and

attend to the "joint situation" but that the answer to the question of "Does it *feel* right?"

influences coordinative behavior as much as noticing does (cf. Weick & Roberts, 1993,

p.363). Acting mindfully as well as sensually matters for coordination as people engaged

in organizing involve their mind, as well as their senses as they attempt to act in concert

with others. If both feeling and focus are important for apprehending the parts and whole

in coordination, then the practice of coordination itself, as well as our theorizing, should

account for this. The current work suggests that practitioners, or performers of

coordination, should not only attend to the relationships amongst their actions, but also

consider the task elements, actions and artifacts that inform feeling. In addition to

managing their attention to themselves, to others, and to the whole of the task and group,

group members and leaders should ask themselves "Does interrelating with others in *this*

way elicit feelings of a 'whole'?" as well as "What sorts of objects and representations

elicit feelings of the whole for this group?" Different representations that tap into the sense of the work of the group as a whole, whether they be through talk, text, visual or auditory media, or particular people (e.g. those in boundary spanner roles) may be helpful for providing the sense of the whole. By considering what makes feeling concrete, group members are better able to know when the whole is being performed or not, and they will have a common language for articulating and sharing this feeling.

Considering how both feeling and focus provide knowledge about parts and wholes matters for theory as well as practice. At the outset, the evidence for the importance of feeling validates the importance of theorizing about the felt aspects of coordination, as demonstrated in Quinn and Dutton's (2005) account of energy in coordination. Other recent accounts of coordination, however, still maintain a cognitive bias in their theorizing. For example, although the term "implicit coordination" suggests a tacit form of coordination, its description does not assume an inarticulate, tacit, sense of the group, but rather an explicit knowledge of other team members' needs and qualities (Rico et al., 2008). The coordination here is "implicit" simply because the dynamic mutual adjustment of actions is based on the anticipation or expectations and predictions of other group members' needs based on knowledge structures of the dynamic, immediate situation, rather than explicit communication. The accuracy and the sharedness of these mental representations across group members determine the quality of the overall intragroup coordination.

These team situation models, in their encompassing of the overall form or gestalt of the elements of the immediate situation, sound like a cognitive form of the aesthetic of coordination described in this dissertation's studies. Whether this aesthetic is of parts or

of a whole, it also apprehends the conglomerate elements of action, emotion, and

information in the course of performance. Dynamic adjustments in the Chorus, for

example, are undertaken by performers with and without explicit communication, and are

based on aesthetic, rather than cognitive knowledge. Furthermore, the sharedness and

accuracy of this aesthetic knowledge are inhered in the collectively-accessible role of the

conductor who ensures that the group as a whole is knowledgeable about the real-time,

dynamic quality of coordination. While the close physical co-location of people who are

unfamiliar with each other in both the contexts of the lab and the Chorus would limit the

use of implicit coordination, the high degree of task interdependence ensured that both

explicit speech, as well as implicit, non-verbal communication were used in both contexts

(Rico et al., 2008). The current work would suggest that coordination can involve both

aesthetic and cognitive forms of knowledge inhered in the actions of the group and in the

roles played by particular individuals, in contrast to a picture of coordination ultimately

based in objectively knowing what other group members can provide or need in

coordination.

The body and coordination

Considering the involvement of both feeling and focus in the performance of

coordination made explicit the role of the body in coordination. While feeling is derived

from the bodily senses, focus is embodied in the looking, listening, and verbal responses

amongst group members. It is the body that transports the mind and the senses from

context to context, and across variations in coordination quality. Both studies looked at

groups of people who were physically co-located and who could synchronously share

information. Thus these results might differ dramatically in virtual, or geographically-

distributed workgroups who may engage in asynchronous communication (e.g. via email). These kinds of groups would be unable to enact coordination via embodied communication and cognition. What people do in such virtual teams would be less directly tied to the state of their bodies, which was consequential for understanding the experience of coordination for the group members in the two studies described here.

Fortunately, more recent work has identified the critical involvement of the body in organizations (e.g. Heaphy & Dutton, 2008). However, only a few scholars have given primacy to the role of the body in understanding how groups coordinate (e.g. Hindmarsh & Pilnick, 2007). The role of intercorporeal knowing, or the demonstration of group members' sensitivity towards each others' physical conduct, is consequential for highly-interdependent, performative workgroups concerned with interrelating physical actions in real-time (e.g. Hindmarsh and Pilnick's (2007) surgical teams). The body is used to acquire information in situations where group members do not know each other, as was the case with lab group participants looking at each other and at each other's written record of the song, or with Chorus singers feeling the expertise of the group being demonstrated in the quality of a given performance. More importantly, the body is the conduit for the display and sharing of knowledge between group members that is necessary for a collective sense of the whole. Without looking at, speaking to, and gesturing for themselves and for others, the efforts of lab participants would have remained trapped in their individual heads. Similarly, coordination in the Chorus was contingent upon being able to hear other singers, to see and mimic the gestures of the conductor, and to provide a sound that others could tune into. No matter the type of knowledge, be it cognitive or aesthetic, its effect on coordination would be moot without

the body's expression of such knowledge. The data derived from music-making groups has brought the necessity of the embodiment of coordination to the forefront of our theorizing. Whether its involvement is implicit or explicit, scholars should consider how the body is used to display knowledge and thus shape the moment-by-moment performance of coordination.

The leader and coordination

Another contribution to organizational research gained by considering the sum of the two studies is that while one study setting involves a fully present, co-performing leader, the other study setting demonstrates coordination in the absence of a leader. In the Chorus, the conductor grafts associations between the experience of parts and poor-quality, and the experience of the whole and beauty, and also regulates the mood and attention of the collective. In the lab, apart from the directive to attend to each other in a certain way in order to make the best song possible as a group, participants were otherwise subject only to the ordering of the notes in the music that structured their lyrics. As described before, although past theory has outlined how managers might organize the divisions of labor, organizational scholars are still developing knowledge about how coordination is actually enacted. In the lab, coordination without a centralized manager or leader in the lab did occur[8], but the video records revealed that initial interactions (e.g. in the first practice trials) were hesitant, and there was little common understanding about the task. Participants usually questioned and answered each other in order to gain a collective understanding of the task before they began to exchange ideas and contributions.

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[8] As so remarkably occurs with Orpheus, the leaderless orchestra; see Hackman (2005)

In contrast, the presence of a group leader, with the capability, authority and expertise to direct the collective is useful in the Chorus, especially given its size and the complexity of the task. However, as previously described, the conductor is so deeply involved in the collective enactment of the music through his frequent modeling, demonstrating, mutual gesturing, and sharing of aesthetic understandings that I think he is best described as a co-performing leader rather than a simple "manager." In this manner, the Chorus' conductor can be described as "leading beautifully" since he displays his mastery of music-making in a way that is aesthetically apprehended by the singers, his "followers" (Ladkin, 2008). In practice, performative groups seem to benefit from the presence of someone whose role is to embody the performance of the group. As described in the above sections, with the entire collective tuning in to a central point of focus, such an individual could facilitate the speedy development of collective understandings of the task, and with immediately identifying and pursuing the goals of the group. Although the dissertation still focuses on the role of the enactors of coordination, a central leader in whom the performance of the collective is inhered is undoubtedly of great influence on the work of the group.

Performing coordination beautifully through music

Finally, both studies contribute to our understanding of coordination through their use of the context of musical ensemble performance. Working as a group to produce words and sounds as a unit made the consequences of feeling, focus, and action for coordination readily apparent. Ensemble performance fleshes out the praxis of coordination, or how its enactment is influenced by the involvement of the knowledge, people, and contexts that are present in the immediate situation. The senses-rich

environment of music-making was ultimately of great benefit in facilitating the articulation of the roles of feeling and focus by participants and researcher alike. The different kinds of musical ensembles observed in the two studies allowed me to observe and understand the role of feeling, focus, parts, whole, individual, group, the body, and the role of the leader in ensemble work. Music-making thus helps us appreciate the fluid and dynamic nature of coordination, and makes evident the diversity of elements involved in sustaining continuous group performance. Both studies demonstrate how the uniquely human endeavor of group music-making was an extremely useful lens for magnifying the core elements of the psychology of coordination.

LIMITS TO OUR UNDERSTANDING

While the results of the studies presented here provide a number of contributions to what we understand about coordination, a few caveats must be applied. One point concerns the generalizability of the experimental results (based on data from seventy-seven groups) and the unique case of the University Chorus. The lab study data were derived from individuals that had little expertise with the task, were unfamiliar with their fellow group members' expertise and who expected to have no future interaction with their fellow participants. Although organizations are increasingly concerned with the coordination of ephemeral, temporary work groups (e.g. Harrald, 2006; Hindmarsh & Pilnick, 2007), most work groups in formal organizations typically expect to work with each other for extended periods of time and are knowledgeable about their collective expertise. Despite the artificiality of the lab context, the fact that all the lab groups produced a song reflects the development of common understandings of the task or at least the development of patterns of interaction that facilitated task completion. The

results of the lab would thus suggest that coordination occurs in spite of a lack of familiarity with the task and with others, isolating the importance of attention and responsiveness for coordination over and above other factors involved in group work.

