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THE DUO PIANO EXPERIENCE: NONVERBAL COMMUNICATION BETWEEN ENSEMBLE MUSICIANS

Constance Annette Gordy

A Thesis

in

The Special Individualized Programme

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ABSTRACT

The Duo Piano Experience:
Nonverbal Communication Between Ensemble Musicians

Constance Annette Gordy

During the act of performing, visible cues between duo pianists are of necessity kept to a minimum. Since this is a factor not characteristic of most other performing ensembles, it offers an exceedingly fruitful medium for studying the cultivation of communication between players — in particular, the internalizing processes so crucial to the nonverbal experience.

On the face of it, it is curious how little attention has been devoted in the research literature to nonverbal communication between performing musicians. However, as this thesis shows, there are certain historical precedents that have shaped a paradoxical set of culturally-determined attitudes towards performers and the performing experience — attitudes that have profoundly conditioned the nature and direction of both speculation and research. Indeed, the close historical relationship that music and science have shared for some 2,500 years — beginning with the acoustical measurements of Pythagoras — has, for the most part, been confined to areas such as instrument building, compositional theory, perception, and the physical organization of individual performing artists.

This thesis — supported by bibliographical evidence, as well as recent inquiries into the realm of nonverbal communication and my own experimental foray into the area of communication between duo pianists — questions whether quantitatively-based methodologies *by themselves* can grasp the implicit meanings being communicated without losing a sense of the experience as a whole. In the search for an alternative approach, I examined a number of recently-developed methodologies in the areas of sociology, ethnography and communication that address precisely those questions that arise when the indivisibility of the experience must be retained. The modified ethnographic/metacommunicative approach that I finally adopted allowed me to both participate in and observe the cultivation of communication between two pianists in their preparation and execution of virtuoso works from the duo piano repertoire. Taken in a broader context, this study hopes to contribute to our understanding of direct experience in other areas of human performance involving minimal intervention of spoken language.

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This thesis is dedicated to my parents, Wendell and Patricia Gordy: Your sacrifices throughout the years have known no bounds. Your belief in my efforts are unfailing. You have instilled in me a conviction that anything is possible with determination. You have realized my love for playing the piano at an early age, nurtured it, and have delighted in watching it blossom. I am proud to have you as my parents and my love for you can only grow.

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Into the same music, therefore, a hundred different listeners will pour their own specific histories and desires. A thousand different sorrows and a thousand different joys will be called to focus by the same musical material... Words are too brittle and chiselled, life too rigid and conventional to exhaust all the infinity of human emotional response.

Irwin Edman
Arts and the Man

Almost black, almost white.
Almost, but never quite.

"Shades of Grey"
Phil Cohen, 1997

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Chapter One

Introductory Considerations

"Please, God, leave us this one mystery, unsolved: why man creates. The minute that one is solved, I fear art will cease to be."

— Leonard Bernstein[1]

Preamble

Whether art will cease to be, when, and if the mystery of our need to create will be solved are indeed open questions. These questions do, however, touch on some of the most fundamental issues relating to the *communication* of the aesthetic experience. "The composer," as Phil Cohen (1998) has pointed out, "may create the music, but it is the performer who creates the experience." In the act of communicating, the performer then becomes the medium through which music organizes our mental, physical, and intuitive resources in specific and sometimes striking ways. The communicative power of music can be gauged by Cohen's (1996, May) account of the range and depth of responses it is capable of eliciting from performers and listeners alike:

> "Music is capable of synchronizing our breathing, our pulse, our sense of balance, our gestures, our muscle tone and speed of response — not to say its powers to store and revive memories that touch on every conceivable human experience" (p. 4).

It follows that, when two or more performers wish to communicate a unified

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[1]Reimer & Wright, 1992, p. 20

vision of the music, it is essential that they begin by synchronizing their aesthetic intentions with their pulse, their breathing, balance and whatever else may be needed to move their audience. Traditionally, this involves a mix of verbal and nonverbal cues which are internalized through coaching, practice, rehearsal, and performance post-mortems. Once internalized, nonverbal communication takes precedence — ideally leaving only the music to be shared between the performers and their listeners. In ensemble performance, therefore, almost total internalization of every aspect of the synchronized vision between musicians is essential. How duo-pianists in particular utilize non-verbal associations to communicate their intentions as a unified whole is the aim of this thesis.

Before examining the nature of communication between performing musicians, we will first consider certain historically-received paradoxes, many of which have been shared by musicians and nonmusicians alike — paradoxes that have limited the areas of study open to researchers. To begin with, music and those who perform music are not strangers to scrutiny. In one way or other, every culture has been obliged to acknowledge and contemplate the consequences of the universal attractiveness of the musical experience. Its emotive powers as well as the immediacy and directness of music's ability to focus body and mind have endowed the experience with a magical elusiveness that defies explication, fostering, as it were, a sense of awe — even reverence — that, for many, renders the musical experience "off

limits" for scientific investigation (sic Bernstein). One consequence of this commonly held view has been an emergence of an implicit understanding between researchers and musicians that has shaped the focus of studies towards more readily tangible areas: typically, the acoustical properties of sound or the physiological mechanics naively associated with "performance technique." All in all, these paradoxes present interesting challenges for the researcher wishing to study communication between performing musicians. This said, we will now examine the historical antecedents in some detail.

Performers and Performance[2]: A Brief Survey of Received Attitudes

> "For the most part performers have lived in ambiguous social regard, on the one hand admired, even adored, for their looks and talents, on the other hand seen as frivolous, dissolute and corrupting." (Hilton, 1987, p. 2)

Historically, the consequence of this pervasively "ambiguous social regard" has been a perception of performers and their performances that has in one form or another persisted for over 2500 years to the present day.[3] The stage performer appears to have that "special charismatic something" — a gift

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[2]For the purposes of this thesis, performance is defined as the act of formally presenting an organized structure, whether prescribed or spontaneous, to an audience in real time. This definition can, of course, be expanded to include musicians, athletes, actors, orators, figure skaters, dancers, jugglers, and comedians, etc.

[3]The actor, for example, "has appeared throughout the ages" as a "votary, clown, apprentice, buffoon, idol, star, guru..." (Cole & Chinoy, 1970, p. xvi).

that places him or her on a pedestal that serves equally well as a target. The intellectual origins of this ambiguity — ranging from revulsion to envy, awe, and celebration — can be traced in part to Plato.

The Performer As Conjurer

To Plato, the performer is a conjurer, devoted to casting a spell so powerful over *his* [4] audience that it willingly *suspends disbelief* (Coleridge, 1912). Appearance, then, replaces reality, becoming in Plato's words, "an imitation of the real"; and, given that the "real" itself in the Platonic world is viewed as an imitation of the ideal, the stage experience becomes "doubly suspect" (Hilton, 1987, p. 2). The implied falsity of staged emotions thus qualified the theatrical experience (i.e. a formally performed experience) as a dangerous weapon, capable of corrupting youth.

Plato expands his arguments into the political arena by asserting that since dramatic enactment has the power to incite change, it should be banned "from the Republic to prevent a threat to the body politic" (Reciniello, 1991, p. 97).[5] Plato notwithstanding, the stage experience flourished during the Athenian democracy — partly as a forum for making sense of the good works,

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[4]It was not until the middle of the sixteenth century that European women were allowed to perform on stage (Kohansky, 1984).

[5]Theatre, music, poetry recitation, and dance were closely identified in classical Greece. Therefore, Plato's discussion of the dramatic experience should be understood in this context.

intrigue and related vagaries that the gods visited upon themselves and mankind — albeit under official scrutiny. Plato's argument did, however, encourage a certain ambivalence towards performers and stage experience — neither of which had a "place in the ideal state of the future" (Reciniello, 1991, p. 97).

Some indication of this ambivalence can be gained from the experience of performers and actors in Ancient Rome, who were subjected "to the prejudices attached to their profession" (Kohansky, 1984, p. 19). Theatre, for example, while popular, was considered disreputable. Actors were "denied all civil rights, could not engage in military service, could be beaten at will by the police, were forbidden to leave their profession for another, were forced to have their children become actors, and were banned from attending plays as audience members" (Reciniello, 1991, p. 97).[6]

The early church placed its own distinctive stamp on the message by severely limiting acceptable performing behaviour: actors were simply excommunicated. To carry the point one step further, in his influential tome, *De Spectaculis* (second century), the proselytizer Tertullian argued that Christians should be forbidden to attend the theatre on pain of excommunication (Kohansky, 1984, p. 8). Typically, in the polemic world of Tertullian, "the difference between art and life has no status... To portray a

[6]There is even an account of an actual execution taking place on stage: "the reluctant actor was Lauredus, a convicted murderer; the audience saw him die on the cross as part of a scheduled show" (Kohansky, 1984, p. 21).

murder is as wicked as to commit one" (Barish, 1981, pp. 45-46). A performer, when he lies about who he is on stage, by definition is committing a mortal sin. Caught in a double bind, an actor portraying a morally upright character would be "adding insult to the injury by daring to be someone he could never be" (Reciniello, 1991, p. 98).[7]

The Early Church initiated an Ars Sacra devoted to overseeing the establishment of a body of chant that would be spiritually consistent with both the liturgy and dogma. This involved, in part, eliminating "vulgarisms" such as suggestive rhythms, intervals, and ornaments from existing folk melodies. Most revealing were the directives on performance practice designed to ensure the purity of vocal quality, articulation, and inflection, as restrictions on the use of pagan instruments (initially even the organ was banned because of its association with the Roman circus). What became known as Gregorian Chant (in tribute to Pope Gregory) grew out of the first phase of the Ars Sacra — that is, from the fourth through the sixth centuries of our era. Directives against contaminating performance practices, however, continued in one form or another until the present century.

Typically, throughout the Enlightenment and even as late as the eighteenth century, performers were not allowed to be buried within city limits. Kohansky (1984) explains:

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[7]Similarly, a musician playing with false emotions is contriving human experience.

> "In France, as in other Christian countries, actors were not permitted to mingle with good Christians even after death; it took a revolution to give them the right to be buried in consecrated ground." (p. 7)

The Performer As Hero in the Nineteenth Century: Lionized and Demonized

The French Revolution may have offered burial privileges to performers, but as we shall presently see, it also added a new dimension to the ambiguity that has historically plagued clear thinking about the nature of their art and its communication. The rallying cry of the revolution was freedom — freedom not only for the oppressed and dispossessed but of the opportunity for *every man* to exercise his talents to the fullest. Napoleon, the archetypal super-achiever became the model for the man of the future. The unshackling of the Napoleonic cult evolved rapidly into the cult of the hero — a cult that celebrated extraordinary achievement in virtually every human activity. The daring entrepreneur shared equal honours with the explorer, the revolutionary, the empire builder and the artist. Solo virtuosi all, these charismatic, defiant, iconoclastic — and, more often than not — morally suspect titans captured the imagination of Victorian Europe. In theatre, the matinee idol flourished, feeding the fantasies of adoring housewives and aging spinsters.[8] Evening theatre was indeed not nearly as much fun, what

[8]This was clearly a precursor to the daytime soap opera enjoyed by a vast female audience today.

with the presence of husbands, suitors, and unenlightened others who might take issue with well-bred ladies prepared to give themselves up — in soul, if not in body — to an itinerant conjurer (Kohansky, 1984).

In music, legions of violinists and pianists, inspired by the examples of Niccoló Paganini and Franz Liszt, vied for their place in the sun. Paganini, perhaps the greatest violinist of all time, was reputed to be in league with the Devil. Cohen (1998) describes how, by capitalizing on his gaunt appearance and satanic demeanour, Paganini could invest his execution of impossible feats with "a ferocity guaranteed to mesmerize even the most blasé listener". Liszt, on the other hand, brought a unique twist to the perception of artist in the grip of unfathomable forces. Celebrated as a virtuoso pianist, composer and bon vivant, his early years before the public were, by all accounts, satanically inspired. On approaching his dotage, he re-canted — sort of — by taking orders as a lay Abbe in the Catholic Church. Like Paganini, Liszt was an expert at "working" an audience. He was so good at it that he succeeded almost single-handedly in defining — more correctly, confirming — the *idea* on the Western consciousness of the stage virtuoso as a heroic, demonically-driven figure. According to Frank Wilson (1998), Liszt "realized that the concert stage was ripe for conversion into a platform for the display of human prowess..." (p. 214). A personal acquaintance of the pianist, Wilhelm von Lenz (1973) pens a description of the magnificent Liszt:

> "Liszt does not merely *play piano*; he tells, at the piano, the story of his own destiny... Liszt is a *latent history* of the keyboard,

> himself its crowning glory. What does *piano-playing* matter to him? Climb the tower and see how the battle goes (pp. 1-2)... Where Liszt appears, all other pianists disappear; there remains only the *piano*, and that trembles in its whole body! Hence, in Liszt's case, any comparison of any given performance at the piano is *a priori* out of the question; because he is the exception, because he is the prophet who has ceased to be a plain citizen, in order to become a soldier of the spirit in *his own* church, *his own* ideas." (pp. 3-4)

Central to this vision was Liszt's popularization of the solo piano concert. Performed entirely by memory, this lengthy tour de force featured the hero-pianist triumphing over impossible odds emerging from the music, the instrument, from within himself, and, if time permitted, from the satiated audience.[9] And, to underline the message, Liszt conveniently arranged the piano so that his striking profile could be savoured equally by all his admirers — a tradition that has persisted to the present day. He could then confidently proclaim, "'Le concert, c'est moi!'—*I* am the concert!" (Wilson, 1998, p. 214).

The Performer Today: A Star is Born

Today, while we no longer excommunicate, execute, flog, persecute, or defile errant performers, the historical ambiguity still persists: on the one hand, we enjoy performers in the act of performing; on the other hand, the aspect of forbidden thrill pervades both our perception of the character of the

[9]A three hour extravaganza was not uncommon by mid-century.

individuals as well as the experience itself.[10] Our celebrated heros and "stars" then remain on their historical pedestal, simultaneously worshipped and targeted. Most significantly, the performer's presumed personality and lifestyle becomes easy fodder for tabloid exploitation, updating Plato's observation that staged imitation is nothing more than a perversion of reality.[11] The downside to stardom is that, once it gets pigeonholed into a marketable commodity, creative change becomes virtually impossible. As Nachmanovitch (1990) explains, "Sometimes an artist (or teacher, scientist or spiritual guru) starts with something extraordinary, becomes a star, and then their gift is either frozen or perverted" (p. 121). Ditto — Hollywood.

