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Embodied Knowledge in Ensemble Performance
Accepted Manuscript Copy

Chapter 1. A Question of Ensemble

As the rehearsal begins, the members of my low brass trio go about their individual business of preparation. I blow air and a few random notes through my bass trombone, the French horn player oils a particularly aggravating valve and the tenor trombonist pulls her case alongside her chair so as to have metronomes and tuners at hand. Upon deciding which piece we will work on, a transcription of a trio sonata by Arcangelo Corelli, we further determine the movement to play. We agree to run through it first, to give us an idea of the overall state of readiness of the movement for performance. After tuning, we settle into our performing positions: the horn player and I put our instruments to our lips and make eye contact while the tenor trombonist sits up and keeps an eye on her part. With a quiet, steady breath, we begin to play. My part, the lowest, creates a moving line against that of the more sedate horn. I bob slightly with the larger pulse and try to give a sense of line that matches the longer phrases in the other part. The trombonist joins us, her preparatory breath feeling more like a continuation of previous events than the first notes of her part. Against the lingering notes above me, I constantly try to gauge my tuning, matching up every interval so that none draw attention to themselves. Gradually, the upper two musicians expand their tone qualities, their original *piano* blossoming into a weightier sound. Just as they try to stay consistent harmonically, I focus on solid timekeeping, my moving line underpinning the other parts. Dissonances become a joy, and we begin to make the most of their resolutions. I can tell that the hornist and the trombonist, whose parts balance

between unison, dissonance and resolution, are constantly adjusting their intonation to the sounds around them. Occasionally, we land on a chord that resonates not only our instruments, but our bodies as well – one of the great pleasures of acoustic performance. We near the end of the short movement, feeling the momentum of the piece decrease. Easing into the last few chords, my physical bobbing increases slightly as my quavers lengthen. Arriving at the final chord, we relax and feel the movement dissipate into the space around us. We end with an almost imperceptible nod, keeping our instruments up for a moment until it feels as if the piece has properly finished.

This narrative, drawn from a typical rehearsal, highlights processes that continually take place within ensemble performance. In this context, musical performance does not require a non-performing audience, simply the communal production of music. The example chosen to start this book might have come from any number of rehearsals or performances by any number of ensembles and illustrates the types of thoughts, concerns and experiences of an ensemble musician in the Western classical tradition. As a bass trombonist who has focused on chamber music performance, my understanding of what it means to create music with other people is filled with such memories and experiences. Playing music together is not a single activity, but encompasses a spectrum of processes, ranging from the more quantifiable rhythmic synchronization and adjustment of intonation to the more elusive coordination of dynamics, phrasing and interpretation. These processes are all necessary for the creation of a cohesive musical performance and are unique to performing music within an ensemble.

This book explores musical interaction as found in small ensemble performance. Although the conclusions reached through the discussions found in this text may be

valid for non-Western musical traditions, complexities easily arise from attempts to generalise across multiple cultures and musical heritages. Whilst I will make efforts to point out similarities between the conclusions of my research and existing ethnomusicological literature, I must stress that my formal performance background and research specialities are in Western classical music and jazz. Therefore, throughout this book I will primarily discuss ensemble interaction within Western art music.

Although musicians have played in ensembles as long as musical performance has been in existence and, to this day, can still teach successive musicians best practice when involved in ensembles, theoretical knowledge of the procedural underpinnings of small ensemble interaction is incomplete. Recent academic research on ensemble interaction approaches the topic from a primarily sociological stance. This work is beneficial in that it allows researchers to frame this topic within established concepts of interpersonal dynamics. That said, the uniqueness of musical groups among other collections of people is recognised by psychologists Vivienne Young and Andrew Colman, who describe ensembles as 'an unusual kind of social group whose mode of interaction involves a degree of intimacy and subtlety possibly not equalled by any other kind of group' (Young and Colman, 1979: 12). Given the idiosyncratic nature of the interaction which takes place in musical ensembles, previous research on group performance may be considered to be the pursuit of a framework or paradigm from another field that can be applied best within a musical context. This search has provided a host of possibilities drawn from the fields of psychology,[1] sociology,[2] conversation

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[1] Blank and Davidson, 2007; Garnett, 2009; and Ginsborg et al., 2006.

[2] Davidson, 1997; Davidson and Good, 2002; Ford and Davidson, 2003; King, 2006a; King, 2006b; King and Ginsborg, 2011; Murnighan and Conlon, 1991; Seddon and Biasutti, 2009; and Young and Colman, 1979.

studies and linguistics,[3] neurology and cognitive studies,[4] and even ergonomics.[5] However, as will be seen, this body of literature is inadequate as the primary source of understanding musical ensembles, particularly because insufficient attention is given to the practical knowledge performers have acquired through experience within ensembles themselves.