The unique nature of the University Chorus in comparison to the population of adult community choirs is a second possible limitation to these results. Given the expertise of its members, the renown of the orchestras and conductors with whom they perform, and the accolades they have received, the Chorus is a special case of excellence in community choirs. Not every organization is an exemplar (by definition), which limits the applicability of its characteristics to others that may be similar to it. However, exemplary cases like the Chorus are useful for developing theories about specific phenomena that are tightly grounded in empirical evidence, and that provide fresh perspectives on already-researched concepts, such as coordination (Eisenhardt, 1989). Just as with examining multiple cases, the examination of this singular case involved methodological rigor and comparisons across several examples of how coordination was experienced by performers in a variety of roles (Eisenhardt, 1991). Even with their exemplary performances, Chorus performers were able to readily articulate the highs and lows in coordination quality, providing insights about knowing and acting in coordination.

A third and final limitation is the lack of causality inherent in these results. The ineffectual experimental manipulation, and the interpretive turn used to elicit understandings about coordination in the Chorus do not allow for causal inferences. The lab results only permit us to draw associations amongst attention, characteristics of conversation and the aesthetic of coordination. While the ethnographic interpretations

have been corroborated by Chorus members themselves, the model of knowing and acting in coordination that emerges from their accounts can only propose relationships between the group leader, perception, knowledge, and action that remain open to testing. Asking different questions, creating situations that alternatively limit or facilitate coordination, and outlining the longitudinal, processual nature of how individuals learn to coordinate well with others over time would better address questions of root causes and their degree of influence on coordination quality.

CONCLUDING CONCLUSIONS

Poetry as breath penetrates to where the body recognizes the stirring of meaning.

– Pinsky (2002)

This dissertation has been concerned with the general question of "*What are the organizational (concerning individuals and groups doing work) psychological (concerning the mental processes of these individuals and groups) processes involved in the coordination of a group?*" Specifically, the studies described here were designed to answer the questions of "*What is the content and role of individuals' attention in the continuously adaptive coordination of actions within a group?*" and "*How is coordination related to feelings of the life of the group?*" In looking at the performance of coordination, where action (the "breath") evinces knowledge (or "stirs meaning"), the answers to these questions suggest several fundamental elements of a psychology of coordination. We see that the individual performer of coordination knowingly acts on behalf of the group, acting both sensually and mindfully as he or she engages in "doing with" others. The quality of the group's coordination-as-performance is known in terms of either the qualities of its parts, and their interrelation, or in terms of its gestalt form, as

a whole. The senses, the mind, and the body are all intricately engaged with the

immediate context, allowing for the dynamism we observe in the process of organizing.

The human person is thus fully present in the experience of coordinating with others.

Table 1.1 Means of predictor and outcome variables within experimental groups

Condition	N	Coordination quality	Song quality	"Feeling group"	Ratio of self-focused to other-focused percentages of behavior	First-person singular pronoun use (% of total third-trial)	Second-person singular and plural pronoun use (% of total third-trial)	First-person plural pronoun use (% of total third-trial)	Number of overlaps in speech	Number of latching in speech	Number of total actions in third-trial transcript excerpt	Total third-trial duration (in seconds)
Self-focus	20 (54)	5.01	4.8	4.12 (.45)	.92 (.47)	2.49	3.34	1.34	23.6	23.6	31.68 (4.56)	544
Other-focus	20 (54)	4.79	4.28	4.02 (.30)	.85 (.45)	2.98	3.02	1.73	29.25	19.45	31.77 (6.85)	576.5
Self-in-relation-to-other focus	19 (50)	4.99	4.62	3.98 (.48)	.97 (.68)	2.55	2.77	1.80	22.67	19.17	30.71 (4.29)	662.95
Control/time-focus	18 (49)	5.05	4.38	3.81 (.53)	.96 (.61)	2.33	3.24	1.90	16.72	12.67	28.54 (4.72)	463.35

Table 1.2. Sample-wide raw group-level means, standard deviations and correlations

	M	SD	1	2	3	4	5	6	7	8
1. Self-other focus ratio	.94	.53								
2. First-person singular pronoun use	2.61	1.67	-.091							
3. Second person singular and plural pronoun use	3.11	1.25	-.114	-.239*						
4. First person plural pronoun use (time-adjusted)	1.68	.91	-.117	-.047	.141					
5. Number of overlaps in speech (time-adjusted)	4.32	3.79	-.262*	.151	.005	.017				
6. Number of latchings in speech	3.61	3.28	-.263*	.086	.029	.005	.793**			
7. Coordination quality	4.98	1.00	-.221	-.003	-.017	.004	.254*	.330**		
8. Feeling group	3.99	.46	-.045	-.121	-.131	.005	.379**	.330**	.207	
9. Song quality	4.57	1.09	.111	-.016	.057	-.025	.018	.016	-.158	-.156

 * $p < .05$
** $p < .01$

Table 1.3. Summary of regression analyses of the effect of self-other ratio on coordination quality, feeling group, and song quality

Variables	Coordination quality	Feeling group	Song quality
Group size	$.236^{\dagger}$	-.033	.161
Experimenter	D $(.264^{\dagger})$		A (.611*); B (.327*)
Room location	Room 3 $(.023^{\dagger})$		Room 3 (.505*)
Group gender composition	.067	.116	-.165
Other-awareness	.219	.069	.065
Self-awareness	$-.280^{\dagger}$	-.084	-.406**
Independent self-construal	.150	.141	-.103
Interdependent self-construal	-.012	$.221^{\dagger}$	$-.206^{\dagger}$
Self-monitoring	-.001	.187	-.164
Self-other ratio	-.112	-.040	.147
R^2 (ΔR^2)	.269 (.011)	.238 (.001)	.444 (.019)
F	1.502**	1.219	3.339**

$^{\dagger}p < .10$
$* p < .05$
$** p < .01$
Standardized coefficients provided.
Experimenters A (dissertation author) and B are the two male experimenters.

Table 1.4. Regression results of relationship between self-other focus ratio and speech overlaps

Variables	B	SE B	β
Step 1			
Constant	.283	.191	
Group size	.130	.069	$.215^{\dagger}$
	$R^2 = .046$		
	$F = 3.53^{\dagger}$		
Step 2			
Constant	.492	.206	
Group size	.100	.069	.165
Self-other focus ratio	-31.644	13.534	-.264*
	$\Delta R^2 = .067*$		
	$F = 4.606*$		

$^{\dagger}p < .1$
$* \, p < .05$
$** \, p < .01$
B = Unstandardized coefficient
SE = Standard Error
β = Standardized coefficient

Table 1.5. Regression results of relationship between self-other focus ratio and speech latchings

Variables	B	SE B	β
Step 1			
Constant	.173	.185	
Group size	.1580	.067	.253*
$R^2 = .064$			
$F = 5.004*$			
Step 2			
Constant	.394	.198	
Group size	.118	.066	.199[†]
Self-other focus ratio	-33.406	12.994	-.286*
$\Delta R^2 = .079*$			
$F = 5.999**$			

[†] $p < .1$
* $p < .05$
** $p < .01$
B = Unstandardized coefficient
SE = Standard Error
β = Standardized coefficient

Table 1.6. Regression results of relationship between speech latching and coordination quality

Variables	B	SE B	β
Step 1			
Constant	3.435	.691	
Group size	.574	.25	.259*
$R^2 = .067$			
$F = 5.252*$			
Step 2			
Constant	3.248	.67	
Group size	.412	.250	.186
Self-other focus ratio	1.081	.421	.289*
$\Delta R^2 = .078*$			
$F = 6.119**$			

$^\dagger p < .1$
$* p < .05$
$** p < .01$
B = Unstandardized coefficient
SE = Standard Error
β = Standardized coefficient

Table 1.7. Regression results of relationship between speech latching and feeling group

Variables	B	SE B	β
Step 1			
Constant	2.43	.681	
Interdependent self-construal	.44	.191	.262*
$R^2 = .068$			
$F = 5.294*$			
Step 2			
Constant	1.992	.713	
Interdependent self-construal	.434	.188	.258*
Coordination quality	.093	.051	$.202^{\dagger}$
$\Delta R^2 = .041^{\dagger}$			
$F = 4.351*$			
Step 3			
Constant	2.056	.678	
Interdependent self-construal	.394	.179	.234*
Coordination quality	.042	.052	.091
Latchings	.571	.193	.334**
$\Delta R^2 = .099**$			
$F = 6.121**$			

$^{\dagger}p < .1$
$* \, p < .05$
$** \, p < .01$
B = Unstandardized coefficient
SE = Standard Error
β = Standardized coefficient

Table 1.8. Regression results of relationship between speech overlap and feeling group

Variables	B	SE B	β
Step 1			
Constant	2.43	.681	
Interdependent self-construal	.44	.191	.262*
	$R^2 = .068$		
	$F = 5.294*$		
Step 2			
Constant	1.992	.713	
Interdependent self-construal	.434	.188	.258*
Coordination quality	.093	.051	$.202^{\dagger}$
	$\Delta R^2 = .041^{\dagger}$		
	$F = 4.351*$		
Step 3			
Constant	2.22	.69	
Interdependent self-construal	.326	.185	$.194^{\dagger}$
Coordination quality	.059	.051	.128
Overlaps	.505	.189	.303**
	$\Delta R^2 = .082*$		
	$F = 5.518**$		

$^{\dagger}p < .1$
$* \, p < .05$
$** \, p < .01$
B = Unstandardized coefficient
SE = Standard Error
β = Standardized coefficient