Interlude

In brief, ambiguous attitudes towards performers have traditionally muddied the potential for studying communication between performers.

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[10]Wyndham Lewis (1964) notes that in our own century, "The artist is vulgarly regarded as the luxurious kind of fellow, over-fond of the fleshpots of Egypt, and addicted, when he gets the chance, to the company of the 'aristocrat.' In the proletarian textbook he is *suspect* (Italics mine) from the start on these grounds" (p. 282).

[11]The headlines of newspapers and magazines suggest that it is commonplace and almost expected of performers who have achieved stardom — or had it thrust upon them — to be addicted to drugs, beat their spouses, and generally exhibit themselves in an obscene manner. It is almost as if we wish our celebrities to challenge taboos so the rest of us normal people can live out forbidden fantasies without suffering the consequences.

Gutin (1996) has suggested that this ambiguity may be a specifically human trait since "extraordinary accomplishments... make the rest of us nervous" (p. 79). An attitude as pervasive and consistent as this, shared by many artists as well as the lay public, does not bode well for serious research into the dynamics of communication between musicians — a dynamic most evident in the received symbiosis between musicians and scientists that can be traced at least to the early years of the scientific revolution. Predictably, scientists fascinated with the challenge of bringing order to an otherwise logically daunting experience have focused on the more readily quantifiable aspects of music. As we noted previously, sidestepping the apparent intangibles has deprived researchers of a developed body of knowledge supported by methodological criteria that address issues intrinsic to the experience. Dunsby (1996) relates that, while a body of pedagogical literature on the how of learning music exists, there is virtually nothing on "how we [actually] do it, and observe it being done" (p. 27). He continues:

> "What I am trying to convey is not, then, a dismal scene, but a fragmentary one, in which there is a relatively random scattering of performance studies, sometimes lurking in written endeavors aimed at quite different ends, in which performance practice... plays its essential part, but it is only a part... We do not have... a received body of knowledge and an orderliness in whatever is conducted in its name, however subversively." (pp. 27-28)

Hilton, picking up precisely on this issue notes that "the analysis of performance may be justified as a study of one of the most elaborate behavioral systems man has invented" (1987, p. 5). One must therefore

constantly take into account musical performance as an indivisible whole — involving as it does the integration of complex physical, cognitive, aesthetic, and related dimensions. What follows will address the general reluctance by both musicians and researchers to come to terms with the experience itself.

Science and the Western Musical Tradition

"We are all embedded in a musical world that, far from being uniform, shifts and snakes under the competing pressures of the past and the present."
— Jonathan Dunsby (1996, p. 6)

At least since Pythagoras,[12] the study of music has evoked considerable interest among natural philosophers and poets: especially speculation regarding the nature of music, its relevance to our understanding of the human condition, and a recognition of its universal power (Weiss and Taruskin, 1984). It is therefore not surprising that, from the beginning of the Scientific Revolution in the sixteenth and seventeenth centuries, the new breed of scientists would somehow pick up on this most fascinating and elusive of topics. It is significant that many of the seminal figures during the formative years of modern science (including Isaac Newton, Galileo Galilei,

[12]Pythagoras, in the sixth century B.C., developed the concept of the 'music of the spheres', which claimed that each of the heavenly bodies emits a musical note as it revolves around the earth. According to Pythagoras, we cannot hear these notes because they are continually sounding in our ears: therefore we are unconscious of them. Even though this notion has generally been abandoned, many of Pythagoras' seminal investigations into the mathematics of music have survived into modern acoustical theory (Harman, Mellers, & Milner, 1988).

Marin Mersenne, René Descartes, Johannes Kepler[13], Athanasius Kircher, Francis Bacon, and Christian Huyghens) were either practicing amateur musicians or were interested in the study of music as a phenomenon (Palisca, 1961; Berman, 1990).[14] Why music? Berman (1990) explains that "music embodies a crucial tension, being an affective experience that is nevertheless amenable to mathematical treatment." Music was recognized for its power to "induce altered states of consciousness" (p. 237) and therefore had to be rationalized, controlled, and objectified — moving far away from the previous "sense-oriented Renaissance attitude towards music" (Weiss and Taruskin, 1984, p. 189).

The Obsession With Order: Music and Science in the Seventeenth and Eighteenth Centuries

It might be instructive here to review the premises and the practice of music as a "science" seen in the broader context of seventeenth and eighteenth century thought: specifically, an almost universal concern with order. This obsession reflected the rapid changes and perceived chaos in all

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[13]Kepler's work included rephrasing the ancient idea of the harmony of the spheres (Berman, 1990).

[14]It is interesting that music, until the seventeenth century, was a branch of science — one of the four mathematical disciplines of the quadrivium (a term possibly coined by Boethius) along with arithmetic, geometry and astronomy. However, only theoretical music — namely, harmonics, defined as the "science of musical sounds" — held this "exalted" place (Weiss & Taruskin, 1984, p. 33; Grout & Palisca, 1988).

aspects of daily life experienced by Europeans during this period parallel to the scientific revolution: there was a growing mercantile class, the expansion of trade to the New World and the Orient, and above all, an epidemic of religiously-inspired political strife. Toulmin (1961) captured the energy of the seventeenth century philosophy and why it saw the scientific revolution as a panacea for its ills (italics my own):

> "The chief spokesmen of the scientific revolution thought of themselves as inaugurating a revolution in intellectual *method*.... If we look on, past 1700, into the eighteenth and nineteenth centuries, we shall find that in the longer run the most influential thing proved to be, not the content of the seventeenth century science, but the *program* of seventeenth century philosophy." (p. 25)

The ubiquitousness of the program can be gauged from the willingness of musicians to embrace the philosophy wholeheartedly. René Descartes, in his *Compendium musicae* (1618/1961), was the first to suggest that the quality of sound and how it emanates from the body is in the domain of the physicist.[15] This new objective view of music led Baroque musicians to conclude that "if emotions could be somehow classified and ordered, their imitation in art could be brought under fully rational control" (Weiss and

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[15]This new objective vision can be measured by Milton's tongue-in-cheek comment regarding the freedom of the press (*Areopagitica*, 1644): "There must be licensing dancers, that no gesture, motion, or deportment be taught our youth but what by their allowance shall be thought honest.... It will ask more than the work of twenty licensers to examine all the lutes, the violins, and the guitars in every house; they must not be suffered to prattle as they do, but must be licensed what they may say" (Weiss and Taruskin, 1984, p. 189).

Taruskin, 1984, p. 212).

Virtually every aspect of the new music (tonality, notation, tuning systems, intervallic relationships, etc.) was profoundly influenced by the new philosophy. A musical score became, in effect, a prescriptive legal document.[16] Most prescriptive was the emergence of the *Doctrine of Affects*, a compendium of formulas that standardized states of human emotion with specific musical dimensions (rhythm, intervals, choice of instruments and their relationships, tempi, and modes).[17] Bukofzer (1947) explains the Doctrine as such:

> "The modern psychology of dynamic emotions did not yet exist in the baroque era. Feelings were classified and stereotyped in a set of so-called affections, each representing a mental state which was in itself static... According to the lucid rationalism of the time, the composer had at his disposal a set of musical figures which were pigeonholed like the affections themselves and were designed to represent these affections in music." (p. 5)

The Doctrine became a compositional staple, particularly in the attempt of seventeenth century opera to recapture the spirit of Greek drama (an

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[16]modelled loosely after Hobbes' concept of a *contract* (Leviathan, published in 1651).

[17]In his *Passions of the Soul* (1645-46), Descartes gives a certain scientific credibility to the *Doctrine of Affects* in his attempt to classify the passions in physiological terms, literally making them "objects" (Weiss and Taruskin, p. 212).

extension of the classical *Doctrine of Ethos*).[18] Indeed, the fallout from the Doctrine in its efforts to harness human emotion persists to the present day in its communication of very fundamental musical messages. For example, a descending minor second depicts sighs, a leap of a sixth joy, and slow-dotted rhythms convey a majestic, noble pace — traditionally-associated with court pomp and funerals (see Figure 1.1).[19]

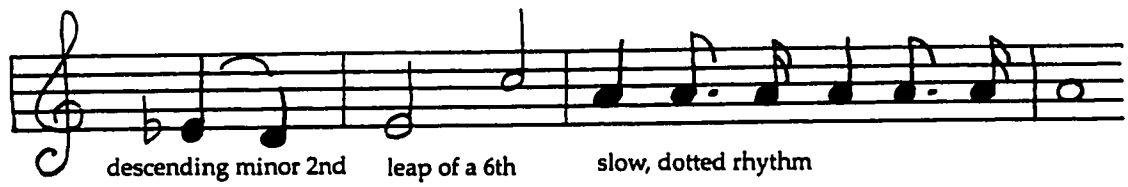

Figure 1.1

These emotions traditionally associated with specific musical entities have

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[18]In ancient Greece, a strong belief in the magical and healing powers of music culminated into the Doctrine of Ethos, which brings order to music, and poses the question, "What influence has music on character?" According to the writers of the Doctrine, one's will can be influenced by music in three ways: "It can spur to action; it can lead to the strengthening of the whole being, just as it can undermine mental balance; and finally, it is capable of suspending entirely the normal will power, so as to render the doer unconscious of his acts" (Lang, 1941, p. 14).

[19]See Cooke, 1959, for a more complete list of musical examples that comprises the language of composers.

been so much a part of our musical currency[20] that, according to Shaffer (1989), "it is a chicken and egg question whether the patterning of mood is a consequence of the musical structure or whether the structure was chosen to convey this pattern" (p. 387). Whatever the reason, it is evident that our innate human response to these formulas is strong.

The Mathematizing of Music: Marin Mersenne

Admired by contemporaries as "one of the masterpieces of the new mechanistic science" (Berman, 1990, p. 240), Marin Mersenne's treatise, his *Harmonie universelle* (1636-37) served as a guiding light for the compositional enthusiasts of the new enlightened view of music. Mersenne, a priest as well as an advocate of the contemporary interpretation of rational order, conceived his highly influential treatise entirely in acoustical and mathematical terms.[21] The consequence of Mersenne's work cannot be overestimated, for in one stroke, he effectively moved music theory away from its quasi-mystical roots towards considerations that were essentially technological, analytical, and mathematical considerations that have

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[20]An obvious example would be music for a suspense scene in a film. A few moments prior to a particularly terrifying event, the composer will introduce a traditionally ominous affect — usually low sustained tones or unstable harmonies moving chromatically to a dissonant climax. The faint at heart are then given ample time to pop a Valium or two.

[21]It is perhaps instructive that Mersenne never played an instrument nor composed a line of music (Berman, 1990).

dominated Western musical theory to the present day. Berman (1990) describes the implications of Mersenne's work as follows:

> "...for what he [Mersenne] rejected (he wasn't a priest for nothing) was the actual *experience* of ascent, the real ecstasy induced by music. This was explosive, heretical, unsafe. The safe path was to create not only a mathematical and acoustical bridge to the heavens, but also such a bridge between Aristotelian theology and a dynamic new science, a new system of coding and control." (p. 241)

The longevity of Mersenne's revolution can be gauged by Weiss' and Taruskin's poignant comments on music in the twentieth century:

> "It is in the area of electronics, magnetic tape, and the computer that music has received today its greatest impress from the technology of science and it is here where composers have entered into pure quantification and measurement of wave lengths, wave combinations, partials and time segments and sequences. That music should thus be subjected to forms of automation is inevitable; and that it should remove itself more and more from singing and dancing and embrace a world of sound devoid of human content is surely the end result of believing that music like everything else today is reducible to formulas, to equations, to statistical probabilities, to predictable and controllable functions and behavior — in short to technology. Any sense of the human limits of music has been lost; and in my view it is not likely it can be regained. At least not until we have passed through the terrors which science and technology have prepared for us and have been driven back by the sheer need to survive to a re-evaluation of priorities in life and a renewed sense of the tragedy of man." (1984, pp. 537-38)

Musical Composition Classified and Measured: Jean-Philippe Rameau

Mersenne's acoustical experiments paved the way for Jean-Philippe Rameau's instrumental theoretical work, his *Traité de l'harmonie* (1722). In the *Traité*, Rameau attempts "with some success, to classify music both

scientifically and philosophically" (Harman et al., 1988, p. 488-89). His *Traité* was initially dismissed by professional musicians — not because of its numerous errors ("as no musician was sufficiently well versed in the science of music to point them out", p. 489), but because of Rameau's pedantic style of writing as well as the fact that, at the time of its publication, he was virtually unknown as a composer.

At the core of Rameau's "science" was the vertical arrangement of sounds — that is, harmony — a radical departure from the complex multi-layered and overlapping linearity characteristic of the contrapuntal tradition from the Middle Ages to the High Baroque period. Rameau devised a nomenclature based on intervallic relationships between sounds: that is, chords and their inversions, which can be described as mathematically and acoustically precise entities (Harman et al., 1988; Weiss and Taruskin, 1984). For example, in the key of C Major (see Figure 1.2) the root position triad has the intervals of 5-3-1, the first inversion is 6-3-1, and the second inversion is 6-4-1.

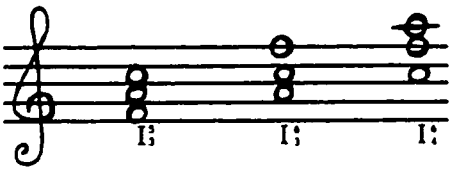

Figure 1.2

Rameau's nomenclature provided a simple method of identifying vertical organization that has influenced basic compositional theory and pedagogy to the present day. Rameau spells it out as follows (italics mine):

> "Music is a *science* which should have *definite rules;* these rules should be drawn from an *evident principle;* and this principle cannot really be known to us without the *aid of mathematics...*" (Weiss and Taruskin, p. 220)

Essentially, then, Rameau succeeded in updating the place of music as a science in the medieval quadrivium, and not surprisingly without due speculation into the experience itself. Rameau's *Traité* summarizes early attempts — particularly those of Mersenne and Descartes — to clarify and bring order and scientific credibility to a hitherto elusive phenomenon.