Regardless of its apparent suitability, the wealth of interdisciplinary sources upon which this research is drawn is primarily concerned with verbal interaction between group members. Research on the balance of activities during rehearsal has noted that chamber groups tend to spend the majority of their rehearsal time playing rather than engaging in verbal discussion.[6] The mechanisms for determining musical variables such as tempo, dynamics, intonation, phrasing and interpretation must therefore emerge during this form of social musicking. Whilst these mechanisms exist within a single musician during solo performance, ensemble performance necessitates the simultaneous consideration of these variables between multiple individuals. The emphasis that musicians give to nonverbal interaction suggests that research into ensemble interaction should accordingly focus on the communal act of making music. Therefore, I may pose the first of four research questions:

I. How do musicians interact and share information with each other while performing?

[3] Davidson and King, 2004; Davidson, 2005; Sawyer, 2005; and Williamon and Davidson, 2002.

[4] Garnett, 2009; Manduell and Wing, 2007; and Tovstiga et al., 2004.

[5] Davidson, 2005.

[6] Blum, 1987; Williamon and Davidson, 2002; Tovstiga et al., 2004; Blank and Davidson, 2007; and Seddon and Biasutti, 2009.

In order to comprehensively address this question, it is necessary to identify and highlight what actually happens during ensemble musical performance. Needless to say, the primary activity occurring during instrumental performance is the operation of a musical instrument.[7] Albeit straightforward, this fundamental element has previously only been the focus of pedagogical materials specific to each instrument or family of instruments. That being said, recent research on performance has begun to investigate the cognitive frameworks underlying musicians' actions with the intent of quantifying and categorising physical gestures used during performance (Godøy and Leman, 2010; Davidson, 2012). From a practical perspective, however, it may be more important to identify how musical content may affect the ways that performers have to interact with their instruments instead of creating a gestural typology. A firm grasp of the relationships between musical content and the actions required in playing it is necessary to understand the practical processes integrated within ensemble performance.

This first research question makes the assumption that we know the nature and characteristics of the information being shared amongst performers. This may not be the case. Whilst one could simply say that such information pertains to the variables of the music being played, such an answer may be too general. Is the information being shared purely of a musical nature (that is to say, relating to variables such as tempo, dynamic, intonation, phrasing and interpretation) or does it involve other 'extramusical' elements? May this information exist in other forms or be expressed through different media? I would argue that it is impossible to fully understand the medium by which information is transferred without understanding (at least partially) the qualities of the

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[7] In vocal performance, the voice naturally serves as a musical instrument, as it has its own idiosyncratic operation distinct from that of speech.

information itself. Thus, in order to comprehensively answer the first research question, it is necessary to solidify understanding of the information being shared:

II. What is the nature of the information being shared in ensemble performance?

Regardless of the theoretical issues which surround the nature of 'musical information' (should such information be deemed purely musical), such information may correlate to a certain degree with the specific musical content which is being performed. If so, how many this correlation be reflected in the individual performances of each musician? It is therefore necessary to consider the phenomenological experience of individual musicians:

III. To what extent does the musical content being performed affect the ways it has to be physically created by musicians?

Consequently, the fourth research question combines elements of the first three:

IV. How does the physical relationship between the performer and their instrument relate to communicative and interactive processes of ensemble performance?

By isolating the ways that individual musicians act during performance, this book investigates ensemble interaction as found in musical performance itself, rather than within verbal discussion. Therefore, it provides the basis upon which ensemble performance may be understood in a way not dependent upon the limited paradigm of verbal communication. As these research questions are contingent upon an examination of the intimate relationship between a musician and his or her instrument, the tacit understanding that musicians have of this interconnection must be acknowledged. Revealing propositional knowledge from within embedded procedural knowledge is

further problematised by the methodological issues pertaining to capturing and comprehending human experience. This book addresses these concerns through the applied use of reflective practice, as described later in this chapter.

The research questions detailed above provide a framework for this book. Rather than structuring the book in a manner which lays out background material, hypothesis, methodology, results and discussion in a strict order, I have chosen to present my work more organically. This allows me to lead the reader through the same development of argument and thought processes which occurred within my own research. Likewise, this format provides easier reference to some of the interdisciplinary fields which are drawn upon throughout my argument, rather than simply providing a large amount of seemingly disparate background information during a literature review. Chapter 2 examines modes of communication within ensemble interaction as well as how leadership may function in this specialised social context. Through this discussion, previous sociological models that have been applied to musicological research are critiqued in addition to more fundamental concepts such as inter-performer communication in music. Chapter 3 explores the nature and kinds of information which may be shared amongst ensemble performers. By examining rehearsal language, this chapter raises questions about phenomenology of musical experience, both as a performer and listener. Progressing to the third research question, Chapter 4 focuses upon the ways in which musicians interact with their instruments, particularly considering how these interactions may be affected by the performer's musical intentions. This discussion requires an examination of the phenomenology of solo instrumental performance and critique of previous cognitive models. Increasingly, my research will stress that performance requires unique forms of knowledge intrinsically

tied to the experience of making music. From this perspective, Chapter 5 considers the experience of the performer from within an ensemble. Drawing upon the conclusions found in the previous chapters, I examine how musicians 'individual performances may exert influences on that of their fellow ensemble members. After addressing the four primary research questions, further threads of discussion will be examined in the sixth and final chapter. In particular, I will demonstrate the ways in which the proposals found throughout this book may inform the wider sphere of research on performative musical knowledge. Similarly, the final chapter will include speculation upon the applicability of the musicological research I have conducted on the non-musicological fields which have been drawn upon throughout the book.