Table 2.1. Interviewees' Demographics

Vocal Part	Gender	Age	Race/Ethnicity	Tenure in UC
Conductor	Male	56	White	5
Accompanist	Male	41	White	10
Alto	Female	23	White	3.5
Alto	Female	30	White	6.5
Alto	Female	30	White/Mixed	5
Alto	Female	32	White	6
Alto	Female	39	Korean	1.5
Alto	Female	56	White	5
Alto	Female	56	White	5
Alto	Female	57	White	
Alto	Female	60	White	3
Alto II	Female	27	Black & White	2
Manager/Alto	Female	59	White	13
Bass I	Male	19	African-American	1
Bass I	Male	30	White	3
Bass I	Male	54	White	5
Bass II	Male	20	White	1
Bass II	Male	68	African-American	32
Bass II	Male	69	White	3
Bass II	Male	69	White	38
Soprano I	Female	43	White	5
Soprano II	Female	24	White	2
Soprano II	Female	25	Asian	2
Soprano II	Female	30	White	3
Soprano II	Female	48	White	12
Soprano II	Female	56	White	3
Soprano II	Female	68	Jewish	32
Tenor I	Male	24	White	3
Tenor I	Male	28	White	1.5
Tenor I	Male	35	White	5
Tenor I	Male	61	White	39
Tenor II	Male	25	White	0.9
Tenor II	Male	35	White	6
Tenor II	Male	49	White	5
Tenor II	Male	61	White	23

Table 2.2. Coordinative mechanisms in the choir

Mechanism	Means of coordination
Conductor	He provides verbal instruction (pronunciation, articulation of sound quality, timing, balance, emotional communication); hand gestures that indicate the formulation of the sound; baton movements that indicate tempo/rhythm; eye gaze that indicates which vocal section is producing misaligned sound; facial expression that provides online feedback about quality of performance
Musical score	Provides a printed, hand-held source of text, pitch, rhythm, and contributions in relation to other sections/divisions; idiosyncratic revisions are made (with pencil markings) to tailor interpretation, writing in the pronunciation of foreign, and even English text, or marking difficult areas that might require personal practice outside of rehearsal
Section sound	The sound of one's own section, and the sound of other sections serve as reference points for one's own sound.
Immediate neighbors	Neighboring singers provide self-other ratio information in terms of pitch, tempo, rhythm, pronunciation, dynamics
Seating chart	Created by the conductor, this determines who is seated next to whom, and thus which voice qualities are co-located with which. Seating assignments, and thus these charts, are subject to change with each rehearsal, and even directly before a performance, based on the conductor's judgment of the sound.
Accompanist/piano	Provides sounds that accompany our singing; represents the orchestral accompaniment in performance; accompanist independently, and at the request of the conductor, emphasizes (plays louder) the portion of the chord for the particular vocal section that might be experiencing difficulty at that point in time (based on the quality of their sound). Highly responsive to the conductor's directions, the accompanist plays different versions of the same sound on command, playing specific notes or chords within a single measure, and emphasizing the sound of certain parts.
Chorus handbook	A nine-page booklet, with contact information (email addresses and phone numbers) of those who hold formal roles within the Chorus, viz. the conductor/director, assistant director, manager, librarian, accompanists and section leaders. This reference document is a codification of all the guidelines for dress (e.g. black tuxedos and an option of a non-jeweled earring for men), behavior on stage (e.g. the choir does not acknowledge the other performers on stage with applause or stamping of feet), rehearsal attendance (e.g. if one misses more than one rehearsal, no matter the excuse,

| | one should expect to not be allowed to sing in that concert), and other aspects of choir membership, such as recurring auditions, obtaining scores, parking, and the season's schedule. |
| Website | This newly developed resources (within the last season) is used to host PDFs of the modified score pages, and MP3s of the music so that we can be familiar with the sound – new addition |

Table 2.3. Actors/roles in the University Chorus

Actor	Role characteristics
Conductor/musical director	As conductor he directly plans and executes the rehearsal process, while as the musical director he selects the repertoire and coordinates performances with various orchestras in various venues. He also works with Music Org., as well as other conductors and orchestras to coordinate the public performance schedule. The conductor serves as "audience" and relays what he hears back to the singers. Since it is assumed that individual singers cannot really hear the holistic sound produced, the conductor serves as the sounding board for the choir's repeated performance in rehearsal.
Assistant conductor	Choral conducting doctoral student; takes notes during the rehearsal; seems to note mostly the location of singers' errors in the performance of particular spots in the music, but also notes some of the improvements. He steps in for the conductor when the latter is unable to conduct particular rehearsals, and even conducts performances.
Chorus manager	Also a singer (alto); issues reminders via email and in announcements made at break. These reminders concern rehearsal, dress rehearsal and performance times, rehearsal and performance decorum, and the need to return paperwork (e.g. ticket order forms). Announcements include news of the death or injury of a chorus member or a member's relative, upcoming concerts by other ensembles, and ticket offers for such concerts. The manager also helps construct and reinforce the rules of the chorus handbook. She also
Librarian	Coordinates the acquisition of scores for singers to use, either through direct purchase by Music Org. (for which singers reimburse the organization) or through borrowing from various sources (School of Music or churches). She also issues emails requesting information about which individual singers will purchase or borrow scores, marks the singers' scores accordingly, distributes the scores and receives payment for the scores on behalf of Music Org.
Section leader	Each vocal part has one person who is responsible for noting attendance. Singers are not meant to miss any rehearsals, and more than two absences in a season (regardless of excuse) render a singer unable to perform in the final concert. Singers can contact the section leader, either through direct contact at rehearsal, or via email after, to ensure that he/she is aware of their attendance that night. The section leaders then pass on attendance records to the conductor so that he knows who has attended the rehearsals for a particular concert.
Choir members	Embodiment of the choral sound. They produce the sounds

that comprise the performance of musical works. In the choral setting, singers do not improvise their performance, but follow the prescriptions of the musical score and the directives of the conductor. However, singers constantly negotiate their individual performance vis-à-vis the performance of their neighbors and other vocal sections, at times even "going along" with what they know to be an incorrect sound, just so that there can be a unified sound. Depending on their expertise and familiarity with the music, individual singers may feel that they take on the role of "anchor" for others in their locality. This "anchoring" involves providing a secure reference point from which other performers can base their own pitch, rhythm, or other musical elements. Individual singers seem to be aware of when they are strong and when others are relying on them to "lead" or "carry" them.

Accompanist   Represents the orchestral accompaniment for the singers and is thus almost always playing while they sing. The pianist is also highly responsive to the conductor's directions, playing different versions of the same sound on command, playing specific notes or chords within a single measure, and emphasizing the sound of certain parts.

Music Org.   Arts presentation organization that financially supports the choir, funding score purchases and travel to performance locations.

Table 2.4. Materials and artifacts used in music performance

Material	User	Purpose
Musical score	Singers	Booklet containing text and musical notation; Singers might even use more limited versions of the score, such as the "men only" score for George Orff's *Carmina Burana*, which contains the full notation and text of the tenor and bass parts, but only limited representations (e.g. only the first few lines) of what the alto and soprano sections sing.
	Conductor	Conductor might use the "full" score, containing the choral and solo text and music, as well as the notation for the orchestral instruments
	Accompanist	The accompanist might use a score containing notation for piano playing
Baton	Conductor	Stick used by the conductor to indicate the number of beats, the rise and fall of the pitch, and also used to bring the choir to attention, with a few taps on the podium. It is the singers' metronome, to which they must match their internal rhythm.
Pencil	Singers	Pencils are ubiquitous instruments, necessary for changing notation, writing in the pronunciation of foreign, and even English text, or marking difficult areas that might require personal practice outside of rehearsal. A pencil allows for erasure, and thus easy re-modification.
	Conductor	The conductor also marks his score to indicate areas in the music that singers appear to perform with difficulty; these markings and notes guide what he will focus on in the next rehearsal
Whiteboard/easel	Conductors	Located next to conductor's podium, the whiteboard is used to indicate the sequence of "spots" in the music we will focus on for that particular rehearsal. This is an artifact of the deliberate rehearsal in which the choir engages, focusing on sometimes non-contiguous, difficult portions of the music
Laptop	Assistant conductor	This is used throughout rehearsal by the

		assistant conductor to problem areas that are newly-pointed out by the conductor in the course of rehearsal. This information supplements the conductor's own notes.
Microphone and speakers	Conductor	Given the "dry" acoustics of the rehearsal space, a wireless microphone and speakers are used by the conductor to ensure that all singers can hear him
Rostrum and podium	Conductor	The rostrum or small platform gives the conductor the necessary elevation needed so that even the singers in the back of the room can see his movements. His podium supports his score so that his hands are free to conduct. The rostrum is the focal point of the singers' seats, and serves as a central location at which the conductor can be approached by singers before and after rehearsal, and during the break.
Black folder	Singers Conductor	Singers and conductor are free to utilize scores with their (usually) paperback covers bare in rehearsals. These covers typically have some sort of design or artwork in various colors. In order to present a uniform, and non-distracting visual scene to audiences, scores are placed into black folders when used in performance.
Concert attire: tuxedos and gowns	Singers and conductor	In line with the use of black folders in performance, the use of formal eveningwear helps to construct a constant, non-distracting visual scene. While the men of the orchestra and the conductor wear more formal 'tails', the men of the choir wear black tuxedos, with a black bow tie, a white shirt, a black cummerbund, black shoes and socks. While the women of the orchestra are allowed to wear myriad combinations of black, formal clothes, the women of the chorus all have to purchase and wear a sequined gown of uniform design.