The Nineteenth and Early Twentieth Centuries: Obsession with Technique

Prevalent in the nineteenth century musical world is a concern with the technical aspects of musical performance and hence, the continuation of reductionism. As the demands of the virtuoso became more challenging, method books emerged in order to deal with every possible technical problem of the instruments, particularly those of the piano. Former keyboard techniques (such as isolated finger actions[22]) were no longer effective due to

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[22]Thierry Prieur (1994), in his critical analysis of piano methodologies and their "reductive principles," gives a typical example: "...the belief that one should articulate the fingers with the aim of equalizing their individual strength while maintaining the hands and arms as immobile as possible" (p. 28).

the introduction of a heavier-actioned piano and an augmented repertoire that incorporated "a greatly expanded palette of dynamic possibilities" (Pamela Korman, 1996, p. 57). Ludwig Deppe, the author of *Armleiden der Klavierspieler* (Arm Ailments of the Pianist, 1885) was one of the first to suggest that "tone control involves a coordinated movement of all the muscles and joints of the arm," and that "the acting muscles are directed by the ear's perception of 'beautiful tone'...". Deppe's work brought forth a "flurry of theoretical 'scientific' tomes, method-texts, and inspirational 'how to' books" that continue into the twentieth century (Korman, p. 56). However, these methods rarely, if ever, touched on the immediacy of the experience of music.[23]

Some Contemporary Perspectives: Personality, Measurement, and Reflections By Performers On the Ensemble Experience

The recent studies listed below have generated much interest into the

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[23]For more detailed discussions of collaboration between musicians and scientists on the practical aspects (musical and theoretical) of performance, see the following (Korman, 1996, pp. 56-57): Tobias Matthay's The Act of Touch in all its Diversity: An Analysis and Synthesis of Pianoforte Tone-Production (1926), Rudolf Maria Breithaupt's Die Naturliche Klaviertechnik (1905), Otto Ortmann's The Physiological Mechanics of Piano Technique (1925), James Ching's Foundations of Piano Technique (1934), Thomas Fielden's The Science of Piano Playing (1943), and Alfred Cortot's influential Rationale Principles of Pianoforte Technique. Despite the exhaustively reductive nature of the Rational Principles, in his teaching, Cortot (one of the greatest pianists of the twentieth century) encouraged his students to hear the music poetically and insisted that he was "diametrically opposed to a mechanistic, reductive approach to piano playing" (p. 57).

depths of artistic performance and music in general. It should be noted, however, that many of these studies do not cover the particulars of the communicative experience between performers; instead, the gift itself is often underplayed by the continuing interest in the *personalities* of the gifted. When musical performance is addressed, it is frequently explained in statistical terms, which musicians and laymen would more than likely have difficulty understanding or lose interest. As Dunsby (1996) asserts,

> "...People are not especially richly served in the current literature in this respect, and surely there is room for more—more that is different, and in particular about the activities of those musicians whom they most often observe at work, the performers... What I understand less is why those who write do not nevertheless seek on occasion to be read by performers. Performers are not an underclass... Those who write can do a little sharpening." (p. 4-5)

The situation, however, is far from hopeless: several artists and scientists alike are attempting to account for our historical ambiguities and are articulating well the intricacies of the musical experience. Below are three areas of study which partly serve as a combined catalyst — instigative and otherwise — into the discourse of this thesis. Those studies which specifically address communication between ensemble performers will be described in further detail in the following chapter.

— **A Specific Performer Personality?** This particular area of study enjoys focus because of our unending fascination with and expectancy of performers to deviate from the "norm". A trend in the personality studies of

performers seems to be that of linking creativity with madness. Addressing the realm of bi-polarity in established artists, psychiatrist Kay Redfield Jamison (Goodwin, 1990) — unusual because of her self-disclosed bi-polarity — finds a strong association between the two. In his thirty year comparative study of creativity in artists and scientists[24], psychiatrist Albert Rothenberg (1990) concludes that while engaged in the act of creativity, an individual is a highly integrated and healthy being. Creative individuals — whether scientists, musicians, or artists — share processes of conceptualizing that Rothenberg identifies as "translogical" — that is, they "transcend the usual modes of ordinary logical thought" (p. 11). It is interesting that Rothenberg's study suggests that highly creative artists and scientists have more in common in their cognitive organization than with members of their own discipline. Sociologist Arnold Ludwig takes issue with the link of creativity and madness, and adopts a more prosaic conclusion: the artist achieves creative greatness through an "almost monomanical" (Gutin, 1996, p. 81) dedication to the task at hand, rather than the stereotype of creating only when the mood strikes. According to Ludwig, "the *real* price of greatness... isn't madness but the seemingly inevitable trail of domestic destruction" (p. 81). For further exploration into creativity associated with madness, see Gutin (1996).

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[24]which include Nobel and Pulitzer prize winners among other prestigious honours

Kemp (1996) explores the mythology seriously held by musical circles[25] — in particular, how musicians assume personality differences according to the instrument they play. Included are the stereotypes of sensitivity, anxiety, introversion, extroversion, androgyny, etc. For example, because pianists spend numerous hours in practice alone rather than as an ensemble member in general, they are assumed to be introverts. Also, Kemp explains that "we might expect pianists to be above average in intelligence, taking a conscientious attitude towards their school work, and tending to spend long periods quite happily on their own" (p. 167). Jacqueline Hammond and Robert Edelmann (1991), in their study which compares the personalities of professional actors and amateurs with non-actors, acknowledge the ambiguity that actors are faced with: being "idolatrously revered" while at the same time being "treated with suspicion" (p. 123). Hammond and Edelmann argue that stereotypes have yet to be altered by psychological research: those that have studied personality types of actors continue to label them as tending "to lack a firm sense of self", are "exhibitionistic, narcissistic, having much pent-up aggression", have "largely hysteric and schizoid personalities", are "impulsive", are "vulnerable to stress" and have "negative body images' (p. 124). By analyzing a series of questionnaires given to professional actors, amateurs, and non-actors, Hammond and Edelmann found that, indeed there are clear differences between actors and non-actors; however, the data do not

[25]particularly held by orchestral musicians

support the negative stereotypes of professional actors. Rather, because of the nature of their profession (public performance), "professional actors are less likely to be socially anxious and shy, and will be more sociable than non-actors" (p. 130). It was also found that professional actors "display greater sensitivity to the expressive behaviour of others than do non-actors" — attributed to the continuous change of roles and to the "exploration of the psyche and behaviour" — all inherent to the acting process (p. 130). Analyst and former classical pianist Ryce-Menuhin (1992) is convinced that the elements of the performing experience of the classical musicians — which integrate thinking, feeling, intuition and sensation (p. 49) — naturally leads to being a good psychoanalyst. Ryce-Menuhin claims that all musical soloists are surrounded by a "powerful narcissistic complex, containing light and dark elements" (p. 57), and, as a result, need to first work through the "narcissistic damage" from their professional musical life before becoming analysts (p. 59).

— **Some Research Perspectives On Ensemble Performance.** In this particular area of research, there seems to be a tendency to rely on statistical analysis to explain the musical performing experience. In particular, Rudolf Rasch (1988), in his study of synchronization of onset times[26] in musical ensembles, reflects a perspective seemingly shared by many researchers towards musical studies: specifically, that "Measures of musical behaviour,

[26]defined by Rasch as "the decisive time moment of the tone" (p. 81).

including musical performance, are essentially statistical measures" (p. 89). Undoubtedly, Rasch did indeed find a way of explaining asynchronization, synchronization, onset time differences, isochronization, and a-isochronization in complex statistical formulas (pp. 72-75). The musician, however, may question what these formulas tell us of the experience. To be fair, Rasch did later state that:

> "The research we have done was not initiated by the wish to uncover the psychological processes that are behind synchronization behaviour. Eventually, however, the descriptive part should be supplemented by a psychological, interpretative part." (p. 89)

Shaffer (1984) studied the expressive timing of duo pianists playing at one piano (which, as we will see in Chapter Three, is very different from playing at two pianos) to test his theory that "players can stay in time, using their individual timekeepers to pace a common beat with sufficient precision that they need only occasional correction" (p. 585). Shaffer then graphed the synchrony of the pianists (professionals who did not usually play together and practiced only briefly) and found "that much of the asynchrony was systematic, not random (p. 591). He also found that the pianists could instruct their personal timekeepers to adjust to each other's modulations in the tempo. Because feedback in coordination between players was not possible due to the nature of his study, Shaffer urges others to integrate this aspect into

their studies.[27] Others who have written extensively on expressive timing in musical performance include Gabrielsson, 1988; Halsband, Binkofski & Camp, 1994; and Repp, 1995.

— **Performers Reflect on their Stage Experience.** Nachmanovitch (1990) wrote of improvisation not only in one's music but in everyday life. His depictions of his improvisatory performing experience are beautifully written and show that it is possible to capture the essence of direct experience in words. Ingrid Monson's (1996) focus has also been on the improvisatory experience between jazz musicians (to be discussed in greater detail in Chapter Three). In contrast to music, the theatrical literature has enjoyed a long tradition of probing into the experience of acting. Aside from the well-known writings of Stanislavski and Brecht, of particular importance is Cole and Chinoy's Actors on Acting (1970) which shares the writings of actors who go beyond mere reflections of their art into the "gist" of the experience itself. In the dance world, an equivalent is Newman's Striking A Balance (1992), in which ballet dancers discuss their stage and rehearsal experiences and what it is like to work with their various partners. See also Bernstein, 1976; Hilton, 1987; Reimer and Wright, 1992; Schnabel, 1988; Storr, 1992; Walter, 1976.

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[27]My study of duo pianists shown in Chapter Five incorporates feedback and its role in matching aesthetic ideas and timing in the music.

Summary

Any study of communication between musicians must first contend with certain historically-rooted perceptions. These perceptions complicate the selection of a tangible focus for study, let alone the establishment of appropriate methodological criteria. The problem begins with the experience itself. Music, like any other performing art, depends on evoking a sense of mystery in its listeners. The source of the mystery, its curious powers and its purpose in the larger scheme of artistic communication has been an occasion for wonder — undoubtedly from the first pleasing noise uttered by a distant hominoid with an aesthetic bent. Its significance has also been variously interpreted over the years by those eager to decipher its apparently magical powers. What is undeniable is that the experience of mystery is contingent on the listener (and perhaps the performer): suspending disbelief. The performer, then, is a magician gifted in the art of "showing us our lives."

Magicians, however, do not reveal their secrets. A performing musician may not be consciously aware of how the secret works, but knows instinctively that it is his or her most precious resource. To delve into its magical properties would be to risk losing one's ability to inspire cleansing awe. By the same token, nothing is more eagerly anticipated by the listening public than the opportunity to willingly suspend disbelief. Audience and players, therefore, find themselves in a "gentleman's agreement" about the advantages of maintaining the status quo. This leaves those who wish to

study the phenomenon with something of a communication dilemma. Deryck Cooke (1959) picks up on the traditional argument:

> "...the fundamental musical experience—the transformation of music into emotion—is the result of an entirely *unconscious* process, since, all through the centuries, the professional, with all his technical knowledge, has been no more able to explain his emotional experience of music than the layman (p. 206). ...what is responsible for our generally ambiguous and fruitless approach to music... can be summed up as 'form is form, and expression is expression, and never the twain shall meet'." (p. 213).

From the perspective of this thesis, the reluctance of the "twain to meet" depends, in part, on whether one accepts the message that "too much knowledge is a dangerous thing" as the inevitable consequence of explorations into the hitherto unknowable. We have shown that, partly because of the Platonic heritage, this perception is shared by mathematicians, acousticians, natural philosophers, and performing artists, and has to a very great extent, determined the nature and direction of studies in to the musical experience. In particular, it has resulted in the phenomenon remaining on ice for generations as an intellectual curiosity.

Chapter Two

Research in Nonverbal Communication: Implications in the Communication Between Performing Musicians

"Though a person may decide to stop talking, he cannot stop behaving. And it is behaviour itself, the *very presence of a person,* that provides an uninterrupted stream of information and a constant source of emotive overtone." (italics mine)

C. David Mortensen[28]

Defining Nonverbal Communication

What do we mean by nonverbal communication? While the nature of the phenomenon may be self-evident, it is interesting that researchers have yet to reach a consensus regarding a definition. Sebeok criticized the concept of nonverbal communication as "one of the most ill-defined in all of semiotics" (Poyatos, 1983). Poyatos illustrates the difficulty of the "all-encompassing label 'nonverbal'":

> "No one could disagree with him [Sebeok] that 'the formula, [communication minus language = nonverbal communication] is clumsily negative, simplistic, and obscurantist'." (p. 37)

The extent of Poyatos' concern can be gauged by Eisenberg's and Smith's (1971) vague definition of nonverbal communication as "all communication except that which is coded in words" (similar to Sebeok's

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[28]1972, p. 210

formula above). Recognizing the absurdity of so broad a definition, Eisenberg and Smith state the following: "Like the term 'nonhuman,' which covers an infinity of life forms from protozoa to gorillas, 'nonverbal' denotes that which is *not* included in the concept 'verbal', but it tells little about what *is* included" (p. 20). According to Eisenberg and Smith, the reason we are left with general classifications is that the majority of researchers in nonverbal communication have mostly analyzed a specific area which interests them. The main types of nonverbal behaviours that have been examined by researchers — paralanguage, kinesics, and proxemics — are described in detail below.

Paralanguage

Simply put, paralanguage describes one's voice characteristics. "It refers to *how* you say something, more than to what you say" (Goss, 1989, p. 72). Examples include pausing to emphasize a point, changing the rhythm of the words, speeding up or slowing down, and raising or lowering one's pitch. Poyatos (1983) gave paralanguage the hefty definition of "a perfectly workable term referring to the extremely complex series of highly significative sounds, voice modifications and silences produced in the vocal/narial-auditory channel beyond the recognized supra-segmental features of stress, pitch, and juncture in our western languages" (p. 66).

Most scholars, according to Poyatos, separate paralanguage from

kinesics — the study of body movement — as two different although interrelated areas of research. In music, the interrelationship of kinesics and paralanguage is evident. For example, a pianist wishes to obtain a certain effect —suspense, perhaps. So she gradually accelerates the tempo for a few measures while getting louder and louder until she reaches a bombastic chord, lets it hang there with her pedal, waits, and then starts slowly and softly again. None of these characteristics of paralanguage (accelerating, pausing to emphasize a musical point, slowing the rhythm) can be obtained without kinesics (body movements). In effect, paralanguage and kinesics are inseparable, in that one *causes* the other one to happen. The pianist's aesthetic idea of her intended paralanguage organized her kinetic behaviour. Musicians speak often of a particular musical affect causing the hands and arms to move a certain way.