This introductory chapter begins with an overview of the literature and associated academic fields which are currently at play in ensemble research of Western art music. It must be noted that this is not the place for an exhaustive review of background literature; in-depth assessment of this literature will be presented where pertinent throughout the text. Following this overview is a critique of the methods drawn upon in previous research on ensemble interaction. In light of the research questions posed at the beginning of this chapter, it is necessary to re-examine of the kind of knowledge under consideration when engaging in performance studies. After clarifying the ways in which contrasting forms of knowledge will be examined within this book, an alternative methodological approach is presented which may more suitably address both my research questions and any additional epistemological concerns. I will return to this methodological approach in Chapter 6 in a critique of its efficacy and applicability to research on musical performance.

Investigating ensemble performance

The research questions posed in this book are designed to investigate the mechanisms of ensemble interaction in a way which benefits both active musicians and researchers. Due to this approach, they often blur boundaries between academic disciplines, moving from sociology to philosophy to music theory to neurology within the same discussion. The following section outlines the fields and concepts drawn upon throughout this text so as to clarify the intellectual terrain to be explored. From this standpoint, it will be possible to critique the most common methodologies used within ensemble research and other related fields. This will lay the groundwork necessary to describe and rationalise the methodological approach used within this book.

Current musicological literature on ensemble interaction categorises ensemble interaction in relation to verbal and nonverbal modes of communication, most notably described by Frederick Seddon (2005). With regard to nonverbal communication (the focus of this book), Alexander Jensenius et al. have identified four categories of gestures which may be made during performance: sound-producing, sound-facilitating, sound-accompanying and communicative (2010: 23). Communicative gestures have historically been the primary focus of research on gesture in performance and are interpreted primarily through two models. The first approach, reliant upon a linguistic model of communication, prioritises the identification and categorization of physical gestures in a semantic manner.[8] Therefore, conclusions regarding performers' gestures have arisen in part from research into gestures used during speech,[9] and have been primarily orientated toward communicative signalling between the performer and the

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[8] Clarke and Davidson, 1998; Davidson, 2001; and Davidson, 2005.

[9] Ekman and Friesen, 1969 and McNeill and Duncan, 2000.

audience (Davidson, 2005; Windsor, 2011). The second approach avoids linguistic parallels, proposing that musicians' gestures in performance are not grounded in semantics but instead are indications of interior mental states (Elsdon, 2006). Both of these theoretical models of communication are the result of observation of video-recorded performances. As will become evident, this body of research rarely examines the effects performers' gestures may have on their fellow musician, and when it does, it presumes a similar relationship as that between performer and audience. However, the interaction between ensemble musicians fundamentally differs from that between performer and audience in that coperformers need to coordinate and execute technical actions in order to perform effectively. Coordination of these actions requires some form of implicit or explicit transfer of information (Tovstiga et al., 2004: 9).

Adequate consideration of the first research question requires more than simply an appraisal of the physical gestures that may be used in performance. In addition, it is necessary to examine how leadership may operate within ensembles. This area of research has exclusively approached the question of musical leadership through applied sociological models such as those developed by business theorist James Burns (1978). Recalling that ensembles interact both verbally and nonverbally, it is useful to differentiate this body of literature in terms of these categories. Research on verbally articulated leadership presupposes that musical leadership operates outside of performance, considering ensembles as a variant of other goal oriented groups.[10] Contrary to this approach is research on leadership through physical gesture, which

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[10] Young and Colman, 1979 and Murnighan and Conlon, 1991.

addresses how leadership may be exhibited within performance itself.[11] Whilst these two theoretical models are concerned with the expression of leadership within different contexts, both focus on identifying leadership patterns among ensemble members, ascribing traditional (non-music specific) group roles to musicians. Given this inherent sociological predisposition, it follows that this research is dependent upon observation, interviews and surveys of practitioner literature.

The second research question calls for an investigation into the characteristics of the information being shared in an ensemble. Through the overview of literature found in Chapter 2, however, it will become apparent that current ensemble research fails to address concerns both over the content being communicated between performers and the appropriateness of a communicative paradigm as the basis for understanding ensemble interaction. An examination and application of Lakoff and Johnson's concept of metaphor provides the foundation upon which the relationship of music to the human mind may be understood (Lakoff and Johnson, 1980). Whilst this research has found parallels in musical analysis,[12] there has yet to be extensive investigation on the use of metaphor in understanding performance. Similarly, research on ensemble interaction has extensively focused on the paradigm of communication, drawing upon its process of encoding, transmitting and decoding information and its associated linguistic terms. With continued references to 'nonverbal communication' (King and Ginsborg, 2011), 'communicative gestures' (Dahl et al., 2010), 'modes of communication' (Seddon and Biasutti, 2009) and 'visual communication' (Kokotsaki, 2007) among others, this body

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[11] Goodman, 2002; Manduell and Wing, 2007; Williamon and Davidson, 2002; Davidson and King, 2004; and King and Ginsborg, 2011.