Table 2.5. Modes of action and communication in rehearsal and performance

Form of communication	Actor	Purpose
Singing	Singers (primarily)	This is the primary activity of chorus members. At the direction of the conductor, they attempt to create the sounds prescribed by the text and notation in their scores, and as it is modified by the directives of the conductor. The sound of the choir also indicates to the conductor and accompanist that singers are attentive to the demands of the music and the conductor.
	Conductor	As a form of correction, the conductor models sounds in the manner he prefers. At times he reproduces the sound the choir has made, then sings his preferred formulation of the sound to demonstrate the discrepancy between the two.
Speech	Conductor (primarily)	Directing singers and accompanist/orchestra
	Singers	Asking conductor clarifying questions about some comment or directive and/or (whispered) talk amongst themselves while actually rehearsing. Talk is the domain of the conductor, and chatter amongst singers in the course of rehearsal (and even questioning the conductor) is seen as distracting and inefficient.

		At the break, the manager, and sometimes other singers, stand up to make announcements about upcoming events, give reminders about guidelines, and to share on the life situation of community members.
Gesture	Conductor (primarily)	Modeling of formulation of sound through gesture, e.g. raising arm as choir produces sound to indicate height of pitch
	Singers	Reproducing gestures of conductor (usually at his request) in order to formulate sound in the desired manner. Some singers also use gesture to communicate with other singers, e.g. clutching their chest to indicate how moved they are by the music
Inscription/writing	Singers	Recording modifications and notes on errors and interpretations of the sound. Some singers also write short notes in their scores to communicate with other singers, since verbal communication amongst singers is seen as a distraction from the work of rehearsal
	Conductor	Recording errors and modifications
Facial expression	Conductor (primarily)	Whether intentionally manipulated or not, singers interpret the positive or negative affect of the conductor's facial expression as a barometer of their ongoing performance. Blissful

		smiles are interpreted as positive feedback, while glares and grimaces are interpreted as signs that performance is falling short of the desired quality.
	Singers	Singers are limited in their ability to communicate verbally and even through writing (which would involve taking attention away from the conductor). Some singers use their faces to communicate (dis)pleasure at what might be currently occurring in the rehearsal.
Gaze	Conductor	Whether used intentionally or not, if the conductor's gaze is focused on them, it is interpreted by singers as a signal that their individual performance, or the performance of those near to them, is problematic.
Email	Chorus manager Conductors	Email is an efficient means of communication between those with more formal roles in the chorus, e.g. the manager and the conductor, and the large number of singers. Only those in formal roles have permission to email the chorus' group addresses directly. Schedules, score modifications, reminders, offers to perform with other groups and receive tickets at discounted prices, as well as updates on community members' life situations are all

| Singers | shared over email. Singers receive communications from the manager and conductor, but also use email to communicate amongst each others, sharing reactions to messages from the "higher-ups." |

Table 2.6. Themes in the experience of beautiful moments

			Illustrative Quotes
<u>Subject of experience</u>	Feeling	Emotion	• Positive emotion: Sense of joy (Bass)
			• Fullness of emotion: "…it's just this whirl of emotions" (Soprano)
		Music as whole	• "…a block of sound" (Tenor)
			• "…there is that togetherness of the sound, not a voice sticking out" (Bass)
		People as whole	• "you're not two hundred individual people, you're one person, one entity that's working together" (Alto)
			• "…there's this coordinated effort. Obviously, we're all sitting or standing. We're all singing, turning our pages" (Tenor)
		Story/meaning-laden narrative as whole	• "it really is experiencing the emotion of the words that keeps the intention. When it's really working I'm totally in it. So, if it's a Requiem, I'm crying…" (Tenor)
			• "In the music you hear what's going on and it's just set so true to text and I feel like the text is painted in such a way that it illustrates…" (Soprano)

Focus	Music as whole	• "When you're in performance, you hear how everything goes together…That makes sense. Yeah, now I see that where that little melody comes from and why we need to be singing it this way" (Alto)
		• "the details of the music get lost, and it becomes music" (Tenor)
	People as whole	• "you hear a collective sound of everybody universally making one central idea coming across" (Bass)
		• "…seeing how many people are coming together and working in unison towards a particular purpose" (Soprano)
	Self as involved in whole	• "I'm understanding what I'm doing in the context of what everybody else is doing and the feel that that creates" (Alto)
		• "I want my voice to do precisely what it's supposed to do in that context" (Bass)
	Focus on communicating message	• "one other layer which is of course the composer is laying down all these emotions and so they're there for us and all we have to do is pick them up" (Soprano)
		• "This is what I'm singing. This is what the words say, and this is what's happening" (Alto)
	Conductor: as reflection of whole	• "you could tell it was really coming together…you can see it on [the conductor's] face" (Alto)
	Conductor: as regulator of	• "that conductor is either a very good actor, or you could really

		performance	read his eyes and his hands and everything so well" (Soprano)
<u>Contextual</u> <u>elements</u>	Feeling	Mastery/expertise (felt as smooth/accurate performance)	• "It's that like you've rehearsed enough to the point where you don't have to think, it just comes out and you're open and that's the end of it" (Alto)
			• "you've gone through these rehearsals and we screwed up a few times on this part and they screwed up on this part and whatever—(But you're not really thinking about it.) - You're not. You're not. At that time you're just like a unit" (Alto)
	Focus	Mastery/expertise (involves mindful self-regulation)	• "You have to know the music very well to be able to let go" **(**Alto)
			• "it takes so much of my mind to stay—it's like rolling a boulder up a hill or something. You can't stop to admire it or it'll crush you… I'm busy singing and I have to keep singing, and it's happening in the background" (Tenor)
		Embodied focus	• "you find yourself tending to blend better with people that sing more like you" (Alto)
	Feeling and Focus	Musical structure: ends/climaxes	• "it's just how ends are written like they're meant to be beautiful and maybe I'm swayed by like larger finale-ish sounds than other things" (Tenor)
		Musical structure: other qualities	• "I think just the rush of sound. Just that um, Carmina is kind of always fun to sing, just because its fun" (Alto)
			• "Wherever we have this really, really soft parts…" (Soprano)
		Public performance context	• "in the beginning of the concert the lights come up and your

world is limited to the front of the stage and that includes the orchestra and the whole chorus" (Tenor)

- "I kinda get a high just performing, just being on stage" (Alto)

Engagement

- "… it probably isn't gonna happen if you don't have a group that is serious about music-making" (Bass)

- "…a sense that the people in the choir have risen to the occasion and are prepared" (Alto)

Table 2.7. Themes in the experience of poor-quality moments

Subject of experience	Feeling	Emotion	Illustrative Quotes
Subject of experience	Feeling	Emotion	• Self-directed (negative): "I feel like I don't live up to my standards" (Soprano) • Self-directed (positive): "you just have to keep striving to try to let the music survive" (Bass) • Other-directed (negative): " [you are] ready to kill 'em by the end of rehearsal or consistently you just want to beat them" (Tenor) • Other-directed (positive): "even if like 10, 20, 30 people stop singing, people, other people keep singing" (Alto) • Conductor sets tone: "…sarcastic comments—it's sometimes insulting and I think that's his way to make you laugh at your mistakes and also to be like, 'That was awful' without saying, 'That was awful' and being so negative." (Bass)
		Less than whole: music	• "People were getting most of the notes, but the music wasn't coming—the music wasn't there. The notes were there, the music wasn't" (Alto)
		Fragmentation: people	• "you literally just have disconnected by accident or by mistake from the group" (Bass)
	Focus	Characteristics of error	• "try to figure out who is screwing it up" (Tenor)
		Distraction from whole	• "staring into space and happen[ing] to be looking at the wall" (Alto)
		Repair: recapture of whole	• Repair via and for self: "if I clearly am flat or not doing something properly, I always check myself before I check

someone else" (Bass)

- Repair via and for others: "I'm trying to compensate for what's missing in the group in some sort of way" (Tenor)
- Repair via conductor: "…conductors help, because they know the score…So, if they know you're supposed to be somewhere and they see that you're lost, they'll do gestures and things like that to help you along, to let you know that, 'This is where you're really supposed to be'" (Bass)

Contextual elements	Feeling	Mastery/expertise: felt as "wrong"	• "Ooh, this could be a disaster here." (Alto) • "…if we sing really crappy, we probably all know it to some degree" (Alto)
	Focus	Mastery/expertise: limited, amateur – is this really *focus*?	• "this is an amateur choir, you know…We're not being paid to come into rehearsal already knowing the piece" (Bass)
		Embodied focus	• "even though you may read music and know the music, if someone sings it differently around you, you are kind of swayed sometimes to what they are doing even though in your heart you know" (Bass)
	Feeling & Focus	Qualities of musical structure	• "I don't always relate…it has to do with how much I can actually understand exactly…what I am communicating." (Alto)
		Rehearsal context	• "in rehearsal you're supposed to make mistakes…You're supposed to screw up, that's what it's there for…" (Soprano)
		Immediate performance circumstances	• "…half the time you're so uncomfortable. My back is killing me, I'm trying to sit still and sit up straight or whatever. So, that can be very distracting…" (Soprano)

Engagement

- "I don't feel really satisfied if I haven't put in as much effort as I possibly can." (Alto)

Table 2.8. Comparing the experience of beautiful and poor-quality moments

Element	Beautiful moments	Poor-quality moments
Feeling	Holistic	Atomistic
	Tacit	Explicit
Focus	Holistic	Atomistic
		Repair/recapture whole
Emotions	Positive	Positive
		Negative
	Collective	Individual
Mastery/expertise	Smooth/accurate	Disjointed/inaccurate
Musical quality	Inherently enjoyable	Difficult
	Climax/completion	
Context	Public performance	Rehearsal
Engagement	Full and collective	Limited and individual