Eisenberg and Smith (1971) define paralanguage as consisting of "two nonverbal components of the speech act: *voice set* and *nonverbal vocalizations*" (p. 23).

Voice Set

Voice set is important both in nonverbal and verbal vocalizations. It can be measured by such qualities as "intensity (volume), pitch, resonance, rate, and rhythm" (p. 23). It is interesting, as Eisenberg and Smith observe, that differences in voice set often leads to social categorization. We have a clear

idea in our society of what constitutes a masculine versus feminine voice, a healthy person as opposed to someone who is ill, or a leader versus a subordinate. Eisenberg and Smith (1971) further explain:

> "Personality characteristics are often ascribed on the basis of vocal qualifiers. A brash bore is a loud mouth, a timid soul speaks softly; an excitable person at times of stress utters words at a greater rate and at a higher pitch than normally." (p. 24)

While there are certain problems in transferring from Voice Set to apparent emotive tones created by a performing musician, there are various characteristics which can be considered universal. In listening to a piano performance, one can distinguish between aggressive, warm, exciting, dominant, submissive, brash, or timid degrees of intensity. Intensity, of course, can be measured objectively, but to the performing musician, it is less a matter of degree and more a matter of a particular *quality* that one assumes to contain more than loudness or other factors. On the one hand, it is true that one can identify how sounds are entered, are followed through, and the exact point where they cease.[29] However, for musicians, there is more to the story: there are qualities (emotive tones) which mix with the measurable characteristics that communicate very distinct affects — presumably what the artists are actually feeling at the time of communication with each other and the audience. Manfred Clynes (1977) explains this phenomenon with the example of singers: "Only rarely are individuals not capable of modulating

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[29]The point of Rasch's study (1988), for example, was to precisely measure time onsets of ensemble musicians.

their voice according to their sentic[30] condition" (p. 77). One can postulate, though, that there must be days when the musician, filled with negative feelings for whatever reasons, purposely does not convey those feelings in the performance. But it is also commonly assumed that the creative musician transforms the negative energy into a delightful experience.

Nonverbal Vocalizations

There are three types of nonverbal vocalizations, defined by Eisenberg and Smith as: (1) Vocal Characterizers — which include laughing or sobbing while speaking, moaning, belching, and audible yawning; (2) Vocal Qualifiers — which consists of temporary changes of pitch or volume; and (3) Vocal Segregates — the silences or sounds (such as "uh's," "ah's," or "mmmm's") that occur between the articulations of words (p. 24). In particular, silence plays an important role in musical performance. Silence helps to "set the scene" for what is coming next (or perhaps may be an ending) and its character may be ominous, pensive, a breath, relief, or an anticipation.

Kinesics

Wendy Leeds-Hurwtiz (1989) defines kinesics — a term coined by Ray

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[30]A term coined by Clynes, *sentics* is "the study of genetically programmed dynamic forms of emotional expression" (1977, p. xx). The science of sentics deals with "the biological elements of emotional communication" and the origin of emotions (p. xxii).

Birdwhistell — as "everything we do with our bodies, from posture to facial expressions, to where we look with our eyes" (p. 105). Knapp (1980) expands upon kinetic behaviour as including "gestures, movements of the body, limbs, hands, head, feet and legs, facial expressions (smiles), eye behaviour (blinking, direction and length of gaze, and pupil dilation), and posture" (p. 4). The purpose of kinesics, as Knapp discloses, is to communicate, show expression, and to provide information about emotions, personality traits, and/or attitudes.

In their ground-breaking paper on nonverbal behaviour, Ekman and Friesen (1969) established a series of objectively-differentiated categories relating to various expressive physical actions (Eisenberg and Smith 1971, Knapp 1980). These categories include:

Emblems — gestural equivalents of a word or phrase, or the employment of various motions instead of a word or phrase. Most often, emblems occur during a verbal block. However, "the number of 'obscene emblems' such as the middle finger pointing up suggests that there may be greater inhibition against vocalizing certain phrases than against using gestural equivalents" (Eisenberg and Smith, 1971, p. 25).

Illustrators — movements in which an individual points at an object to which he is verbally referring, or in which he depicts a bodily movement about which he is talking. Illustrators are thus directly linked to, or accompany speech. They can also express logical relations or directions, and

spatial relationships.[31] Knapp (1980) reports that illustrators "may be movements that accent or emphasize a word or phrase, sketch a path of thought, point to present objects, depict a spatial relationship, depict the rhythm or pacing of an event, draw a picture of the referent, or depict a bodily action" (p. 6). In Knapp's opinion, one would expect to see a greater frequency of illustrators in face-to-face communication, in people who are enthusiastic or excited, when it's difficult to find the right words, or when being confronted by a listener who does not comprehend what is being said.

Regulators — actions which serve to "maintain and regulate the back and forth nature of speaking and listening between two or more interactants" (Knapp, 1980, p. 7). Regulators, like illustrators, cannot usually be understood outside the context of verbal messages. Examples of regulators include leaning forward or backward, nodding one's head, raising the eyebrows, etc. How one uses regulators depends on one's knowledge from observation. Knapp (1980) states that regulators "are generally difficult to inhibit. They are like overlearned habits and are almost involuntary, but we are very much aware of these signals when they are sent by others" (pp. 7-8). In ensemble performance, regulators are constantly employed. For example, one performer will nod the head for the other to begin. Eye contact — perhaps the most important device — has many purposes, such as letting our partner

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[31]Illustrators are used when normal discourse is either impossible or limited. For example, the use of gestures could be the only way for two individuals ignorant of each other's language to communicate.

know what we are thinking, cuing the other into what to expect next, ending the piece together, etc.

Affect Displays — body expressions which indicate the emotional state of the communicator. The principal way in which humans show their feelings (affective states) is by their facial expressions. However, as Knapp (1980) suggests, "the body can also be read for global judgments of affect; for example, a drooping, sad body" (p. 7). Unlike the previous three categories, affect displays are not tightly bound to verbal support; however, affect displays can "repeat, augment, contradict, or be unrelated to, verbal affective statements" (p. 7). Affect displays are also less easy to control consciously. It is necessary to emphasize here that, in musical performance, affect *is* the language. For example, one can get an idea of what a singer is singing about, simply by the facial expression and gestures, even though the accompanying words are being sung in an unfamiliar language.

Adaptors — movements learned in childhood which were originally part of a patterned activity with an instrumental purpose. In Knapp's view (1980), adaptors are the most difficult of the nonverbal behaviours to define, and "involve the most speculation." Knapp goes on to explain, "They are labelled adaptors because they are thought to develop in childhood as adaptive efforts to satisfy needs, perform actions, manage emotions, develop social contacts, or perform a host of other functions" (p. 8). Eisenberg and Smith's example of an adapter is when an individual wipes his mouth with

the back of his hand during a conversation. The interpretation of this action may be that it was one "part of a grooming pattern which he was trained to follow". They continue, "As an adult, however, he is using this isolated movement to relieve stress, or to put on a better face" (1971, p. 27). Adaptors are theoretically performed unconsciously, and without a trained eye, they are not noticed in general; however, Eisenberg and Smith state that "to the trained eye... adaptors indicate much about their performer's socialization experience and emotional state" (p. 27). In their paper, Ekman and Friesen identified three types of adaptors: self-, object-, and alter-directed.

Self-adaptors refer to the manipulation of one's own body — rubbing, holding, picking, squeezing, scratching, or pinching oneself. Self-adaptors tend to increase with anxiety. "An adult who wipes the corner of his or her eye during times of sadness (as if to brush away tears) may be showing a response that reflects that person's early experiences with sadness" (Knapp, 1980, p. 8).

Alter-adaptors "are learned in conjunction with our early experiences with interpersonal relations — giving and taking from another, attacking or protecting, establishing closeness or withdrawing, and the like" (Knapp, 1980, p. 8). An example could be restless movements of the hands or legs (which Ekman believes could be adaptors necessary for flight).

The third type, *object-adaptors*, involve manipulating objects — smoking or writing with a pencil, for example. Knapp (1980) finds that object-

adaptors are learned later in life, and seem to have less social taboos associated with them.

Because adaptors are reflexive gestures which can unconsciously, in an affective situation, influence the other individual or communicate an unintended message, we can see how they can affect a music ensemble. Very often, a musician will not want to perform with another person because the "vibes" just are not right, or the musician does not feel "in sync" with the other person. John Graham, a free-lancing violist, gives the following amusing account (Gay 1974):

> "It's sometimes hard in freelancing to work with so many different musicians. It's an invasion of privacy, and you have to trust someone to let them invade it. It's bound to be a brittle situation, with such a bunch of frenzied types. Occasionally there's an egoist who has to be controlled. You're likely to run into some unhealthy ingredients; you just have to keep them from overbalancing the healthy ones." (p. 3)

Despite various musicians' little quirks, there are many times when playing together is a true joy. Here, Nachmanovitch (1990) describes his experience of improvising with another musician:

> "It is astonishing how often it happens that two musicians meet for the first time, coming perhaps from very different backgrounds and traditions, and before they have exchanged two words, they being improvising music together that demonstrates wholeness, structure, and clear communication. I play with my partner; we listen to each other; we mirror each other; we

connect with what we hear." (p. 94)

Proxemics

The term *proxemics* was first coined by Edward Hall in 1966 and was used to discuss various theories on one's personal and social space as is learned by one's culture (Ley, 1975; Leeds-Hurwitz, 1989). As Eisenberg and Smith (1971) explain, proxemics "involves the relationships between the communicator's body and other people or objects in the environment... and the key concept is space" (p. 28). According to Leeds-Hurwitz (1989), there are two aspects of proxemics:

> "The first is use of space between people, that is, how close or far people stand from one another while interacting. The second is environmental influences: that is, the effects of such things as architecture and location of furniture on interaction." (p. 105)

As the above descriptions of proxemics suggest, one communicates differently when in closer proximity than when further apart. In the fourth chapter, we will see the differences in interaction between duo pianists playing at one piano and two pianos. A challenge unique to duo pianists is communicating effectively when further apart.

A Summary of Nonverbal Communication Components

In summary, paralanguage, kinesics, and proxemics are the components of nonverbal communication that have been given the most attention. At one time or another during a rehearsal or a performance, an

orchestral conductor — whose communication with her orchestra has the specific quality of being visual both to the musicians and to her audience — employs virtually all of the nonverbal behaviours discussed by Eisenberg and Smith (1981). Emblems, for example, are used when words can not sufficiently express her intentions; illustrators, where she points to the timpanist or to the woodwinds; regulators indicate her acceptance or dissatisfaction; affect displays bring out something in the music; and adaptors help the musicians to better understand the expectations that emerge from the conductor's background and personal history.

The visual aspect of nonverbal communication between a singer and accompanist, a duo piano team, or between members of a chamber ensemble, is somewhat more elusive than that between a conductor and her orchestra. Apart from the music itself, nonverbal communication is usually the only available means of communication that ensemble musicians have during the act of performing. It is only in rehearsal that musicians have the option of communicating verbally, but the way our verbal language is used (with inflections, use of metaphors, pausing, emphasizing certain points, scatting[32], etc.) directly affects our playing.

To encompass even more of what occurs in nonverbal experience, Leeds-Hurwitz (1992), in her model of communication, also includes other areas such as touch, taste, smell, and objects. It is, of course, easy to see how

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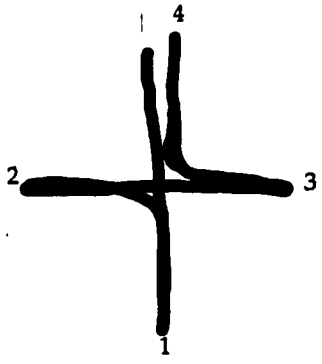
[32]discussed later in this chapter

touch and objects in particular apply to musicians, being that sounds are communicated via our touch on a given instrument (the object). Touch by itself — as we will show later — that is, independent of sounding an instrument, can be employed to directly communicate very precise musical meanings. Next, we specifically address touch and other modes of nonverbal and verbal language that musicians employ.

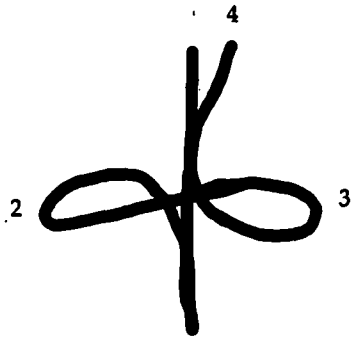
Speaking Musically Without Words

Three modes of communication are associated specifically with musicians: scatting, expressive gesture, and touch. Used reflexively by musicians, this special language is more directly musical than words — it simplifies what we are trying to communicate. The importance of this music-specific language can be seen when the music "goes off" as a result of when I feel the music differently than my partner. If I hear the beat as angular (see Figure 2.1), and she hears it as more flowing (see Figure 2.2), even if we are in perfect time, it will not sound like we are playing together. We may take turns demonstrating how we feel or hear the music by conducting (expressive gestures), scatting the music, using touch, or a combination of the three. Doing so organizes our bodies to match a particular aesthetic quality. After co-experimenting, we reach an aesthetic agreement.



Angular Pattern

Figure 2.1



Flowing Pattern

Figure 2.2

Scatting

Scatting is a mode in which musicians use sounds to communicate intentions. Clayton and Gammond (1986) define scatting as "a way of jazz singing, which uses wordless phrases or sounds instead of lyrics, in an improvised imitation of instrumental performance" (p. 212). Scatting in one form or another is not confined to jazz musicians. For example, it is intrinsic to Indian solfege, and is employed by musicians everywhere before and even during a performance. Musicians who are famous for making use of what became a "popular art" include Louis Armstrong, Ella Fitzgerald, Glenn Gould, and Andre Watts, among others (pp. 212-213). In essence, scatting is a

musical form of paralanguage.

Scatting is the point where language and music unite. Composed of an infinite variety of stresses, articulations, syllables, agogics, inflections, pulses, etc., scatting is directly-accessible and is more precise than metaphors. Jazz musicians are not the only ones who make use of scatting; it is a cross-cultural phenomenon. My duo partner and I, both classically-trained pianists, very often used scatting to give us a direct sense of the beat, aesthetics, the shape of the line, attack, articulation, pauses, etc., before we began playing a piece. For example, in the Rachmaninoff Waltz analyzed in Chapter Six, the beat could be conceived as oom-pah-pah or bom-da-di — indeed, the number of possible combinations of articulating a waltz beat are infinite. However, there is one particular shape of a beat that will appear just right to the pianists, leading to an aesthetic decision.