[12] Saslaw, 1996; Zbikowski, 2008; and Zbikowski, 2009.

of research maintains the tacit assumption that musical performers operate in a manner similar to those involved in conversation. However, this paradigm encourages a framework of understanding that is rooted not in musical performance but in social interaction. The use of a communicative paradigm for ensemble interaction is critiqued in Chapter 2, allowing for the establishment of a new paradigm based on performance itself.

An exploration of the direct physical relationship between musician and instrument, the third research question, prompts an investigation into how humans create and experience musical phenomena through the performance. Whilst the term 'phenomena' may be defined primarily as the object of one's perception, for the purposes of this book I use it to refer to a musical act involving both intention and realization. When considering how individuals interact within performance, it is important to distinguish between one's personal intentions and the intentions as perceived by observers; consequently, the concept of attributed intention will be considered later in the book in relation to the fourth research question. There has been little research on the phenomenon of individual performance to date other than neurological studies on how music engages with the human brain (Altenmüller et al., 2006). Whilst this book will call upon some neurological research, it will not be the primary focus. Rather, discussion will be driven by an understanding of performance from the perspective and experience of a performing musician. This is not to say that neurological studies do not have an impact upon musicological research; however, from the frame of reference of an active musician, such medical research has not thus far

been expressed in such a way as to affect the practice of performance.[13] Therefore, this book will investigate the aspects of sensory experience engaged during musical performance that can be identified by the performer themselves. Current research in this area emerges from the application of case studies and experiments conducted by cognitive theorists and experimental philosophers.[14] After establishing the general processes by which musicians can create sound on their instruments, it is then necessary to consider how that fundamental ability may develop into skilled, fluent musical performance. An understanding of this development requires both a review of the acquisition of skill in musical performance as well as consideration of current pedagogical literature.[15]

The potential effects the relationship between musician and instrument can have on the social dynamics of ensemble performance, the fourth research question, has not been explicitly researched to date. As early as the late 1970s, temporal synchronization was extensively explored through the analysis of sound recordings and their corresponding spectrograms (Rasch, 1979). However, coordination of other musical variables such as dynamics, expression and interpretation have remained peripheral to this area of study. Through the first three research questions, it will be possible to discuss interpretative coordination in a manner directly rooted in performance. Although such coordination has been briefly mentioned by Goodman (2002) and Williamon and Davidson (2002), the sorts of information that are shared between

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[13] In other words, whilst it may be objectively interesting to understand what part of the brain is activated during performance, there has yet to be an effective way to relate this information to practical musical activities.

[14] Elsner and Hommel, 2001; Hoffmann et al., 2004; and Tomasello et al., 2005.

[15] Barry and Hallam, 2002; Keller and Koch, 2008; Pecenka and Keller, 2009; and Halmrast et al., 2010.

performers and the process of knowledge transfer has not yet been identified. Given the balance of research conducted thus far, less attention will be paid to temporal synchronization than to the shared understanding of other musical variables. Likewise, from my perspective as a performer, the admittedly important act of coordinating tempi among my fellow musicians does not have as large an impact on the resulting performance as the collaboration of interpretation. An understanding of interpretative coordination should encourage clarification of the processes inherent in the temporal synchronization, whereas the opposite may not necessarily be true.

The final step in understanding ensemble interaction is to consider how the phenomenon of individual performance may be altered within an ensemble context. Primarily, this requires exploration of how inference may function within musical performance. In this manner, the previous discussion on intention may be extended to focus on how musical intention may be attributed to fellow performers. In addition, psychological research on humans' ability to deduce information through visual observation (conducted through the use of laboratory experiments) provides the background necessary to comprehend advanced inferential processes.[16] From this perspective, research on the continuous adaptation which occurs in improvised ensembles may be applied to chamber groups.[17] This research, rooted in performance observation and interviews with skilled musicians, highlights some of the general processes which may occur within musical interaction.

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[16] Runeson and Frykholm, 1981 and 1983.

[17] Tovstiga et al., 2004; Sawyer, 2005; and Kokotsaki, 2007.

Methodological considerations

In order to effectively explore the research questions posed at the beginning of this chapter, it is necessary to consider the methods used within the aforementioned research. Through such a critique, it is possible to arrive at a methodological approach which will suitably address the theoretical, practical and epistemological issues which emerge from ensemble research.

A favourite theoretical approach amongst musicologists researching ensemble performance has been to consider physical gesture as a form of communication. Given this tacit assumption, empirical musicological research has utilised a variety of methodologies, each emphasising a slightly different aspect of communication. Many of these methodologies borrow heavily from those developed in the social sciences, particularly observation, interviews and surveys, analysis of practitioner literature, and laboratory experiments. Application of these methods to musicological research has illustrated, to varying degrees, the significant differences between musical ensembles and other social groups. The following assessment of these methods reveals their potential benefits to this field as well as highlights aspects of musical performance which evade traditional sociological inquiry. From this critique emerges issues surrounding how best to investigate the kind of knowledge involved in skilled practice. It is only through a firm grasp of this form of knowledge that an appropriate and effective methodological framework may be created.