Figure 1.1. A process model of the influence of attentional focus on coordination quality and other outcomes
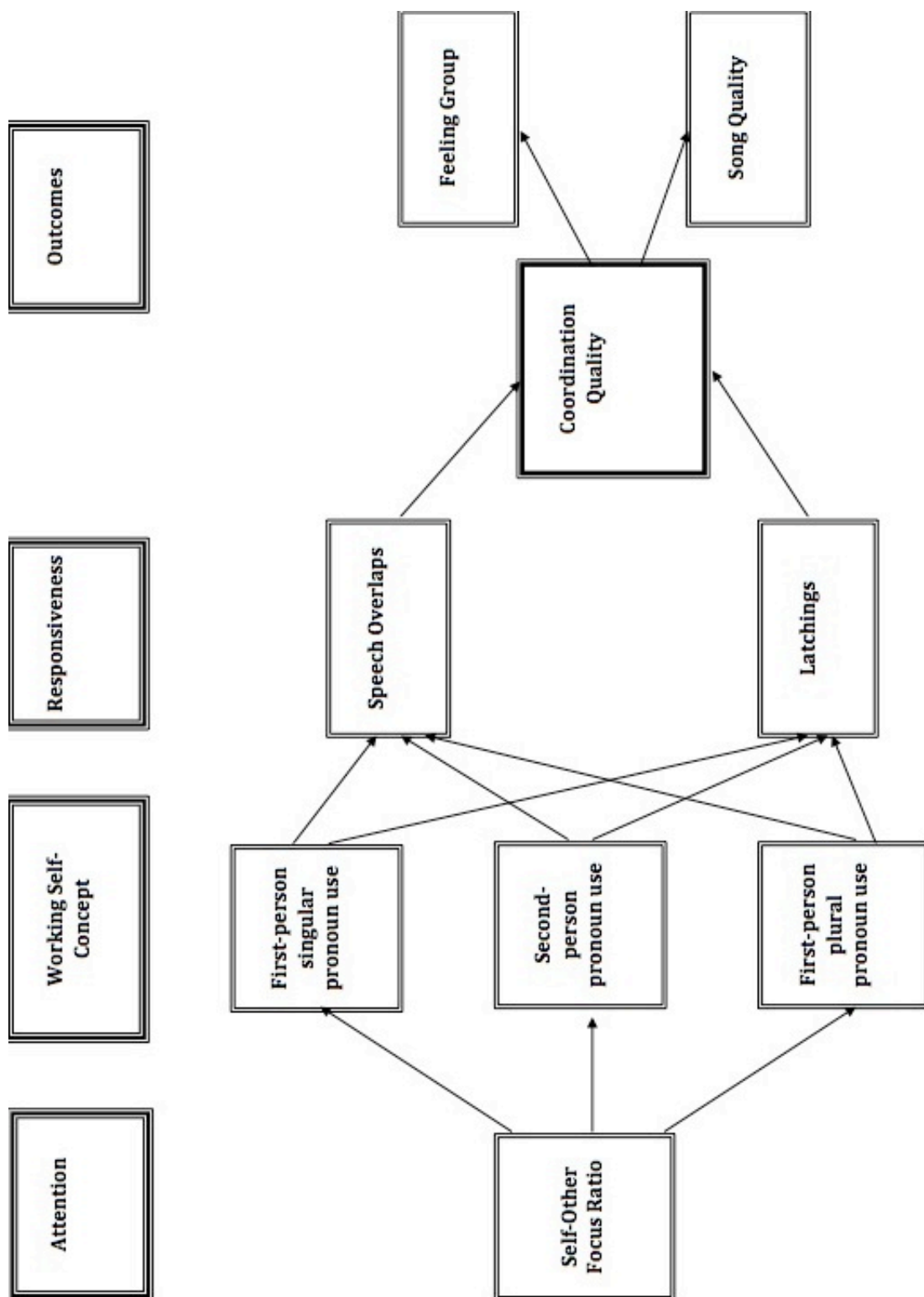
Figure 1.2. Final empirical model of influence of attention on coordination outcomes
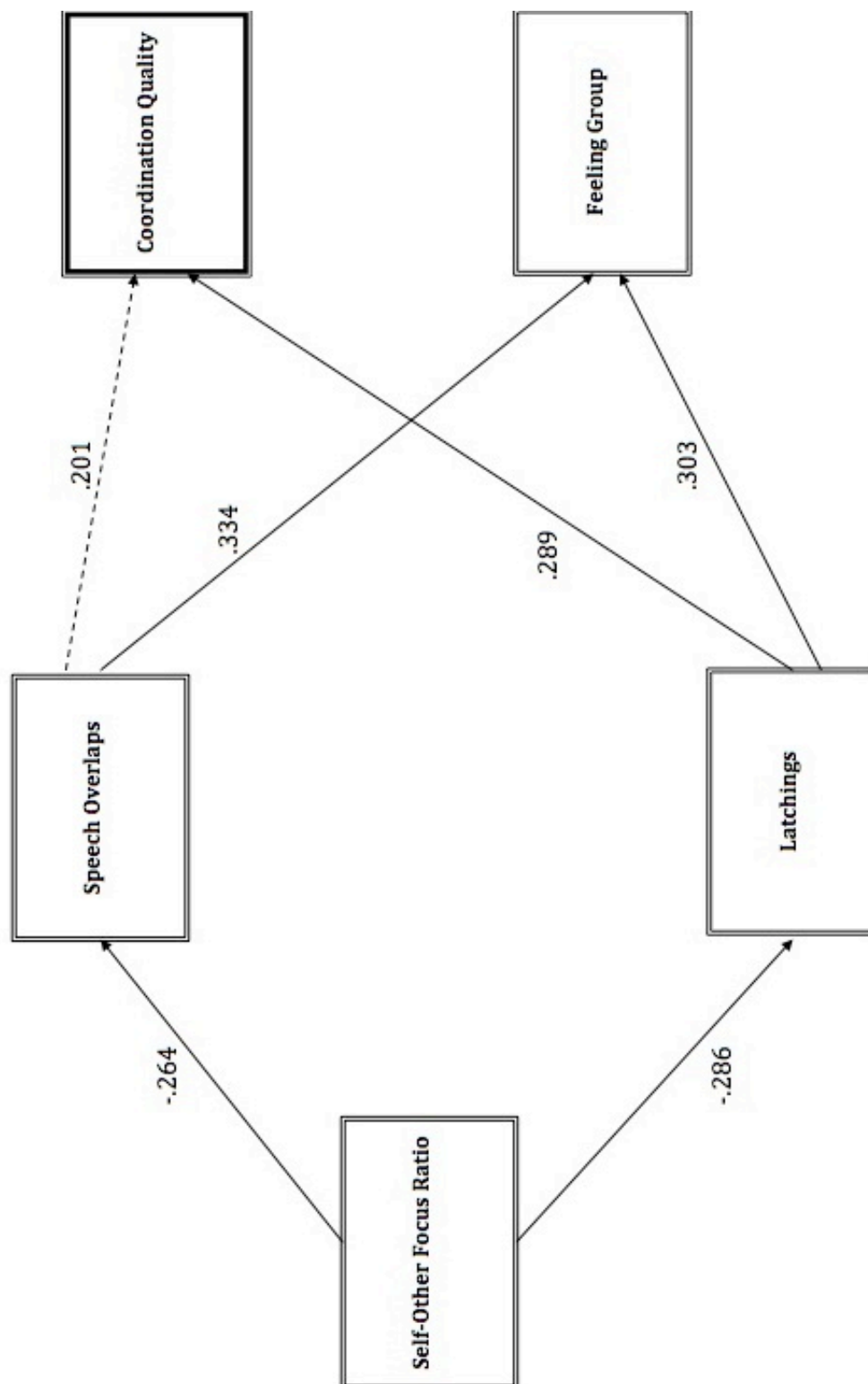
Figure 2.1. A model of knowing and acting in performing coordination
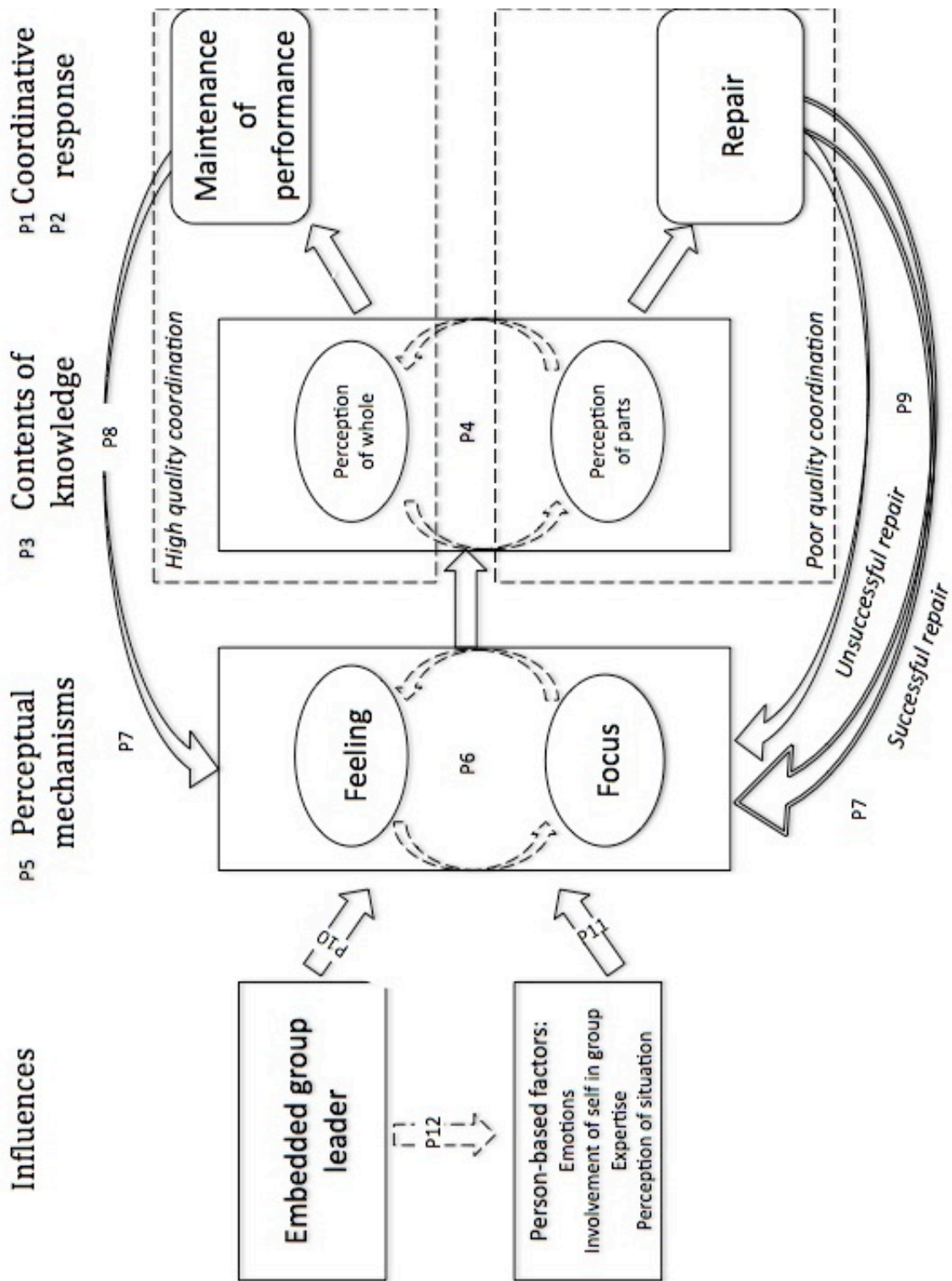
Figure 2.2. Conductor-singer shared gesture