Expressive Gesture

An individual's expressive gesture gives the aesthetic *feel* of the music. When speaking of a particular conductor he enjoyed working with, one orchestral musician said that what made this conductor's communication effective was that "he acts out the emotions of the piece at the time. You know exactly what it's supposed to sound like, and what exactly you're supposed to do" (Faulkner, 1983, p. 78). The musician went further to explain that other conductors with only one emotion for every piece communicate

very little in terms of the nature of the music itself. When watching a video of Carlos Kleiber conducting (1983), it is evident that he is not just showing great baton technique, but he communicates directly with his eyes, his approving smiles, and his "acting out" of the aesthetic shape and details of the musical score in general. If one turned off the sound, one could still pick up the general shape of the musical line by the gestures within the baton technique — somewhat like a mime or a dancer to whom expressive gesture is the embodiment of her art.

Touch/Sound

Touch, perhaps the most important source of communication for musicians because it is the means whereby we create sound, can be used in two ways: (1) to demonstrate articulation to our partner; and, (2) in the course of actual playing, to communicate subtleties in the music to our partner.[33] Closely related with touch is articulation — the way in which we have contact with or touch the instruments. When one speaks of a pianist's touch as being "heavy", "light", or "effortless", one is really speaking of the aesthetic timing of his/her articulation. A heavy touch can lead to a majestic, sorrowful, or laboured sound, while a light touch generally gives the sense of

[33]Touch can also be a useful tool in teaching. For example, my student may be skimming the keys, while the music may need a more definite sound. To achieve this, I may sometimes start to "play" on her shoulders which immediately cues her into playing with a more definite quality.

breathing, of ease, of playfulness. When performing, touch is our only means of communication, aside from a gesture, perhaps, to begin together.[34]

Based on their needs in a particular context, musicians may instinctively rely on touch, expressive gesture and/or scatting to communicate when words seem inadequate. Through a musician's use of touch, expressive gesture, and scatting, we see a mirror of the actual music itself. In the following chapter, we investigate contemporary research into musical communication between performers.

[34]For example, if I feel shaky in a particular spot, my partner will sense it from my touch quality. She then may play with a solid sound, providing support that will cause my touch to become more firm.

Chapter Three

Exploratory Investigations: New Directions in Communication Research

"Any musical ideas that you have, you have to find a way to make it coherent and logical to somebody else. And if the musical *gesture* that you choose is not convincing in and of itself, it's not going to take place." (italics mine)
James Conlon, conductor, Van Cliburn Competition

The most revealing aspect about the literature on nonverbal communication is the relative absence of studies addressing the unspoken interchange that takes place between musicians during rehearsal and performance.[35] Given the historical precedents discussed in the previous chapter, this lack of research is not at all surprising. Denski (1992), in his analysis of the musical and communication literature, notes that:

> "...research directed at examining the character and processes of communication *with and among the various structures and communities of the musicians themselves* is a pressing area of underrepresentation... It would appear that academics... have neglected the music makers." (p. 33)

On the occasion when communication is discussed, the context is most likely to be that of audience response[36] (see Bornoff, 1972; Jones, 1992; Lull,

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[35]An exception might be made for clinical studies in music therapy (Benenzon, 1997; Bunt, 1994, and Robbins, 1980), in which communication between therapist and client is often and sometimes solely musical, and thus nonverbal. Since, however, this field of research is therapeutically-oriented, it does not deal with issues related to professional musicians preparing for a concert.

[36]The focus of these studies is primarily on the effect of popular music on its audience. Catch phrases such as "pop culture", "mass communications", "music trade", and "global culture" are peppered

1992). Occasionally, organization and related factors in musical ensemble will be discussed, particularly in studies of orchestral situations. Typical is John Partinginton's (1995) verbatim account of interviews he conducted with twenty-one orchestral musicians. The study offers little about onstage communication, but rather confines itself to the following: (a) possible predisposing factors to becoming orchestral musicians, (b) modes of preparation and ways of practicing, (c) pre-concert preparation, (d) what the musicians described as ideal performing states, (e) strategies for managing distress, and finally, (f) moments of transcendental performance[37]. A small number of studies (Faulkner, 1983, Pollack, 1991) recount certain self-evident observations on the nonverbal communication between a conductor and an orchestra — for example, the conductor's postural attitude, gestures, cuing techniques, facial expression and eye contact. While more communication specific than Partington, Faulkner's (1983) interviews with fifty orchestral musicians on the criteria for evaluating a conductor's skills and effectiveness provide very little beyond undeveloped generalizations. The following response is characteristic: "He has to *show* (italics mine) us what he wants, he

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throughout.

[37]not unlike the concept of "jamming" described later in this chapter.

has to have that personality, then we'll follow him"[38] (p. 75). In his personality profiles of student conductors, Pollack (1991) attempts to determine whether a correlation can be established between a conductor-specific personality and skill in communicating. Unable to find any significant correlation, Pollack concludes that "There is no 'perfect personality style' for a conductor" (p. 160).

Musicians As Participant/Observers: Bringing a Fresh Perspective To Communication Research

Four recent studies, primarily on group improvisation, do address — albeit tentatively — the nature of the musical experience and how it is communicated between performers. It is perhaps significant that at least three of these studies were conducted by researchers with strong backgrounds as performers. This becomes immediately evident in the methodological criteria each adopts and the intrinsically musical values they identify throughout their investigations. Since these represent a positive direction in communication research, I will treat them in some detail — despite the reliance on familiar generalizations, such as flow, transcendent experience and cultural context .

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[38]Faulkner found that musicians claim to be able to assess within ten or fifteen minutes whether a new maestro "is a fake, a phony, a brilliant technician, a charismatic personality or a poseur" (p. 73).

Monson: Communication Between Jazz Musicians

Ingrid Monson's Saying Something: Jazz Improvisation and Interaction (1996) brings a broadly-interpreted ethnomusicological perspective to the analysis of communication between jazz musicians during improvised sessions. In rationalizing her departure from traditional ethnomusicological practice,[39] Monson addresses the complexities involved in a music she describes as essentially "urban, heterogeneous... crosscut by media, multiple ethnicities, and the recording industry" (p. 5). As a consequence, Monson acknowledges the multiplicities within "the jazz world" and develops a perspective that takes "paradoxes and differences in points of view as a given, not as something to be explained away" (pp. 5-6). Her interviews with musicians, for example, involve a highly-integrated examination and analysis of the specific jazz metaphors — descriptive and cue-specific — employed by the musicians. Metaphor examples include "groovin,"[40] "swingin'," "cakes,"[41] "jitterbug," "cats," etc. The use of these metaphors, which are understood by all jazz musicians, not only give a feeling of

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[39]based as it is "on a general presumption of cultural coherence" (p. 5)

[40]described by drummer Michael Carvin as "getting into a bubble bath" (p. 93).

[41]Michael Carvin used the term "cake" in reference to musical categories. To him, a symphony is a "plain cake", whereas improvisation is "upside-down cake with brown sugar... You can cook it upside down but you eat it right side up" (p. 101).

community (an "in-language", if you will), but are immediately understood in terms of specific, aesthetically-directed musical actions because of the way in which the metaphors are intoned, inflected, and accompanied by analogous gestures. While she does not specifically talk about kinesics, proxemics, and paralanguage, Monson is able to show how jazz-specific metaphors and the context in which they are spoken mirror the intended "feel" of the music. Monson explains: "I explore *how* musicians chose to talk to me about improvisational processes—the metaphorical images and figurative tropes that provide an entrée into the cultural aesthetics of interaction and improvisation" (p. 8).

Monson's primary focus in the interviews was a detailed musically-centred discussion of specific exchanges that took place in recordings of recent performances[42] by the musicians. This enabled Monson to chart musical interactions, along with their implications for performance and communication analysis, and incorporate her findings into a cultural perspective (that of African-American jazz musicians). Monson was able to show, then, that in "any given moment in a performance, the improvising artist is always making musical choices in relationship to what everyone else is doing" — choices based on achieving a "satisfying musical journey" depicted by "the feeling of wholeness and exhilaration" (p. 27). In effect, Monson adopts a *metacommunicative perspective* , defined by Charles Briggs

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[42]normally recorded within a day or two before the interview

as "statements that report, describe, interpret, and evaluate communicative acts and processes" (p. 20). While the present thesis differs in content, it adopts a metacommunicative approach similar to Monson's (see Chapter Five).

Eisenberg: "Jamming" Experience By Jazz Musicians and Athletes

In Jamming: Transcendence Through Organizing (1990), Eric Eisenberg explores improvisation as it is experienced by athletes as well as musicians. "Jamming" (Eisenberg borrowed the term from jazz and sport) is defined as a "highly rule-governed, structured activity in which little or no personal information is exchanged, yet important goals may be accomplished, and a strong, ecstatic bond is formed among participants" (p. 146). In his comparative, cross-disciplinary study, he describes "ınstances of fluid behavioral coordination that occur without detailed knowledge of personality" (p. 139); that is, precisely those conditions which occur in spontaneous musical improvisation or unrehearsed sight reading by ensemble professionals.[43] Basketball center Bill Russell paints a vivid picture of the jamming experience as "magical", when "the game would just take off and there would be a natural ebb and flow that reminded you of how rhythmic and musical basketball is supposed to be". There were times when

[43]For example, studio musicians or ensemble players — whether chamber or jazz — in rehearsal or unprepared concert, and less often, in an unrehearsed solo concerto performance with full orchestra.

he found himself so caught up in the flow, that "I'd actually be rooting for the other team"! Russell elaborates on the experience:

> "The game would be in a white heat of competition, and yet somehow I wouldn't feel competitive...The game would move so quickly that every fake, cut and pass would be surprising, and yet nothing would surprise me. It was almost as if we were playing in slow motion...I always felt then that I not only knew all the Celtics[44] by heart but also all the opposing players, and that they all knew me...these were the moments when I had chills pulsing up and down my spine" (p. 148).

Four essential characteristics of the jamming experience are identified by Eisenberg: the experience (a) is transcendant: the "total involvement in music-making" or the game (p. 146); (b) "embraces diversity" (p. 149): performers relate to each other onstage, but offstage may have little to do with each other; (c) is fragile: "it can never be routinized, habitual, linked to a specific set of antecedents, or necessarily self-sustaining once begun," but it is possible "to *cultivate the attitudes and expectations* (italics mine) that make jamming most likely to occur" (p. 150); and finally, jamming (d) can put one's ego at risk: "When engaged in jamming, something of one's self is on the line". There is the risk of embarrassment particularly if one's playing is not up to par "exposing (the possibility) that unresolved emotional issues may be triggered by the intensity" of the experience (pp. 151-152).

Eisenberg names four preconditions for jamming: skill, structure, setting and surrender. Though it is evident that *skill* levels should be

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[44]Here, Russell is, of course, referring to his basketball team.

comparable — in that a professional may feel restricted and therefore reluctant to play with a less-skilled amateur, *comparable* does not imply that "all players must be equally-talented." Rather, the idea is "playing the roles for which they have sufficient skill" (p. 153). This may indeed work for a basketball team, wherein each player has a specific task and talent at hand, but for the present study which involves duo pianists, it is important to be compatible musically: not just having a comparable technique, but the pianists must find a joint aesthetic vision of the music.[45] Although *structure* by definition is normally considered limiting, jamming illustrates that the opposite may be true in that "a highly defined structure can also be liberating" (p. 153). How is this possible? According to Eisenberg, "a lack of emphasis on individual personalities frees people to engage unself-consciously in coordinated action" (p. 154). The enactment of the structure, then, is creative. In a musical jam session, "Relying on the basic rule and role structure, each player sets up interesting possibilities for the others and keeps the action going' (p. 154). Though Eisenberg is speaking of improvisation, working with the structure of a musical text is similar. Once the fundamentals are attended to, the translation of the textual into aural experience frees us to give our interpretations the moment of performance. In regards to the third

[45]For example, when I have played with fellow pianists with comparable skill, who even had the same teacher as myself at the time, it was sometimes impossible to communicate and reach an agreement of what the music was to sound like. In such conditions as these, it is highly unlikely that jamming will occur.

condition, jamming is more likely to occur in a "special contained *setting*" than in "normal life," because participating individuals are "judged" by their art — their actions — rather than by their personalities (p. 155). Eisenberg stresses that he is not implying that it is easier to perform with strangers than with acquaintances; rather, that we may enjoy performances with people that we would not necessarily associate with socially. Jamming with those we know well, on the other hand, can also present a problem: specifically, we must find "ways to somehow set aside what we know about the details of another person's personality in order to create the possibility for seamless coordination" (p. 155).[46] Finally, the jamming experience demands "*surrender* of control" (p. 156). In other words, one cannot will the experience: trying to do so will almost certainly block *flow* — a term coined by Csikszentmihalyi (1990), defined as "the state in which people are so involved in an activity that nothing else seems to matter". Csikszentmihalyi continues by saying that "the experience itself is so enjoyable that people will do it even at great cost for the sheer sake of doing it" (p. 4). During flow or jamming, it is commonplace to feel that the music or the game plays us. This paradoxically demands well-executed skill, rather than the expectation that luck, fate or the muse will help us through. In essence, Eisenberg is

[46]In the present study, I found it advantageous to know my partner well, because we could anticipate what each other would do in the music and knew each other's tendencies as well in our musical lives as in our personal lives. Each setting enriched the other one.

suggesting that the jamming experience can be cultivated.

Nachmanovitch: Improvisation: Being in the Moment

The influence of Stephen Nachmanovitch's Free Play: The Power of Improvisation in Life and the Arts (1990), both artistically and psychologically, will be self-evident, as tidbits of knowledge from his book are dispersed throughout. Based on "the inner sources of spontaneous creation" (p. 5), Nachmanovitch began writing his book because he found it "inescapably fascinating that the conception, composition, practice and performance of a piece of music could blossom in a single moment, and come out whole and satisfying" (p. 6). Extending beyond the scope of music making, Nachmanovitch views improvisation as disintegrating "the artificial boundary between art and life," in that patterns emerging from the improvisatory experience can be found in any act of creativity (p. 6).

Here, I shall confine myself to facets of "jamming" or "spontaneous creation" that Nachmanovitch shares with Eisenberg. First of all, Nachmanovitch recounts his experience of jamming:

> "I feel in my blood, my bones, my muscles, my brain, a wholly new and unexpected surge of energy... Time doubles and triples over on itself; *I* disappear and the music really starts to cook. My feeling is invariably one of wonderment: 'How in hell did *that* happen? I didn't know I had *that* in me!' Suddenly we, the players and the listeners, find ourselves elsewhere; the music has *moved* us." (p. 140).