One of the primary methods used in sociological research on ensembles is observation. This allows for the documentation of the actions of ensemble members and, in the case of video recording, a prolonged period for their analysis and review. That being said, there are three particular limits to the knowledge gained through

observation. First, by its nature, this method clearly delineates between those under scrutiny and those conducting research. Whilst an observer may see and hear an ensemble in operation, there is no way for them to fully experience what is going on from within the ensemble at that given time: they are outside of the ensemble, looking in. Second, the conclusions arrived at through observation cannot be easily generalised or directly applied to other specific cases. Individuals' personal and mechanical idiosyncrasies are not necessarily indicative of common human attributes – a point emphasised by Mario Wiesendanger et al. in their research on motor control in violin performance (2006: 112). Third, the interactions between coperformers can often be too subtle or quick to be noticed through casual observation. Motion capture may assuage this issue through the identification of every movement taking place in performance, although the ability to detect movements in performance is secondary to understanding their meaning or gauging their significance.

Unlike observation, interviews and surveys allow researchers to analyse the interactions of ensembles through the experiences of the participating musicians. The personalised accounts exposed through interviews may provide insight into the unique processes that occur in ensembles. Surveys yield information from larger pools of practitioners, increasing the credibility of any generalizations arising from such research. However, whilst they draw directly upon the knowledge of performers themselves, both interviews and surveys have two limitations: timescale and critical rigour. Due to the amount of time necessary for participant response (especially in the case of surveys), these methods are often conducted in situations so far removed from rehearsal and performance that they are forced to gloss over important details. The rehearsal narrative given at the beginning of this chapter provides an example of this

problem; although I can generalise attributes from many rehearsals into a single cohesive representation, I cannot remember the entirety of my experience from a single event, especially in a level of detail necessary for academic research. Likewise, the questions used within surveys often need to be broad enough to elicit responses from a variety of participants. Whilst a large response rate is desirable, it may be at the expense of engaging with precise aspects of performance. Without completely discounting the information gained from interviews and surveys, a lack of specificity reduces their practical applicability and critical rigour.

Practitioner literature, in the same vein as interviews and surveys, allows access to perspectives which are normally restricted to those embedded within musical practice. In addition, the topics under discussion are specifically chosen by the performers themselves. Whilst insightful, this literature has historically been oriented toward a popular (rather than academic) readership, usually detailing the social elements involved in being a professional musician. This is not to say that a lack of scientific rigour discounts the usefulness of this resource. In her work on choral conducting, Liz Garnett suggests that 'the anecdotal assertions from the practitioner literature … arguably present a greater theoretical robustness than the empirical studies that critique them, in that they represent conclusions drawn from a range of experiences, even if that process of abstraction is unsystematic and/or under-documented '(Garnett, 2009: 28). It is worth considering the broad applicability of this literature, although particular areas may have to be re-examined in a more critical manner. Likewise, practitioner literature may provide a foil against which to measure the conclusions which emerge from academic research.

Whereas surveys and practitioner literature may provide general information on ensemble interaction, specific aspects of this phenomenon have been closely examined through laboratory experiments and case studies. By isolating variables and limiting the fields of inquiry to restricted situations, controlled studies can provide the scientific rigour to support general theories presented by practitioners. Advances in computer technology such as the increased accessibility of motion capture allow for heightened precision and technical analysis of the ways that performers operate, both alone and within ensemble settings. However, with these benefits come two main drawbacks to clinical research. First, experiments and case studies may lack the spontaneity and authenticity of uninhibited musical interaction. The construction of an artificial context may not adequately reveal how ensembles interact on a daily basis. Second, the sheer amount of data produced does not necessarily presuppose the development of applicable conclusions. Whilst experiments and case studies are useful tools, critical reception of the data is necessary in order to both relate conclusions to practitioners 'experiences and to situate them in terms of larger theories.

Modes of knowledge

Permeating the lineages of research and the associated methods described above is an issue which complicates interdisciplinary research within performance studies. Skilled musical performance relies on a fundamentally different form of knowledge to that which is created through academic research. The knowledge generated by researchers and that by practitioners are categorised by management theorist John Heron as Mode 1 and Mode 2 knowledge, building upon Gilbert Ryle's distinction between propositional and procedural knowledge (Heron, 1999 citing Ryle, 1949). Difficulties arise when attempts are made to transition between these two modes. Not

only are they articulated in different manners – Mode 1 through language, Mode 2

through action – but they are created by and for different entities. In the case of

performance studies, the two modes of knowledge correlate to the two parties involved

in empirical musicological research; academic musicologists generally create and deal

with Mode 1 knowledge whilst practitioners create and deal with Mode 2 knowledge. In

addition to creating separate forms of knowledge, both groups have unique methods of

knowledge retention and dissemination. Empirical researchers assemble their findings

into prose, allowing for literary dissemination to other academics. Whilst some

performers disseminate their knowledge through written means (particularly in the case

of pedagogical writings), most knowledge is passed on through performance itself.