APPENDIX A

Pre-experimental questionnaire

Participant Letter_____
Condition_____
Experimenter/RA_____
Date/Time_____

Pre-experimental Questionnaire

In this section, indicate the extent to which you agree or disagree with each statement below:

Circle one response for each question

	Strongly Disagree	Somewhat Disagree	Neither Disagree nor Agree	Somewhat Agree	Strongly Agree
I'm always trying to figure myself out	1	2	3	4	5
I reflect about other people a lot	1	2	3	4	5
I think about myself a lot	1	2	3	4	5
I often daydream about myself	1	2	3	4	5
I'm constantly questioning the motives of others	1	2	3	4	5
I never take a hard look at myself	1	2	3	4	5

I generally pay

attention to my inner feelings	1	2	3	4	5
I'm alert to changes in other people's moods	1	2	3	4	5
I'm constantly thinking about my reasons for doing things	1	2	3	4	5
I sometimes step back (in my mind) in order to examine myself from a distance	1	2	3	4	5
I'm generally attentive to how other people feel	1	2	3	4	5
I am quick to notice changes in my mood	1	2	3	4	5
I'm always trying to figure other people out	1	2	3	4	5
Generally, I'm not very aware of others	1	2	3	4	5
I know the way my mind works when I work through a problem	1	2	3	4	5
Other people are often the subject of my thoughts	1	2	3	4	5
I never scrutinize other people	1	2	3	4	5
I act the same way no matter who I am with	1	2	3	4	5

I have respect for the authority figures with whom I interact	1	2	3	4	5
I value being in good health above everything	1	2	3	4	5
It is important for me to maintain harmony within my group	1	2	3	4	5
I'd rather say "No" directly, than risk being misunderstood	1	2	3	4	5
My happiness depends on the happiness of those around me	1	2	3	4	5
I would offer my seat in a bus to my professor	1	2	3	4	5
I prefer to be direct and forthright when dealing with people I've just met	1	2	3	4	5
I respect people who are modest about themselves	1	2	3	4	5
Having a lively imagination is important to me	1	2	3	4	5
I feel comfortable using someone's first name soon after I meet them, even when they are much older than I am	1	2	3	4	5

I often have the feeling that my relationships with others are more important than my own accomplishments	1	2	3	4	5
Being able to take care of myself is a primary concern for me	1	2	3	4	5
I am the same person at home that I am at school	1	2	3	4	5
I should take into consideration my parents' advice when making education/career plans	1	2	3	4	5
I enjoy being unique and different from others in many respects	1	2	3	4	5
It is important to me to respect decisions made by the group	1	2	3	4	5
I am comfortable with being singled out for praise or rewards	1	2	3	4	5
My personal identity independent of others, is very important to me	1	2	3	4	5
I will stay in a group if they need me, even when I'm not happy with the group	1	2	3	4	5

Even when I strongly disagree with group members, I avoid an argument.	1	2	3	4	5
I will sacrifice my self-interest for the benefit of the group I am in	1	2	3	4	5
Speaking up during a class is not a problem for me	1	2	3	4	5
If my brother or sister fails, I feel responsible	1	2	3	4	5

In the following section, please respond to the following statements by circling either "True" or "False"

a. I find it hard to imitate the behavior of other people.

True   False

b. At parties and social gatherings, I do not attempt to do or say things that others will like.

True   False

c. I can only argue for ideas which I already believe.

True   False

d. I can make impromptu speeches even on topics about which I have almost no information.

True   False

e. I guess I put on a show to impress or entertain others.

True   False

f. I would probably make a good actor.

True   False

g. In a group of people I am rarely the center of attention.

True   False

h. In different situations and with different people, I often act like a very different person.

True   False

i. I am not particularly good at making other people like me.

True   False

j. I'm not always the person I appear to be.

True   False

k. I would not change my opinions (or the way I do things) in order to please someone or win their favor.

True   False

l. I have considered being an entertainer.

True   False

m. I have never been good at games like charades or improvisational acting

True   False

n. I have trouble changing my behavior to suit different people and different situations.

True   False

o. At a party I let others keep the jokes and stories going.

True   False

p. I feel a bit awkward in public and do not show up quite as well as I should.

True   False

q. I can look anyone in the eye and tell a lie with a straight face (if for a right end).

True   False

r. I may deceive people by being friendly when I really dislike them.

True   False

APPENDIX B

Evaluation forms/manipulation checks

Participant Letter_____
Condition_____
Experimenter/RA_____
Date/Time_____

Evaluation Form

Please indicate the extent to which you agree or disagree with each statement below by circling one response for each question:

	Strongly Disagree	Somewhat Disagree	Neither Disagree nor Agree	Somewhat Agree	Strongly Agree	
I gave the best contributions that I could.	1	2	3	4	5	I Don't Know
I did not meet any artistic standards.	1	2	3	4	5	I Don't Know
I can identify which contributions were mine if I look at the song.	1	2	3	4	5	I Don't Know
I was innovative and creative.	1	2	3	4	5	I Don't Know

Evaluation Form

Please indicate the extent to which you agree or disagree with each statement below by circling one response for each question:

	Strongly Disagree	Somewhat Disagree	Neither Disagree nor Agree	Somewhat Agree	Strongly Agree	
The other people in this task gave the best contributions they could.	1	2	3	4	5	I Don't Know
The other people in this task did not meet any artistic standards.	1	2	3	4	5	I Don't Know
I can identify which contributions were made by the other people in this task if I look at the song.	1	2	3	4	5	I Don't Know
The other people in this task were innovative and creative.	1	2	3	4	5	I Don't Know

Evaluation Form

Please indicate the extent to which you agree or disagree with each statement below by circling one response for each question:

	Strongly Disagree	Somewhat Disagree	Neither Disagree nor Agree	Somewhat Agree	Strongly Agree	
We gave the best contributions that we could.	1	2	3	4	5	I Don't Know
We did not meet any artistic standards.	1	2	3	4	5	I Don't Know
I can see how we related our contributions if I look at the song.	1	2	3	4	5	I Don't Know
We were innovative and creative.	1	2	3	4	5	I Don't Know

Evaluation Form

Please indicate the extent to which you agree or disagree with each statement below by circling one response for each question:

	Strongly Disagree	Somewhat Disagree	Neither Disagree nor Agree	Somewhat Agree	Strongly Agree	
Time was a major concern in this task.	1	2	3	4	5	I Don't Know
The task was accomplished as quickly as possible.	1	2	3	4	5	I Don't Know
The contributions to this song were efficiently processed.	1	2	3	4	5	I Don't Know
Time was used efficiently in this task.	1	2	3	4	5	I Don't Know

APPENDIX C

Jingle record sheet

Your seat letter:

The product name:

The Jingle

_____
_____
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APPENDIX D

Post-experimental questionnaire

Participant Letter_____
Condition_____
Experimenter/RA_____
Date/Time_____

1. What is your gender? Please circle one of the options below:

    Male   Female

2. What is your race/ethnicity? Please circle one of the options below:

    African-American/Black   American Indian/Alaska Native   Asian

Hispanic/Latino   Native Hawaiian/Other Pacific Islander   White   Other

3. Please use the scale below to indicate **how your actions during the task made you feel**. Circle the number below that best matches your rating.