Over time and throughout a rich variety of experiences, Nachmanovitch

found himself able to release himself to a certain degree from controlling "the moment" — surrender, in other words. Nachmanovitch describes surrender in these instances not as "defeat but rather the key to opening out into a world of delight and nonstop creation" (p. 141). When we attempt to force the experience, that is, "*try* to control" ourselves, or "*try* to create," or "*try* to break free of the knots", we will almost certainly block the creative flow, precisely what Eisenberg means when he speaks of the "fragility" of jamming (p. 141).

Nachmanovitch also speaks of the musical structure or form. In improvisation, beginning with the first selection of tones, what one is playing directly affects what is to be played next. Nachmanovitch likens improvisation to a blank piece of paper which is first "without form" but, as soon as a mark is made, it "sets up a definite world and poses an infinite series of creative problems" (p. 103). The same is true in creating fiction. These are all examples of *dynamic* structures, which apply to performing musical texts as well. Let us say that my partner begins the piece with a faster pace than usual. This will inadvertently change the way in which I play my part. It is not necessarily negative by any means: in real time performance, we play off of each other, changing even the written structure into a living, dynamic experience. The music cannot be played the same way twice, just as one can go to see Shakespeare's MacBeth four nights in a row at the same theatre with the same actors, and yet each night will be different, even with a

consistent text.

Comparable with Eisenberg's concept of jamming is performing or being "in the moment". Performing "in the moment", of course, involves the element of risk. The performer goes "out on a limb", takes risks, and sometimes falls on her face. Nachmanovitch states that "in fact, what audiences love most is for you to go ahead and fall. Then they get to see how you manage to pick yourself up and put the world back together again" (p. 22).[47] Presumably, then, when I "fall", if the music and cues have been internalized (see the following chapter), my partner or other members of the ensemble will be able to get me into "the groove" again, or the flow. This ability suggests a high level of internalization, improvising in the moment, sensing each other, anticipation, and continuity through contingencies: a goal of all musicians — soloists and ensembles alike.

Malloch and Trevarthen: Baby Talk

This leads us into Stephen Malloch and Colwyn Trevarthen's recent study of mother/infant communication, which is also a form of paralanguage. Malloch, a music physicist, and Trevarthen, a psychologist, biophysiologist, and expert in mother/infant communication introduce the idea that all areas of communication extend from early musical and intuitive "duets" between

[47]Those who are less successful may find themselves obliterated in the local newspaper's music critic column the following day.

mother and baby (Mistiaen, 1998).[48] Like scatting, this type of paralanguage is also cross-cultural. Though the impact of this area of communication research has yet to be thoroughly investigated, it could provide us with an important link for investigating the musical experience.

Summary

It is interesting that, at a fundamental level, Nachmanovitch's "spontaneous creation" and Eisenberg's "jamming" are clearly taking off from Csikszentmihalyi's concept of "flow". Each are updating the traditional notion of ecstatic transcendence — without the moral reservations. What the above musical communication studies provide is a solid springboard into the nature of the communication between performing musicians. Their limitation is that none ask what the underlying cognitive processes may be or what logic is involved in the experience of transcendence. In the following chapter, we will review some of the means in which ensemble musicians may prepare for communicating with each other, particularly how cues are internalized in practice, rehearsal, and coaching sessions.

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[48]This idea is compatible with Phil Cohen's working hypothesis, which suggests that "what we call music is an organized expansion of primary experiences we have; that is, the quality of rocking, quality of touch, quality of tone, quality of balance, and degree of energy" (1997).

Chapter Four

Cuing Into the Art of Internalization

"He doesn't know where I'm going, I don't know where he's going, yet we anticipate, sense, lead, and follow each other... We open each other's minds like an infinite series of Chinese boxes. A mysterious kind of information flows back and forth, quicker than any *signal* (italics mine) we might give by sight or sound."

Stephen Nachmanovitch[49]

Here, Nachmanovitch, in his reflections as an ensemble player immersed in spontaneous improvisation, touches on the ultimate ideal sought by every ensemble musician: to perform without predetermined visual cues, thus having a sense of spontaneity. Clearly, the musicians in this situation are relying exclusively on the sound itself. This aesthetically and biologically-based communication involves anticipation, synchronizing with each other, listening closely to one another (empathetic listening), knowing when to lead and when to follow — in other words, making sense decisions in real time. Jazz pianist Sir Roland Hanna expresses this developed intuition very well:

> "There's a curious thing about musicians. We train ourselves over a period of years to be able to hear rhythms and anticipate combinations of sounds before they actually happen" (Monson, 1996, p. 49).

We have all encountered a direct experience of this nature in daily life:

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[49]1990, p. 37

typically, we are introduced to someone we have never spoken to before — perhaps someone with a different lifestyle than ours — and something happens. It is as if we have known that person all of our lives and we know and sense what the other one will say. We are improvising, letting words and actions flow between us with a certain knowledge that we are not being judged: anticipating, following, leading, sensing and being attuned to each other.

Imagine this scenario, then: two musicians, not using words, playing different instruments, and who have never met, are able to communicate — without predetermined signals — not only to each other, but to an audience. The question that then follows is: in a complex formal discipline, such as musical performance, can this quality of being capable of performing together in synchrony without apparent cues be cultivated? This is, of course, a crucial question for the ensemble performer. As a consequence, ensemble musicians have developed certain techniques and procedures in order to facilitate cultivation of rapport[50] — in general, a repertoire of cues are established. In the process of working together in order to find aesthetic agreement, these cues ideally become absorbed to the point where they are no longer experienced as signals. We call this search the art of mutual *internalization*, the purpose of which is not to automate a performance in the mechanical

[50]It is interesting that it is possible for musicians to have that rapport onstage and once offstage, to have nothing to do with each other. The most famous example is the Budapest Quartet.

sense, but to free both performers to enter into an apparently spontaneous musical co-creation — one that will hopefully bring a unique perspective to every performance.

The Importance of Being a Cue

Definition

A cue in this thesis is defined as any verbal, visual, or auditory signal that directly influences the nature and direction of the performance.[51] Ideally, the aim of a cue is to precisely establish — that is, *time the aesthetic tone* and therefore should not be confused with the mere setting of tempo. In other words, cues are used to give a desired *quality* of sound. For example, the quality of a conductor's gesture is what cues the orchestra immediately into how the music should sound. Is the gesture angular or flowing?

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[51]Webster's Ninth Collegiate Dictionary (1983) both precisely and broadly defines a cue as: "(1a) a signal (as a word, phrase, or bit of stage business) to a performer to begin a specific speech or action; and (1b) something serving a comparable purpose" (p. 314).

Both of these definitions are pertinent to the way in which this thesis approaches cues. Regarding definition 1a, it is easy to recognize cues of this nature in performance — for example, the orchestral conductor points his baton at the strings as they are to enter, or the band leader counts down before starting a song. If we look at definition 1b and relate it to musical performance, it may also include those cues which are less evident, such as a metaphor that the performers developed to help cue them into playing a section of the piece in a certain manner. Such a cue cannot generally be seen, unless perhaps, one is intentionally playing like a cat.

Categories

Below is a list of seven categories of cues employed by musicians.[52] These categories[53] are composed from both my personal experience in observing musicians interact and from a collaborative effort with our performance coach. It should be understood that cues are given reflexively, and, as such, are generally uncalculated. Musicians probably do not say to each other, for instance, "Here is the stock cue that we will use." It cannot be overemphasized that there is considerable overlap between the categories.

(1) Stock Cues: These cues, essentially visual gestures, are structural guideposts universally used by ensemble musicians. They may be determined in advance, but often as not emerge with the work in progress. Stock cues include eye contact, a nod of the head, a lift of the eyebrows, a rhythmic breath, a hand gesture, a bow stroke, a count-down, etc. These are usually context-specific in the sense that, along with establishing the initial timing of a piece, they indicate tempo, mood, textural changes, entrances, points of stress and so on. Because stock cues are visual, they are fairly easy to identify.

(2) Metaphoric Cues: The advantage of a metaphor is that it has the

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[52]though not necessarily by *all* musicians — depending, of course, not only upon the performer's level of experience, but also upon the demands of the situation at hand.

[53]the titles of which are given for purpose of reference.

ability to trigger an image that is at once verbal, visual, and aural. In the process, the body immediately responds to the stimulus and organizes itself accordingly. As a consequence, a well-chosen metaphor — whether poetic, visual, or otherwise — can be one of the most effective cues available to a performing musician. Even the simplest metaphoric comment can be effective. For example, during one of our rehearsals, my partner complained that an expressive passage we were struggling with was too "square". The image, of course, was negative, but on our next attempt, the music automatically warmed up, the phrases following each other in gently undulating waves.

(3) Environmental Cues: An unanticipated event in the environment may act as a cue if it directly inspires a change (not necessarily negative) in the tone of the performance: anything, for example, from a sudden clap of thunder to a baby wailing, or an out of control cell phone in the front row. During rehearsals, our coach might unexpectedly create "a sudden environmental disturbance" designed to confirm our degree of internalization — and, hopefully, to help us turn a distraction to creative use.

(4) Spontaneous Cues: By definition, a spontaneous cue occurs as a consequence of an unplanned contingency. Again, it can consist of one or more exhibits drawn from the nonverbal arsenal: an illustrator, a regulator, an adapter, an affect display. Stretching the point a bit, one of us during rehearsal might pair Rachmaninoff with stereo-typical Russian angst and the

other will immediately pick up the change in mood reflected in the demeanour of the other. Spontaneous cues are more likely to occur during a performance in which fundamental technical and musical details are no longer an issue.

(5) Miscues: A missed cue, like a missed beat or a wrong note, can inspire an alert, highly skilled creative performer to bring a fresh perspective to the music. It has been said that Franz Liszt could turn a wrong note into a modulatory sequence that would surprise and delight his audience.[54]

(6) Purely Musical Cues: Ideally, a purely musical cue becomes possible when the music has been internalized to the point where the performers not only think and hear alike, but each is capable of anticipating what the other is about to do. An inspired change in harmonic voicing or articulation, an inflection, or a pushing or pulling of the beat can profoundly affect the perceived character of the music for both the performers and their audience. It becomes, in a very real sense, a collective improvisation.

(7) Temporary Designed Cues: Very often in rehearsal, musicians find it necessary to employ a cue designed to highlight and resolve a particular block in communication. Once the problem is solved, the cue may no longer be necessary. A temporary designed cue may include a deliberately exaggerated gesture or stress, a modification of tempo, phrase, harmonic

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[54]I can recall the moment in concert when my partner suddenly skipped an entire measure, and I, as *if on cue*, reflexively skipped with her. We landed together precisely on the first beat of the next measure.

balance, or the structural outline of a passage.

The Process of Internalization

The Unseen Cue: The Game of Seek and Hide

The main goal of ensemble musicians is to internalize cues to the point where they are no longer experienced as cues. Internalization then occurs when the cues are effectively absorbed. As the heading suggests, what musicians are doing is first of all finding the appropriate cue at a particular moment, then ultimately having that cue so integrated into the music and within their bodies that it is no longer evident. Essentially, in their search for the right cue, the musicians set up a mutual hypothesis — an aesthetic idea — based on their initial experiences with the music. The hypothesis is then confirmed or falsified. These aesthetic ideas are understood to be working decisions, which means the music is deconstructed and reconstructed, going through many transformations,[55] and may be radically changed by and even after the date of a performance.

Verbal Cueing

[55]In this sense, restructuring the music becomes a means of confirming memory in terms of precisely-articulated and mutually agreed-upon cues.

It is obvious that musicians must verbally communicate with each other during practices and rehearsals in order to establish cues that are considered worthy of employment in the performance. These preliminary discussions, while focused on textual information, generally proceed from a metaphoric nature rather than a literal exposition of information. For example, an indication of forte (loud) or fortissimo (very loud) may be interpreted anywhere from brilliant, warm, militant, to percussive, depending on the musical context, the style, and, ultimately, personal taste.[56]

Metaphors can be of varying degrees of elaboration, but in all cases they are most effective when they help us go beyond merely striving for accuracy in a passage towards sensing its aesthetic nature and shaping the passage meaningfully. Ideally, the language (our use of metaphors and scatting) should immediately cue us into the experiential level of musical apprehension — not only by the way in which we hear, feel, and interpret music's pulse, articulation, and emotive tone, but by the manner in which we synchronize our bodies to each other and the music (essentially, how we "become one" with the flow).[57] Verbal communication, particularly in the

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[56]It is unlikely that the type of forte in a piece by Bach — designated for an instrument of relatively narrow dynamic range — would, on a contemporary piano, be equivalent to a forte in the music of a twentieth-century Russian composer, say, Prokofiev.

[57]Metaphoric imagery can sometimes be used to dislodge an apparently intractable performance block. Sometimes an effective metaphor can appear extreme. An example that comes to mind is when M.T. and I prepared the Walter Piston Concertino for Piano and Orchestra (a transcription for two

initial stages, can therefore be valuable in the process of translating the text, a visual representation — at best a guide to the composer's musical intentions — into the immediacy of an aurally-communicated experience.

Experiencing Internalization

The experience of internalization involves a cultivation of being so attuned to each other that unanticipated contingencies (possible miscues) in the course of real-time performance not only are less likely to prove disruptive, but ideally can be turned to creative advantages. A prime example is the typical occurence of a performer losing her place and skipping a bar in a piece. What does the other performer do? She has to skip the bar, too, or somehow bring the other one back. Good professionals do this all of the time to the point that the audience may not even notice. In order to better grasp the internalization process, we will now examine how pianists may work together.

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pianos). While we were able to achieve a very high level of note perfection, we had difficulty making musical sense of the erratic rhythmic complexities that confronted us in the final pages. The more we worked, the more perplexing the passage work became and the more we felt blocked in attempting to execute the passage meaningfully. It was not until our coach suggested and visually demonstrated the characteristic stagger patterns of a drunken man winding his way down the street in the wee morning hours after a night of revelry that we were able to resolve the problem. In retrospect, the humour of fixating on this image gave us both the distance to cope with the labyrinthine complexities of the music as well as offering a very precise cue on how to manoeuvre through the labyrinth itself.