Historically, there has been resistance to considering such skilled activities as

being expressions of knowledge. As Roland Barthes commented in the 1970s, 'we are

still, and more than ever, a civilization of writing, writing and speech continuing to be

the full terms of the informational structure '(Barthes, 1977: 38). Through the latter half

of the twentieth century, however, there has been an increasing recognition of the value

of non-linguistic knowledge structures within academia. Although the distinction

between Mode 1 and Mode 2 knowledge has become accepted in sociological fields,

particularly occupational psychology, recognition of these two modes of knowledge has

yet to gain significant traction within musicological research on performance.

Throughout this book, I examine ways in which this bipartite conception of knowledge

may inform theoretical and practical understanding of musical performance.

Due to the division between those groups which deal exclusively with Mode 1

or Mode 2 knowledge, their relationship is often described in terms of insiders and

outsiders: emic and etic, in anthropological terms (Harris, 1976: 330). Insiders are those

within the system being studied, actively creating Mode 2 knowledge as a byproduct of their activities. Outsiders are those who are external to those being studied, either physically, socially or culturally, engaging more directly with Mode 1 knowledge. The combination of the differing forms of knowledge created and contrary physical, social or cultural positioning can result in isolating the two groups from each other. In order for research on musical performance to be useful and applicable to both the academic and practicing communities, it is vital that such research avoids (or, at the very least, acknowledges) the possible insider/outsider dichotomy.

Reflecting on methods currently used in ensemble research, methodologies which utilise interviews, surveys and practitioner literature draw upon Mode 2 knowledge in ways which minimise the tension normally felt between insiders and outsiders. As we have seen, however, none of these methods can provide conclusions which are usefully applicable to both groups. In his research on gestural studies in performance, Marc Leman proposes a pluralistic approach to methodology which, whilst motivated by the complexity of gestural studies, may allow for integration of these two modes of knowledge. He writes that:

> the study of gestures cannot be reduced to merely objective measurements of sounds and body movements, nor to simply descriptions of personal experiences and interpretations thereof … The concept of gesture is too complex to be understood from one single methodological perspective, even when considered purely from the viewpoint of an empirical approach (Leman, 2010: 149).

This suggests that a combination of approaches would be most effective, drawing on both informed observation and critical, 'real world 'practice. The following section explores what an amalgamated methodological approach to ensemble research

might entail, providing background and rationale for the methods used within this my research.

Considering action research

In order to build upon the strengths of the methods described above, a unifying framework is necessary to tie together and effective orientate research.[18] Otherwise, an attempt at a holistic approach to ensemble research will succumb to fragmentation or an overabundance of raw data. I propose that action research, a methodology developed through the fields of occupational psychology and sociology, could provide a structure within which to utilise the standard methods of empirical musicological research. The rationale for drawing upon this methodology can be found not only in the organization of action research, but also in its underlying philosophical ideas.

Action research is a sociological methodology that allows the people being studied to become part of the knowledge creation process. Mary Brydon-Miller explains that the methodology goes 'beyond the notion that theory can inform practice, to a recognition that theory can and should be generated through practice '(Brydon-Miller et al., 2003: 15). This ideology often has ethical implications in that it allows the possibility of both socially responsible and socially oriented problem solving (Ibid.: 13). Rather than conducting research for the sake of pure academic inquiry, the underlying tenets of action research reveal cooperative intention on the part of the researchers and practitioners, both in terms of the work conducted and the results concluded.

From a structural standpoint, action research can be described as a cycle of action and reflection. Within this framework is enough flexibility to allow specific

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[18] Material from this discussion developed from a presentation I gave at the Royal Musical Association Study Day: Collaborations in Practice Led Research at the University of Leeds (October 2010).

variations to be developed in order to meet contextual requirements. This adaptability

has enabled action research to be applied to a variety of fields, including organization

development, anthropology, education, economics, psychology, sociology and

management (Ibid.: 12). Stephen Kemmis provides a standard layout of an action

research methodology, tailoring towards a sociological or management based study. He

divides the cycle of action and reflection into four stages:

1. To develop a *plan* of action to improve what is already happening.

2. To *act* to implement the plan.

3. To *observe* the effects of action in the context in which it occurs.

4. To *reflect* on these effects as a basis for further planning, subsequent action and so on, through a succession of cycles.

(Kemmis, 1982: 7; my emphasis)

Within this framework, there is a constant, parallel evolution of both action and

critical examination. This system is often therefore described not simply as a cycle but

as a spiral – the repetition of similar processes on continuously evolving material.

Action research is accordingly flexible in the kind of personnel needed to

conduct it. Whilst there are many variations, each with their own balance between

insiders and outsiders, two appear to be particularly applicable to musicological

research: participatory action research and reflective practice. Participatory action

research combines the specialised theoretical knowledge of academic researchers with

the applied expertise of practitioners through direct interaction with each other (Herr

and Anderson, 2005: 9). This approach enables both groups to draw on their specific

forms of knowledge and resources to address a single issue. The overarching emphasis

on cooperation has made this form of action research favoured in social and economic

development projects as well as research on education. The success of this method

relies on a moderated balance of input between the two participants; otherwise, it may transform into either standard empirical research or an entirely non-rigorous endeavour.