Unpleasant   Neutral   Pleasant

    1   2   3   4   5   6   7   8   9

4. Please use the scale below to indicate **how the actions of others in the group during the task made you feel**. Circle the number below that best matches your rating.

Unpleasant   Neutral   Pleasant

    1   2   3   4   5   6   7   8   9

5. Please indicate your agreement with the following statements about your experience with the task by circling one response:

	Strongly Disagree	Somewhat Disagree	Neither Disagree nor Agree	Somewhat Agree	Strongly Agree	
I felt that I was in harmony with others	1	2	3	4	5	I Don't Know
I was focused on my own contributions.	1	2	3	4	5	I Don't Know
I felt as if I was working by myself but others happened to be present.	1	2	3	4	5	I Don't Know
I felt "one" with the group.	1	2	3	4	5	I Don't Know
I was focused on others' contributions.	1	2	3	4	5	I Don't Know
I felt part of something greater than myself.	1	2	3	4	5	I Don't Know
I did not feel like this was truly a group effort.	1	2	3	4	5	I Don't Know
I felt like I was "in a groove" with others.	1	2	3	4	5	I Don't Know
I felt distracted by something other than the task at hand.	1	2	3	4	5	I Don't Know
I did not feel as if I was "one" with others.	1	2	3	4	5	I Don't Know
I felt like a true member of a team.	1	2	3	4	5	I Don't Know

APPENDIX E

Coordination rating form

1. The partners engaged in simultaneous movement (how much movement appears to begin or end at the same moment?)
2. The partners had similar tempos of activity (how much are people "marching to the beat of the same drummer?)
3. The partners' interaction was coordinated and smooth (how smoothly does the interactants' flow of behavior intertwine or mesh evenly or smoothly?
4. The partners matched one another's behaviors.

	1	2	3	4
(7) Very Strongly Agree				
(6) Strongly Agree				
(5) Somewhat Agree				
(4) Neither Disagree nor Agree				
(3) Somewhat Disagree				
(2) Strongly Disagree				
(1) Very Strongly Disagree				

APPENDIX F

Song rating form

Please use the scale below to indicate what you think about the jingle along the following dimensions:

A.
Bad   Good

    1   2   3   4   5   6   7

B.
Dislike   Like

    1   2   3   4   5   6   7

C.
Boring   Interesting

    1   2   3   4   5   6   7

D.
Uncreative   Creative

    1   2   3   4   5   6   7

E.
Uninformative   Informative

    1   2   3   4   5   6   7

F.
Incoherent jumble of lines   Well-integrated lines

    1   2   3   4   5   6   7

APPENDIX G

Coding scheme for song creation task coordinative behaviors

1. Non-task orientation (verbal): This is the time spent (count) discussing anything <u>other than</u> how to create the song, or providing words, ideas or lines that will help add to/generate the song, e.g. talking about doing other studies, or possibility of being watched.

2. Non-task orientation (non-verbal): This is the time spent (count) engaging with materials other than those provided in the experiment, e.g. playing with laptop, checking cell phone. This also includes looking up and away from people, whether towards the wall, or towards the camera.

3. Orientation to self: This is the time spent (count) engaged in activity that indicates a focus on the self.
   a. *Looking*, e.g. down at one's record sheet, without writing.
   b. *Touching/Shuffling,* e.g. moving one's papers around, picking them up etc.
   c. *Requesting audience*, e.g. "Do you want to hear mine?"
   d. *Suggesting*, e.g. "How about…?"
   e. (Not following another's question or line) *Contributing*, e.g. saying out own ideas or lines to song (with or without writing them down first)
   f. *Separately contributing*, e.g. writing out own lines then sharing with group
   g. *Accepting (non-verbal)*, e.g. writing down the line(s) one contributes to group
   h. *Rejecting (oneself),* e.g. *contributing*, or *verbally answering* but then immediately saying "...but that is (would be) awkward/dumb…" or physically pulling away from group members
   i. *Verbal Questioning (self)*, e.g. "Does that sound right?" immediately following self-contribution
   j. *Self-modification,* e.g. re-wording self-contributed line immediately after contribution (not following another's contribution)
   k. *Quiet singing*, e.g. singing out words to background music to self.
   l. *Adaptor gestures,* e.g. scratching, shifting clothes, flipping hair back, coughing
   m. *Holding/Claiming floor*, e.g. saying "Umm," or "Wait" before pause in speech or maintaining a gesture while paused in speech
   n. *Non-relevant transition*, e.g. changing topic when response to it is expected
   o. *Acceptance (verbal)*

4. Orientation to other: This is the time spent (count) engaged in activity that indicates a focus on the other.

a. *Physical orientation (body),* e.g. turning one's upper body towards another person.
b. *Physical orientation (head and face),* e.g. turning only one's head or face towards another person.
c. *Looking*, e.g. down at others' record sheet, or at another person
d. *Touching,* e.g. reaching out and/or touching another person's record sheet
e. *Verbal Questioning*, e.g. asking questions about what others are thinking or would like to say (prior to any contribution being offered)
f. *Verbal Answering*, e.g. responding to questions asked by others
g. *Nonverbal Answering*, e.g. nods or shakes of head, shrugging of shoulders immediately following *verbal questioning*
h. *Sharing (record sheet),* e.g. re-positioning one's record sheet so another could see its contents
i. *Moving*, e.g. moving chair or body physically closer to another
j. *Accepting (verbally),* e.g. saying "Alright!" in response to another's contribution
k. *Accepting (non-verbal),* e.g. writing others' contributions OR smiles, nods that: (1) immediately follow a contribution and (2) are themselves followed by speech or action that confirms/validates
l. *Rejecting (verbal),* e.g. saying "That'll sell" sarcastically
m. *Rejecting (non-verbal),* e.g. not writing other's contributions at all; physically pulling away from others in responding to their contributions
n. *Visibly gesturing,* e.g. performing hand gestures that indicate rhythm of music
o. *Audibly singing,* e.g. singing out words to background music to others [must include eye contact with another]
p. *Seeking validation*, e.g. asking "Right?" or "Don't you think?" after making a contribution
q. *Giving rationale*, e.g. providing rationale behind one's contribution

5. Orientation to self-in-relation-to-other: This is the time spent (count) engage in activity that indicates a focus distributed between the self and others.
a. *Group questioning*, e.g. asking, "Should we…?"
b. *Group singing*, e.g. singing out words together as a group
c. *Suggesting*, e.g. saying, "We can try…"
d. *Line completing*, e.g. finishing another person's contribution (both in cases of overlap with person and when other has paused/stopped)
e. *Modifying*, e.g. changing another's contribution, but not completely so.

6. Working memory: This is the number of instances (count) that participants in which participants demonstrate some attempt to recall the information being communicated.
a. *Repeating (self),* e.g. saying lines to self (not after a request)
b. *Requesting repetition (of other),* e.g. asking, "What did you say again?" (in general)
c. *Requesting repetition (of shared lines),* e.g. asking, "What was it again?" (regarding a specific line) when the contribution was jointly constructed, or repeating just-contributed line and pausing for other to fill in the rest

d. *Repeating (for others),* e.g. repeating contributions made when asked about another's contributions.

7. Working self-concept: This is the number of instances (count) of pronoun usage in communicating about the task.
   a. I
   b. Me
   c. You
   d. We
   e. Us
   f. Our
   g. His
   h. Her

8. Responsiveness: This is the time spent (count) providing a timely, relevant and appropriate response to another's communication.
   a. *Brief facilitative overlap,* e.g. saying "Yeah," "Right," or "uh huh" while someone else is speaking; is validating/supportive
   b. *Brief overlap at end of speaking turn* e.g. beginning one's turn at talk just at the last few words or syllables of the prior speaking turn.
   c. *Non-facilitative overlap,* e.g. overlapping with a new topic or contribution during another's speaking turn. (reverse)
   d. *Floor maintenance,* e.g. not allowing someone's claim on the floor ("Umm" or "Wait") and continuing to speak. (reverse)
   e. *Acceptance (verbal),* e.g. saying "Alright!" in response to another's contribution
   f. *Acceptance (non-verbal),* e.g. writing others' contributions
   g. *Rejection (verbal),* e.g. saying "That'll sell" sarcastically
   h. *Rejection (non-verbal),* e.g. not writing other's contributions
   i. *Repetition*, e.g. verbally repeating another's contributions

9. Coordination: This is the time spent (count) in explicit management of how the contributions interrelate with one another.
   a. *Assigning*, e.g. assigning lines their positions, possibly moving them around or splitting them up.
   b. *Rhyming*, e.g. use of rhyming (yes/no)
   c. *Rhyming trial*, e.g. trying out words that might rhyme with other/prior words
   d. *Branding*, e.g. use of a brand as a framework for the contributions (yes/no)
   e. *Conceptualizing,* e.g. provision of a central idea as a framework for the contributions (yes/no)
   f. *Standardization*, e.g. using a frame or concept such as "Let's make these lines really <u>short</u>" to shape all the lines of a song
   g. *Construction*, e.g. discussion of number of words and syllables; whether a contribution "fits" the structure or not

10. Ambiguous: e.g. playing with laptop, as well as talking to others, laughing (with/out follow-up; with/out eye contact), smiling (with/out eye contact)

APPENDIX H

Interview schedule

<u>Interview Protocol</u>
<u>Exploring the experience of coordination in choral singing</u>

Research Question: What is the cognitive and affective experience of coordinating sounds in a large community choir?