An Example: A Duo Team Experiments

It is helpful for those who wish to study communication between musicians to understand exactly what is involved in the preparation of a work of music: how do the pianists go from not knowing a piece to giving a spectacular performance? The emerging artists undergo a specific layering process that is comparable to Alfred North Whitehead's stages of learning (1929): Romance, Precision, and Generalization (paralleled below). The process is not unlike the development of a high level sport, and includes a similar four or five-way (including the composer) exchange between oneself, one's partner (or team members), the coach and the audience.

Practice

Practice, whether towards a solo or duo performance, involves a measure of experimentation. After the initial playing through (equivalant to Whitehead's *Stage of Romance*) the pianists generally scan the music for the overall picture, making mental notes of potential problem areas and where to begin working on the music — a process familiar to many performing musicians.

Once the pianists work both individually and together on getting the elements down, they begin establishing a technical and musical relationship. Ideas are shaped by their aesthetic understanding of how they feel the music should sound. In other words, the pianists are translating the musical text

into aural terms — comparable to Whitehead's *Stage of Precision*. Along with the initial learning of the notes, the tempo, meter, aesthetic timing, dynamics, articulation, balance of parts, texture, pedallings, agogics and voicings must be established and synchronized with the other person.

Rehearsal

In rehearsal, the pianists work on technical problems that are peculiar to the instruments — which may be side to side or up to 18' apart — and concentrate on achieving continuity. Therefore, the goal is to look at the whole picture, or the whole effect of the music (Whitehead's *Stage of Generalization*). An aesthetic agreement is discussed, reached, and perhaps reconciled concerning our personal visions of the musical interpretation formulated during practice. The less tangible areas of the music are also worked on — such as nuances, inflections and all of the things which involve our understanding of the style of the music and the particular composer's voice — i.e. his or her signature. For example, one's performing style would differ greatly when playing Rachmaninoff and Mozart.[58]

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[58]Typical of Rachmaninoff's late 19th century style is a large number of big, deep-rooted chords, running octave passages all over the keyboard, full sound that diminishes to a whisper, a vast range of dynamically-expressed emotions, and variations in tempo. Mozart's music, on the other hand, while deeply felt, is expressed by means of a much smaller palette of subtle and elegant musical gestures. Mozart's piano music has a characteristically clean sound (with one wrong note, even the most tone-deaf audience member may raise a questioning eyebrow).

An important factor of rehearsal is the development of a system of cues which ultimately become purely aural. In crafting our art, what emerges is an interpretation that establishes our dual effort, our understanding of the meaning of the piece, our signature. In doing so, we give the music a sense of purpose.

Before a performance, it is common and helpful for the pianists to present formal rehearsals.[59] Formal rehearsals take place in front of an audience, which is asked for critical feedback afterwards. The pianists try out the order of their programme which may be changed for the actual performance and get a sense of the pianos and the acoustics of the room, making changes when necessary.

Coaching Sessions

The artistic coach often plays a central role in helping ensemble performers achieve their musical goals. In the case of the present study, our coach helped my duo partner M.T., and me to achieve the technical facility to carry out what we wanted in a piece of music. He listened carefully for a balance between the pianos, helped with any problems that arose, guided us in our methods of practice, and made us aware of how to listen to each other in order to help each other out when he was not available.

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[59]referred to as Open Rehearsals in the Leonardo Project. The Leonardo Project's purpose is to study "the nature of performance creativity and its potential to human well-being" (Cohen & Chan, 1998).

Specifics of Being a Piano Duo Team: Duos Versus Duets

It is important to clarify the distinction between the playing of a duet on a single piano and the experience of playing on separate instruments. In the former, the proximity of the pianists, seated on the same bench or on adjacent chairs, involves very specific problems such as the periodic interlocking of hands, the use of the pedals, differences in breathing, the need to use peripheral vision, and the occasional collision of bodies. It is easy to see that one's personal space is limited.

Performing on two pianos involves its own special challenges. First of all, there is an egalitarian relationship between the pianists. In other words, there is a ensemble of two same instruments without the conductor. Playing on two pianos means that there can be no changes in timbre that act as cues — considered a given in a string ensemble or an orchestral performance setting.

The communication changes between pianists when playing at a greater distance from each other, even though the pianos may be adjunct to each other. The following are aspects or potential problems which should be considered when examining the communication between pianists playing at two pianos — the distance, volume of sound, the ability to interpret facial cues (such as eyebrow movements, nodding the head and related gestures), the need to rely for the most part on anticipation, and the greater dependence

on aural communication. The pianos themselves may be anywhere from 10' to 18' apart. Even though there may be greater difficulty in communication at two pianos, Simon (1960) poetically expresses the advantages in doing so:

> "Music for two pianos has a special quality that need not (and probably can not!) be expressed in mathematics or acoustic formulas. The pianos can produce a singular tonal magic... The 176 keys offer a tonal vocabulary which not only is more versatile than that available to one piano of the conventional 88 keys but which also has its own kind of sound or, if you will, speech... with its poetry, drama and other attributes, including laughter..."

Duo pianists, whether performing on one piano or on separate instruments, are generally more often required to perform as virtuoso pianists. This idea is especially realized by the duo pianist when at her own piano. Because the pianos are two instruments of the same timbre, this can present very special problems in communication. The pianists try to be balanced, focused, aesthetically responsive, and able to anticipate each other's movements in advance. On the one hand, the pianists should play as one, while still retaining their own individuality, their own musical voice. In developing this concept, Nachmanovitch (1990) suggests that, in the act of performing with another musician, revelations emerge which neither musician would probably find in working alone:

> "It is as though we have become a group organism that has its own nature and its own way of being, from a unique and unpredictable place which is the group personality or group brain... There is another personality and style to pull with and push against. Each collaborator brings to the work a different set of strengths and resistances. We provide both irritation and inspiration for each other — the grist for each other's pearl

making." (p. 94-95)

In addition, another advantage of ensemble work (as discovered in my personal experience) is that it enriches one's solo work as well. Various musical ideas discovered in duo rehearsals, such as how one plays a waltz, or what the beats in a particular Spanish dance feel like, can be of great assistance in practicing one's solo repertoire, and vice-versa.

In the following chapter, we explore the winding methodological path taken during my study of communication between duo pianists.

Chapter Five

The Duo Piano Experience: In Search of a Methodology

"The nature of a work of art is not to be a part, nor yet a copy of the real world (as we commonly understand that phrase), but a world in itself, independent, complete, autonomous; and to possess it fully you must enter that world, conform to its laws, and ignore for the time being the beliefs, aims and particular conditions which belong to you in the other world."

A. C. Bradley[60]

A World in Itself?

The "world in itself" that Bradley speaks of implies a contextual logic that abides by its own laws. Whether these laws exist or not, the historical evidence (as discussed throughout Chapter One) does suggest that the difficulties involved in analyzing and understanding musical communication are generally shared — at least in the performing arts. Cohen (1996, Dec.) comments on major research trends to date:

> "...the most elusive of musical challenges to the investigator has been the performing experience itself. Acoustical laws have been formulated, refined, revised and interpreted from Pythagoras to Mersenne, Helmholtz and their twentieth century descendants, aural perception tests are continually being updated and re-evaluated, neuro-muscular correlates are being identified, key and bow strokes counted, breath capacity measured and personality profiles drawn up — all with hardly a dent into the

[60]1963, p. 5 (original version, Lectures On Poetry, published in 1909)

> nature of the experience itself or of those who create it.[61] This remains true, despite the considerable influence science has had on music theory and the way performers organize their physical resources."

Where does one begin, then, when available research methodologies have been tested only minimally in the area of communication between ensemble performers — a form of knowledge that is essentially aesthetically-based? In particular, how can research be conducted that is capable of respecting the experience as a whole as well as the integrity of the artists? Nachmanovitch, recognizing this problem, stresses that, "like any living entity, the system of musicians-plus-instruments-plus-listeners-plus-environment is an indivisible, interactive totality, there is something false about splitting it up into parts" (1990, p. 143). Nachmanovitch's concerns are shared by physicist David Bohm (1984), who asks how we can adopt effective methodologies that are able to resist dividing "things that are one and united" (p. 8).[62]

How do we "recreate" our "experience in word images" and keep from moving, in Clynes' terms, "like a spiral growing between the poles of

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[61]Cohen's point here brings to mind Denski's (1992) observation (as noted in Chapter Three) that "it would appear that academics... have neglected the music makers" (p. 33).

[62]Bohm continues by noting that reductive thinking (what he has termed *fragmentation*) is not confined to scientific methodology, but rather permeates all aspects of human discourse. As social beings, we are habitually dichotic. As a consequence, our experience of wholeness is often compromised. Bohm emphasizes that "humans have lost an awareness of what [we] are doing. [We] just keep on dividing automatically" (p. 8).

verbalization and differentiated direct experience" (1977, p. xxv)? There is, of course, the option to explore the route of quantitative analysis, which is, as Dabbs (1982) asserts, commonly "seen somehow as more respectable,[63] closer to the common understanding of science, implying more precision, and more readily analyzed by computers and summarized in tables" (p. 32). Yet, while it is true that certain dimensions of musical performance are clearly amenable to reductive study and statistical analysis,[64] it is unlikely that a quantitative perspective by itself can incorporate a sense of the experience of musical communication as a whole.

It is instructive that Bohm, in offering an alternative to available methods of analysis, speaks not of a certain methodology, but of approaching

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[63]It is then not surprising that researchers may be reluctant to experiment with non-quantitative methods, even when the context would suggest a qualitative approach. Rennie, Phillips, & Quartaro (1988), accustomed to the hypothetico-deductive research tradition, note their experience in employing the grounded theory approach (articulated later in this chapter): "In adopting the new method, we have had to abandon most of the canons of the hypothetico-deductive approach... This abandonment led us into what we now refer to as 'the period of darkness' wherein we were not sure that what we contemplated doing was credible, and were tormented with a dread that, even if we felt that the returns from the new approach were credible, peers within our discipline would rule otherwise" (p. 140). Of course, one could imagine a similar apprehension for a researcher, who, coming from the qualitative tradition, decides to conduct a quantitative study.

[64]as seen in Rasch's study (1988), where he has shown that one can measure a musical ensemble's precise timing of pitch entrances at various intervals in a piece (See also Chapter One).

a structure with a different "attitude" — that of *unfolding*[65] all of the differences:

> "All sorts of related differences unfold from a few principles. Rather than simply fixing a part and trying to connect it to a whole, you take the whole and it divides itself into *subwholes* (italics mine). That is the sort of thinking needed to deal with fragmentation." (pp. 17-18)

My study rests on precisely the issue of the interrelationship between the "subwholes" involved in a duo piano performance. Seen from this perspective, the subwholes include the musical text, the composer, the performers, the selected means of communication (sound, gestures and words), the coach, the audience (both present and absent, yet always there), and the affordances[66] as well as the interferences — both potential and actual

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[65]a concept commonly referred to in mathematics

[66]The notion of "affordances" was termed by J. J. Gibson (1977). In a nutshell, it refers to what the environment or an object "affords" a person or animal. Greeno (1994) describes affordances as "an interactionist view of perception and action that focused on information that is available in the environment" (p. 336). How does a person or animal perceive information in the environment? One example is a table — to a person, it is an object on which to place a dinner setting; therefore, the table "affords" the person a place at which to have dinner. To a cat, the table affords something to sit on or perhaps a place to jump from in order to get to a higher object; but a table may not afford a person the same, for it may break under the weight. Segalowitz (1997) extends the use of the concept of affordances by applying it to the "changing communicative environment" as it pertains to second language (L2) users (p. 101). In the act of communicating, Segalowitz holds that a highly skilled second language user will be more likely to demonstrate better skill in his/her use of affordances. Given that ensemble musical performance takes place in a communicative environment, one might infer that the more experienced a pianist is, the more the piano affords her; in other words, she may use the piano in ways that may not occur or be available to a novice pianist.

— that may take place. The thesis, therefore, kaleidoscopically treats the interweaving and constant interplay of these subwholes within a context that is understood as indivisible; each facet or subwhole is, by this definition, in a living relationship to all of the others.

The Search Begins

The Larger Picture

Over a period of approximately three years, M.T. (my duo partner) and I practiced, rehearsed, and performed publicly from a wide range of nineteenth and twentieth century four hand works written for one and two pianos (see Appendix A for a complete list). While neither of us are professional performers,[67] our experience had hitherto been confined largely to the solo and accompaniment repertoires. Our relative innocence in the duo piano field, as I will presently show, proved a distinct advantage in documenting a coherent picture of our work together.

For purposes of this thesis, we focused on a major multi-movement work, the Rachmaninoff Suite No. 2, Op. 17 for two pianos (a description of each movement can be found in Appendix B). Of the four movements of the Suite, the second movement (a waltz) has been chosen for detailed analysis.

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[67]In other words, we cannot be found on a music store shelf as of yet. M.T. is a music therapist, and I am an aspiring concert pianist.

However, where applicable, analytical references will be made to other movements of the Suite as well as to other works from our duo repertoire.

The Paradox of Experience

Paradoxically, our relative lack of experience as a team proved to be an enormous advantage — perhaps ideal — in identifying and documenting the unfolding of significant events in our process of communication. Since we were still at the stage of getting to know each other as performers, we were obliged to discover, experiment with, and evaluate virtually every step. More experienced performers would presumably be skilled enough to skip or ignore certain self-evident steps, which they would almost certainly take for granted because they know each other so well. Jazz pianist Sir Roland Hanna speaks of his long standing collaboration with bassist Richard Davis:

> "When you're talking about having been around somebody for thirty years... you're close to the way they think. Now maybe I don't know exactly...the way he thinks, but I am close enough to what he has been thinking in the past to have an idea of what he *might* play from one note to the next... I 've heard him enough to know *how* he makes his lines... I know in general the kind of statement he would make, or how he would use his *words*..." (Monson, 1996, p. 49).