Reflective practice, on the other hand, encourages practitioners to develop the ability to critically examine their own actions (Schön, 1983). By doing so, they can not only become better at their craft but also document the process by which they expand their specific field of knowledge. This method requires practitioners to take it upon themselves to practise critical inquiry in a well documented and rigorous manner. In his book *The Reflective Practitioner* (1983), Donald Schön examines instances of reflective practice in action, presenting examples of occupations in which it works (architecture, psychoanalysis) and does not work (city planning). Even in professions most suited to reflective practice, however, the primary obstacle to development in the field is that of dissemination: 'because of the differences in feel for media, language, and repertoire, the art of one practice tends to be opaque to the practitioners of another '(Ibid.: 271). Thus, conclusions drawn from reflective practice need to be demonstrated or clarified in mediums accessible to their colleagues. Furthermore, in order for insights to be shared in other fields, they need to be explained in such a way as to enter the parlance of general academia (at the very minimum). Otherwise, any advances would not be understandable or applicable to anyone outside of a specific field.

The issues surrounding the dissemination and applicability of Mode 2 knowledge to other fields can be identified as one of the strongest motivating factors for using action research. Kathryn Herr and Gary Anderson remark that 'we cannot escape the basic problems of knowledge generation by elevating practitioners 'accounts of practice to a privileged status. That is why collaborative and participatory forms of research among insiders and outsiders hold so much promise '(Herr and Anderson,

2005: 53). Using practitioner literature is not enough; there needs to be an understanding of the implications of that literature (comprehension from the practitioner's point of view) in order to make full use of this resource. Overcoming issues of perspective and enculturated knowledge is of primary concern when considering the use of action research methodologies within musicological performance studies, and will be addressed further in this book.

I propose that the spiral of practice and reflection found within action research could serve both to acknowledge and utilise the insider/outsider dichotomy in empirical musicological research. Rather than conducting research *on* musicians and the way they interact with each other, a methodology which combines participatory action research, reflective practice and empirical methods would allow for research *by* and *with* musicians. As Hilary Huang explains, 'action research … always includes practitioners as partners in the work of knowledge creation '(Huang, 2010: 95). The knowledge created through this research should therefore be applicable to both practising musicians and academic researchers: accessible and useful through both Mode 1 and Mode 2 formats. Acknowledging the merits and epistemological issues surrounding empirical methods such as observation, interviews, literature review and case studies when applied to ensemble research, I aim to maximise their benefits through their utilization within an action research framework.

This pluralistic methodology, reliant upon the practitioners involved, is tailored specifically for research on ensemble interaction. In this model, the locus of critical reflection shifts subtly back and forth between performer and researcher (if they are two separate entities) as the spiral progresses. The actions of both sides are designed to

directly influence the other in a symbiotic relationship (See Figure 1.1 for a diagram of this model).

[insert Figure 1.1 here - portrait]

Figure 1.1   The performance-based cycle of action and reflection

In this model, the performer acts as a reflective practitioner in their normal musical activities. Their behaviour motivates the action side of the spiral, encompassing the planning and acting stages. Both musician and researcher initially plan which aspect of musical interaction will be under consideration. This allows for any necessary preparation to find an optimal environment in which to conduct the research: not necessarily to create an artificial situation, but to identify what 'naturally occurring ' musical situation might allow for ideal examination of the subject under inquiry. From there, the musician acts and simultaneously observes, participating in their ensemble as they would normally. To a degree, this requires them to temporarily 'forget 'that they are acting as a researcher and allow their musical training to motivate their actions. Cognitive distance from a performance as it is happening may discourage (or, to a certain extent, prevent) musicians from acting intuitively, the activity which is itself being researched.

At this point in the process, the role of the musician and the researcher overlap. Comprehensive observation is possible through the differing perspectives available to each participant. Whilst this appears most feasible when considering a participatory action research scenario – in which the musician and researcher are two different people – the use of video recording allows a single reflective practitioner to take advantage of multiple perspectives. In addition, musicians could benefit from maintaining in-depth journals of their experiences, providing they have time to do so effectively. Although

both video-recorded observation and journal writing would undeniably only capture *post hoc* reflection, their importance in capturing the performer's perspective would be invaluable.

The reflection stage relies most heavily upon the skills and background of the empirical musicologist. Based on observation, the researcher may draw on a consortium of methods from both academic and practitioner perspectives, including interviews with coperformers, case studies and surveys of associated literature. It is important to note that the inspiration of the reflection stage is the actions of the musician. Similarly, the musician may assess the conclusions reached by the musicologist, checking their validity against their experience. Thus, all of the empirical research is grounded in practice.