Introduction
Hello, and thank you for agreeing to let me interview you.

[Communicating my research objectives]: I have been a member of the Choral Union for the past three seasons, and have enjoyed singing with and coming to know members like yourself. While I have my own personal experiences to draw upon, hearing about your own experiences as a member of the choir will be most helpful in helping me gain a better understanding of what being a choral singer is like and what it means for a variety of people. Because I think that singing together is such a meaningful and powerful activity in today's culture, I think that the Choral Union has a lot of lessons for us about working together well. I think this will help people who play all sorts of roles in organizations to work together better. I hope to use what we discuss in this interview in my dissertation, and I may one day publish what you help me discover.

Whenever you want something you're about to say to be off the record, feel free to tell me so and I will turn the recorder off/stop taking notes. This interview will take approximately 2 hours. If we finish before that time, you are free to leave. Do you have any questions before I begin?

Introductory Questions:
- Can you each please state your name and your vocal part?
- I've only been in the Choral Union for the past two seasons. How long have you been in the choir?
- There are many reasons for joining a choir. Can you describe for me how and why you became a member of this choir, and why you continue to sing with the Choral Union? *I know there's probably a really long story here, but I'd love to know just a high-level story on how you became involved.*

Coordination (quality)
- Let's pretend that I am a perfect stranger, who has never sung in a choir before. Can you tell me, from your own perspective and in as much detail as possible, what is going on while the choir is singing? I am interested in what you are doing, what the other people around you are doing, and especially in what you are thinking and feeling.
- I'm particularly interested in what you might be experiencing or doing when the choir is making beautiful music. Think for a minute about a time when you felt that the choir was making beautiful music. With that in mind, can you describe that experience to me in as much detail as possible?
  - What were you experiencing during that time?
  - Was this during a rehearsal or during a performance?
  - What kind of music was it?
  - What were you thinking and feeling during that time?
  - Were you focused on anything in particular at the time?
  - For example, were you focused on the members of your own section, the other sections, the director, your score, the orchestral sound?
  - Are there other things that you may have been focused on?
  - What sorts of words would you use to describe how you felt at the time?
  - What made the experience feel the way it did: your reaction to something in particular, others' reactions, the characteristics of the piece, the conductor?
  - REHEARSAL: Where/How did other singers, the conductor, and/or the accompanist all come into play?
  - PERFORMANCE: Where/How did other vocalists, the conductor, and/or the orchestra all come into play?
  - (If reported…) What let/How did you know that everyone else "got it" or "clicked" or was "on track"?
  - (If reported…) What made the rehearsal feel like time passed quickly or that it was interesting or fun? (or other descriptions of feeling)
  - Was there a certain point in time in the piece that you felt like this, several different times, or did this last for the entire piece?
  - How did/what made this experience end?

- What about when a performance [felt like it] went really poorly? Can you describe what that was like?
  - Was this during a rehearsal or during a performance?
  - What kind of music was it?
  - What were you experiencing during that time?
  - What were you thinking and feeling during that time?
    - Were you focused on anything in particular at the time?
    - For example, were you focused on the members of your own section, the other sections, the director, your score, the orchestral sound?
    - Are there other things that you may have been focused on?
    - What sorts of words would you use to describe how you felt at the time?

- o What made the experience feel the way it did: your reaction to something in particular, others' reactions, the characteristics of the piece, the conductor?
  - o REHEARSAL: Where/How did other singers, the conductor, and/or the accompanist all come into play?
  - o PERFORMANCE: Where/How did other vocalists, the conductor, and/or the orchestra all come into play?
  - o (If reported…) What made the rehearsal feel like time passed quickly or that it was interesting or fun? (or other descriptions of feeling)
  - o Was there a certain point in time in the piece that you felt like this, several different times, or did this last for the entire piece?
  - o How did/what made this experience end?
- Can you describe a time when <u>you</u> were performing well/not so well, but the <u>choir</u> was having a poor/good performance?
  - o What happened?
  - o What was that like?
- So we've been talking about your experience in a rehearsal/performance/rehearsal and performance.
  - o Are there differences between rehearsal and performance for you?
  - o Can you describe them to me?
  - o Does this change the experience for you between rehearsal and performance?
  - o Can you describe for me how rehearsals change or progress over time from the first time we pick up the score to the week of performance? What happens differently and what stays the same across rehearsals?

Experiencing coordination within and between sections
- I am really interested in learning more about your own singing as part of a section in a choir. I suspect it is quite different to sing together with others than to sing alone. (make sure to get specific examples/stories/episodes)

- Overall, can you describe your experience singing with the other members of your vocal section? What are you thinking and feeling when you sing with the (basses/altos/tenors/sopranos)?

<u>Your own singing:</u>
- How does your own singing contribute to the overall quality of the sound?
- Are there particular people that you like to sing next to? Why is this the case? How do they influence your own singing?
- While singing, who or what do you listen to most closely?
  - o Possible PROBE: Do you pay attention to the individuals near to you, or to the overall sound that you hear from other sections, or the choir? (*attention to other/attention to collective*)
- What particular qualities of the sound do you think you influence, if any (e.g. volume, pitch, enunciation, rhythm etc.)?
- How does your own singing contribute to the sound of your section?

- How do you think *you* contribute to the performance of other sections (in terms of tonality, pitch, rhythm and volume) by your singing?

Your section's singing:
- How does the sound of your section influence your singing?
    - Possible PROBE: (in terms of tonality, pitch, rhythm and volume, expressiveness)
    - Does your own vocal part provide a certain quality to the overall sound/influence the other sections?

Other sections' singing/placement:
- How do the contributions of the other sections (in terms of tonality, pitch, rhythm and volume, expressiveness) influence your singing?
- Do you think the seating arrangement of the sections affects your singing?
    - If yes, then how so?
    - Or why not?

Rehearsal space
- Can you draw me a map of the rehearsal room and indicate where you would normally sit/stand during rehearsal? (use a check mark)
- Can you also point out other places in the room where there might be people or objects that influence how you sing? Anyone and anything may be important for your singing in the choir.
- How do these particular people or objects influence your singing?
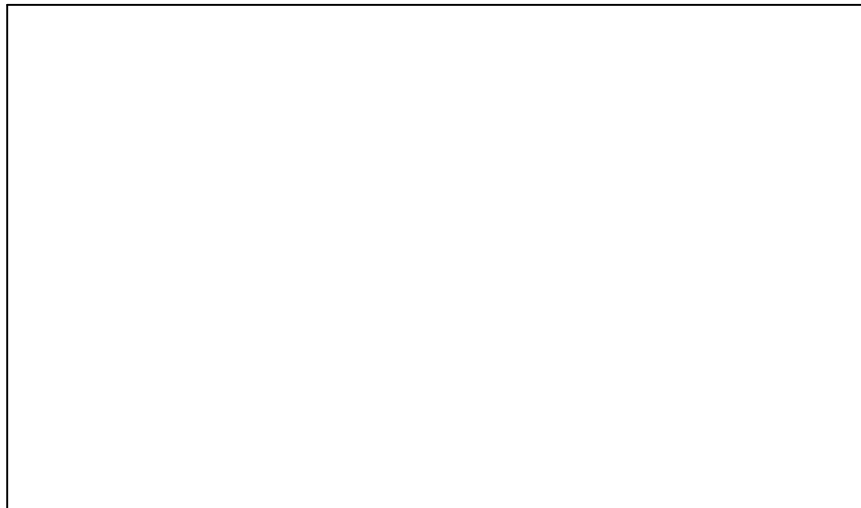
- PROBE: Where/what are you focused on at times when rehearsal is going well/not so well? (*attention/performance*)

The Director and Your Singing (*status, expertise, interdependence*)
- The director/conductor is responsible for a number of things in the choir. Does he influence your singing? How?

- Can you describe your experiences with previous choir directors? How are these experiences similar and/or different from those with Jerry?
  - o PROBE: Were these experiences in audition, rehearsal or performance?

- You've mentioned several things that you (don't) enjoy about singing with the Choral Union. Can you describe other things that you (don't) enjoy about singing with the Choral Union?

Is there anything else that you would like to share with me that we did not have a chance to cover?

Thank you so much for your time!

Possible addenda for interviewing the conductors and the manager

Jerry (and assistant conductors):
What has been your past experience with conducting choirs? Orchestras? Have the two experiences influenced each other? How?
How would you describe a good/bad rehearsal? What was going on?
How would you describe a good/bad performance? What was going on?
How do you prepare for rehearsal/performance?
What do you focus on during a rehearsal?
What do you focus on during a performance?
What makes you focus on particular parts of the music? Or on particular parts of the chorus?
What's the experience of focusing on these parts? How do feel and what is going through your mind as you devote time to focusing on particular elements of the music or of the chorus?
Would you rather be able to go through an entire rehearsal smoothly?
What else is important to you in rehearsal/performance?

Kathy (CU manager):
Have you held this position or similar positions in prior choirs?
How long have you been a manager in the CU?
What is involved in your role as manager?
Does your role change the experience of rehearsal/performance for you?
Does your role cause you to focus on things other than the singing? Or to focus on the singing in a different way than in choruses where you were not the manager?

How is the CU experience related to other aspects of participants' lives? To different times of the year?
How would interview questions successfully capture people's cynicism and idealism, i.e. their various and ephemeral attitudes about the values of the CU.

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