This cycle of action and reflection may yield a variety of outcomes. The most positivistic (although presumably most rare) consequence would be to arrive at a straightforward conclusion to the questions at hand. A more likely result, however, is that there would be no direct conclusions: instead, the material needed to instigate further cycles of action and reflection. In part due to its reliance on Mode 2 knowledge, action research embraces the creation of knowledge in a non-linear fashion. Brydon-Miller describes this development of knowledge as a form of relinquishing control over the exact course of subjects, encouraging what she calls 'messes '(Brydon-Miller et al., 2003: 21). This continuous expansion of knowledge provides two additional outcomes. First, the clarification of concepts and contexts through experience allows subsequent planning and acting stages to be modified so as to more directly assess the questions at hand. Second, the cycle of action and reflection may inspire new avenues of inquiry that may not have been considered originally.

Method

Within this research project, I serve as a reflective practitioner, assuming the combined roles of researcher and musician. This method relies upon both my personal background and the context within which this research is conducted. I am an actively performing bass trombonist, involved in a variety of ensembles. During my doctoral studies at Birmingham Conservatoire, I participated in small brass ensembles, trombone choirs, contemporary music ensembles, jazz bands, brass bands, wind bands and symphony orchestras. In addition, I performed with The Supergroup, a mixed improvised ensemble consisting of other doctoral researchers at the Conservatoire. At the University of Alaska and the University of Michigan (institutions at which I have previously studied), I focused on ensemble performance, going so far as to receive a masters degree in chamber music while simultaneously pursuing a masters degree in trombone performance. In addition to my activities as a performer, I have collaborated with ensembles as an external researcher. While at Birmingham Conservatoire I was able not only to participate within ensembles but also to observe a variety of others throughout rehearsals, workshops and performances. In particular, I extensively video-recorded the Boult Quartet, the Conservatoire's most senior postgraduate string quartet.

In addition to practical musical experience, I have been involved in musicological scholarship throughout my postgraduate and doctoral degrees. Of particular interest has been the application of nonmusical research to musicological theories and contexts in an attempt to identify the nature of musical knowledge. This has provided me with a background in sociological research as well as a critical approach to academic research in general. The combination of practical and academic experience enables me to be in an ideal position to serve as reflective practitioner within

this project. Recalling the intentions outlined in the preface, this text should not only expand upon the propositional knowledge generated from academic research of musical performance, but allow for theoretical modelling of the procedural knowledge used every day by performers.

At Birmingham Conservatoire, I played in a collection of ensembles for a variety of durations. Long term placements within ensembles extended between one to three months and included participation in a brass band, symphony orchestras and contemporary groups such as Interrobang and The Supergroup. Short term placements generally focused on the preparation of a single concert and included jazz ensemble performances and recordings, brass dectet performances and involvement with professional contemporary ensemble Decibel. Singular involvement involved one-off placement within reading orchestras and substituting for other musicians around the Conservatoire on an *ad hoc* basis. All of these placements provided valuable material and experience upon which I could reflect while simultaneously maintaining my role as an active performer.

My involvement within ensembles was complemented by some of the empirical methodologies discussed previously in this chapter. In working with the Boult Quartet, I observed rehearsals from a first play-through to a polished performance of Samuel Barber's *String Quartet No. 1, Op. 11* (1939). These rehearsals were video-recorded over the span of four days, providing an example of concentrated preparation of a single work. In addition, several rehearsals and performances given by The Supergroup were recorded, allowing for critique and analysis of myself within the environment of a small ensemble. The members of The Supergroup participated in semi-open interviews within rehearsals, allowing me to introduce them to and engage them with critical reflection.

Whilst analysis of the Boult Quartet will be woven throughout the text, the improvisation found within performances by The Supergroup will be examined in detail in Chapter 6.[19]

Underlying my own practice and collaboration with the Boult Quartet and The Supergroup has been an extensive literature review. As will become apparent throughout this text, the academic elements of this research have emerged and been critiqued from a practical perspective due to my ongoing activity as a musician. In this manner, practice informs my reception of academic research, which in turn encourages me to reflect on my practice in new ways.

At the intersection between practical research and academic research lies my reflective journal. In it, I have expanded the examination of my own musical practice to encompass the entire research project. Emphasising the cyclical aspect of action research, the journal presents a vital cohesive element linking action and reflection. In effect, what originally started as research on musical performance has evolved into research upon research on musical performance – an aspect of what Schön refers to as reflective research (Schön, 1983: 309). Whilst the journal was never meant for public use, nearly all of the ideas therein have been reformulated into the formal arguments found throughout this book.

Conclusion

Given the extensive discussion of methodological considerations presented in this chapter, it is now possible to turn to the research questions at hand. Critical evaluation of current musicological research on ensemble performance, relevant non-

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[19] The members of these two ensembles have granted their permission to use their likeness and any rehearsal discussion within this book, ensuring that my work conforms with standard research guidelines.

musicological research and musical experience is necessary due to the different forms of knowledge under consideration. Through the investigation of these research questions, deeper epistemological questions may arise, progressing beyond issues surrounding the identification of gestures or how ensembles interact. As will become apparent, ensemble performance may engage musicians in levels of embodied knowledge previously unexplored through propositional or procedural means. This ostensibly hypothetical proposition is reified through exploration of the research questions posed above. Thus, this book provides an examination of a specific kind of Mode 2 knowledge – performative musical knowledge – through the lens of ensemble performance.