Needless to say, had we been less skilled, the study would have difficulty getting off the ground, as it may have found itself enmeshed in the fundamentals of the music: searching for the correct notes, identifying rhythmic patterns and performance indications, not to mention attempting to master daunting technical problems. Regarding this last point,

Nachmanovitch (1990) has shown the ensemble experience can, for the moderately-advanced performer, contribute to the refinement of her solo technical skills:

> "One advantage of collaboration is that it's much easier to learn from someone else than from yourself. And inertia, which is often a major block in solitary work, hardly exists at all here: A releases B's energy, B releases A's energy. Information flows and multiplies easily. Learning becomes many-sided, a refreshing and vitalizing force." (p. 96)

Specifics of Equipment and the Data Collection Process

Video Tapes: This study had the advantage of taking place in our natural performance setting. The process of recording was unobtrusive in nature, because we were habituated to videotaping our solo and duo piano sessions — as well as performances — in the same performance hall.[68] Practice, rehearsal and coaching sessions were recorded for detailed analyses utilizing hi-8 video tapes and two Sony handicams as well as a fixed camera. One camera focused on M.T., the other on me. The recordings — 12 sessions in all — took place between January and May 1996. In general, each recording session lasted approximately two hours (for a total of approximately 24 taped hours). For a complete list of these recording sessions, see Appendix C.

A Chronicle: While seated at a Macintosh Quadra 840 computer beside a video monitor, I observed, listened to, and documented an all-inclusive

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[68]the Leonardo Project's *L'Espace d'interpretation musicale Yvonne Hubert*, Concordia University, Montréal, Canada.

exposition of our verbal and nonverbal communication, our repetition in working through problems in the music, and our sequencing. This took approximately 3 hours of typing, rewinding, and replaying per hour of video. It was important to draft whatever I saw and heard non-critically at this stage. In the writing, no attempt was made to edit or refine the style (see Appendix D for an example).

Trial and Error: The Search For an Appropriate Method of Analysis

The following outlines the process of searching for a way to best analyze our duo piano experience:

The Yes, But Now What? Approach: After completing the chronicle (my raw data), I found myself unclear as to what to do next. At first, I approached the issue somewhat reductively by supplying a checklist of ensemble performance aspects of the music. The point was to see if our pedalling, dynamics, timing, and our aesthetic sense of the music were similar. This checklist, detailed as it was, generated much data, yet, it was just that — data with no connection to the real experience.

The next step was to extract a journal, which attempted to make sense of the chronicle through an editing process. Writing the journal involved the following: extracting highlights for commentary on the main issues that arose, following the process of of working through these issues, identifying

the verbal and nonverbal cues that served as aids, and including implications and potential benefits for musicians and researchers in the future. Following a trial presentation, a colleague suggested that perhaps I had cued into a Grounded Theory approach without realizing it. This led to an investigation of the possible inclusion of grounded theory as a methodological guide.

The Grounded Theory Approach: In response to a perceived need in certain areas for emphasis on theory generation and discovery, sociologists Glaser and Strauss (1967) describe the main aim of grounded theory as an attempt "to free researchers... from the theoretical straight-jackets of a few 'grand' theories" (Henwood and Pidgeon, 1992, p. 103). Rennie et al. (1988) develop Glaser and Strauss' point that

> "Sociology suffers from deductive, armchair theorizing in which data are forced to fit theories in lieu of a more appropriate generation of theories from data." (p. 140)

As an "antidote" to the tendency to view qualitative research as nonscientific, Glaser and Strauss created the grounded theory method, which "yields access to aspects of human experience which are difficult, if not impossible, to address with traditional approaches to psychological research yet are inherent in the subject matter of psychology" (Rennie et al., 1988, p. 147). Being that grounded theory is designed for aspects of social interaction, it seemed logical to employ it in research involving communication between performing musicians.

As Beal (1997) explains, the grounded theorist does not limit herself to one method of gathering data. Rather, "it is a strategy for studying how individuals interpret their actions and situations" (Beal, 1997, p. 89). The grounded theorist's data may range from tape-recorded or video-taped interviews, transcripts, journals, or readings, to videos of interactions between individuals. At first, the techniques seemed consistent with the way in which I conducted my particular study (using video-tapes, and writing a chronicle and a journal).

What exactly does the grounded theorist do? In brief, when data collection is complete, the method involves the following (Charmaz, 1983; Rennie et al., 1988):

— Coding: the phase in which data is categorized and sorted. By use of the "constant comparative method" (termed by Glaser and Strauss), "investigators systematically categorize data and limit theorizing until patterns in the data emerge from the categorizing operation" (Rennie et. al, 1988, p. 141). Charmaz (1983) describes two forms of coding: "initial coding" and "focused coding". In the initial phase, "researchers look for what they can define and discover in the data" — a technique which will hopefully lead to more ideas and issues in the data (p. 113). In the focused stage, categories are developed by applying one's limited set of codes — from the initial phase — to larger amounts of data (p. 116). The researcher attempts to 'saturate' her categories within as many appropriate cases in order to demonstrate their

relevance.

— Memo Writing: Memos are defined by Charmaz as "written elaborations of ideas about the data and the coded categories" (1983, p. 120). Memos have many functions: guiding one's assumptions, raising the conceptual level of the research by encouraging the analyst to go beyond simply categorizing to noting emerging themes, identifying possible relationships between categories, thereby preserving potential ideas for possible later discussion, and providing a record of the researcher's ideas in developing categories (Rennie et. al, 1988, p. 144). Before theory writing begins, the researcher determines her *core category*, which is typically abstract, but not vague.

— Writing the Theory: In this stage, the researcher sorts through her research memo(s) — in which she wrote her ideas of potential central categories and their relationships with other categories. New memos may then be added in response to speculations of the categories' relationships. Essentially, recording the core category and its interrelationships summarize the grounded theory (Rennie et al., 1988).

Trying On the Mask of a Grounded Theorist

After applying the stages of grounded theory to my work — categorizing what occurred in the videos (coding) and finding emerging patterns — something crucial was still missing. Even though there was a

long list of descriptive categories, it seemed to give little direction towards my goal of explaining the *process* of communication between duo pianists. Therefore, I continued my search into various qualitative methodologies, finally discovering ethnography — a participant/observer approach.

The Missing Shoe: A Modified Ethnographic/Metacommunicative Approach

Ethnography is the "comparative, descriptive analysis of the everyday, of what is taken for granted" (Toren, 1996, p. 102). Commonly identified with anthropological studies, ethnography proceeds from participant/observation, whereas "the ethnographer participates actively in the research environment, but does not structure it... the aim being to depict the activities and perspectives of actors" (Bannister, Burman, Parker, Taylor, & Tindall, 1994, p. 34). Ethnography, a "multimethod form of research" is "concerned with *experience as it is lived* (italics mine)" (p. 34).[69] Participating in daily lives for a period of time, the ethnographer observes what happens, listens to what is said, asks questions, and studies documents. In other words, she is "collecting whatever data are available to throw light on the issues(s) with which the research is concerned" (Bannister et. al, 1994, p. 34).

The ethnographic process is characterized by the following: (1) gathering data from a range of sources (interviews, conversations,

[69]This point was a particular attraction for the direction of the present study (i.e. the process of communication as it unfolds), because it allows for a flow of events as they take place.

observations, or documents); (2) studying behaviour in everyday contexts rather than experimental conditions; (3) using an unstructured approach to data gathering in the early stages, so that key issues can emerge gradually through analysis; and (4) comprising an in-depth study of one or two situations (Bannister et. al, 1994, p. 36).

In the present study, the first stage — gathering data — involved videotaping our sessions and finding relevant literatures that could shed light on the data from the areas of nonverbal communication, psychological studies of performance, and what performers have said about their ensemble experience. Regarding the second point, and as noted previously in this chapter, even though video cameras were present and we were onstage, as pianists we were in our natural setting. As suggested in the third stage, practice, rehearsal, and coaching sessions had no imposed structure (other than the knowledge that we were preparing the Rachmaninoff for a performance — we chose which movements to work on at the time of rehearsal). The fourth stage focuses on an in-depth descriptive analysis into (a) our unfolding process of communication as told from a metacommunicative perspective, and (b) our process of internalizing the cues. Metacommunication, defined by Fogel, Lyra, & Valsiner (1997) is "a reflexive process in which individuals communicate about the way in which they communicate, in the past, present, or future" (p. 66).

Below is the final form of the analysis — a twin

ethnographic/metacommunicative perspective that seems most consistent with the research aims of this study. The analysis, essentially a refinement of the journal, is comprised of the following:

(1) A situational background — explaining factors which may have contributed to how we communicated on a given day.

(2) Identity of the issue at hand — whether of a musical, textual, cognitive, physiological, or environmental nature.

(3) Type of cue used by the pianists.

(4) Working process towards a resolution.

(5) Implications for musicians and/or researchers that are drawn from the experience.

(6) Summary: placed at the end of each session, a summary captures the essence of our experience — the types of cues used, what we learned about the music and each other, comments on our internalization process, and significant philosophical or psychological aspects which came out of the experience.

Chapter Six

The Evolving Process of Communication Between Pianists: A Qualitative Analysis

KATHLEEN. I don't know what you're saying half the time. You realize that.
HARRY. Communication is a difficult factor.
KATHLEEN. Say that again.

— from David Storey's *Home* (1970, p. 56)

Prelude to the Analysis

What follows are unedited excerpts from the notes of a participant observer into the process of communication between two duo pianists (M.T. and C.G.) during practice, rehearsal and coaching sessions.[70] I am therefore demonstrating how the process *might* work. It would be premature at this point to offer a model for other ensemble teams. Rather, my notes are intended to illustrate how certain crucial aspects of verbal and nonverbal cues merge in the process of internalization — a process that, when successful, culminates in an integrated, dynamically-focused whole by which one's awareness of the process becomes subsumed.

Given the vast amount of technically-complex detail involved, I will not attempt to deal with every single measure and every issue that arises. Rather, I will focus almost exclusively on key issues which relate to the

[70]For a description of what occurs in these sessions, see Chapter 4.

cultivation of effective communication between performing musicians. When appropriate, the text is supported with musical excerpts.

An Insider's Qualitative Analysis of the Evolution of a Waltz

January 17, 1996, Practice/Coaching Session

Background: In this session, we were in the initial stages of the piece, having practiced it individually and together on a few occasions. We began two measures before Tempo I (see Figure 6.1). Initially we felt completely out of sync with each other — a terribly frustrating experience. We blamed the problem on our very different daily experiences — M.T. working with people as a music therapist and me seated in front of the computer writing my thesis. As it turned out, the problem derived from the music itself: the phrase begins on the upbeat. Without a strong downbeat (in piano II only), the meter can easily shift to a four beat from the intended three beat pattern.

Issue: The technical structure of Tempo I can be deceiving: by allowing one's hands to enter strongly on the first note, one can easily miss the ensuing downbeat. For the unaware, it *feels* correct but causes the ear to misread the text.

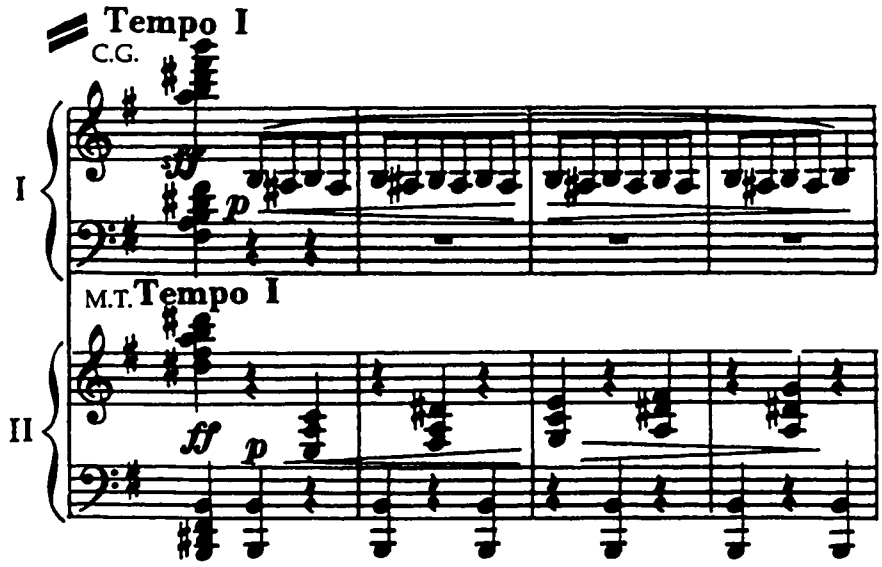

Figure 6.1

Process: It was important initially to emphasize the first beat of each measure to give us the waltz pulse. Later, it will be less marked, with the emphasis placed generally on or towards the second beat. We went through the same passage, this time with M.T. bouncing off her first beats while holding the pedal. Our performance coach had us aim for lightness of pulse while consciously playing a waltz. Playing in this way gave us a structure that immediately cued us into the feeling of a waltz and caused us to synchronize our attacks.

Cue: Tempory Designed — Getting off the first beat.

Implication(s): For the unaware reader, following the score literally can be

misleading. Very often, there are built-in traps in the notation of even the best composers — traps that come from their need to play with the structure, change it, make it move. These traps exist when one translates the visual representation of the music into sound, because the text is composed of vertical barlines, whereas sound moves across time horizontally, oblivious to imposed barlines. In order to get past Rachmaninoff's subtle notation, we had to return to fundamentals here — the basic waltz beat. Only then were we communicating the intended sense of lightness in the music.

Background: We played a more familiar passage — No. 16. By keeping the music light, bringing up the tempo, and cuing into a waltz, the music flowed well.

Issue: The music obviously is not a teacher, but metaphorically it can become one.

Process: Our coach suggested that we use this passage at the faster tempo as our model for working on the rest of the piece, practicing it in small sections at a time. Though the session ended, this is how we were to continue our process of rehearsal.

Cue: Purely Musical — This particular passage is a cue into how to play the rest of the piece.

Implication(s): Musicians tend to work from the logic of *felt sound* —

organizing the performances in terms of what their hands and ears are experiencing rather than a literal reading of the score. M.T. and I ultimately did the same — no matter what was written, we sensed the movement of a waltz. In this way, we remained synchronized with each other and, in turn, with Rachmaninoff.

Summary (January 17, 1996)

Being in the initial stages, we had to work on the basics of the music: getting our technique down and finding the feel of the waltz. Our first cue (Temporary Designed) — which was bouncing off the first beats of each bar — simplified matters, because we had a constant on which to rely. Later the visual action of bouncing will be less pronounced.

Our second cue (Purely Musical) is the music itself — the passage that worked is a teacher for the rest of the movement. In our practice, when we get to a section that does not flow well, we can go back to our cue to give us the feel of what we want.

January 22, 1996, Rehearsal/Coaching Session

Background: Today we began by playing the movement in its entirety — our first time for our coach.

Issue: M.T.'s tendency was to play her chord on the second beat instead of the first (see Figure 6.2).

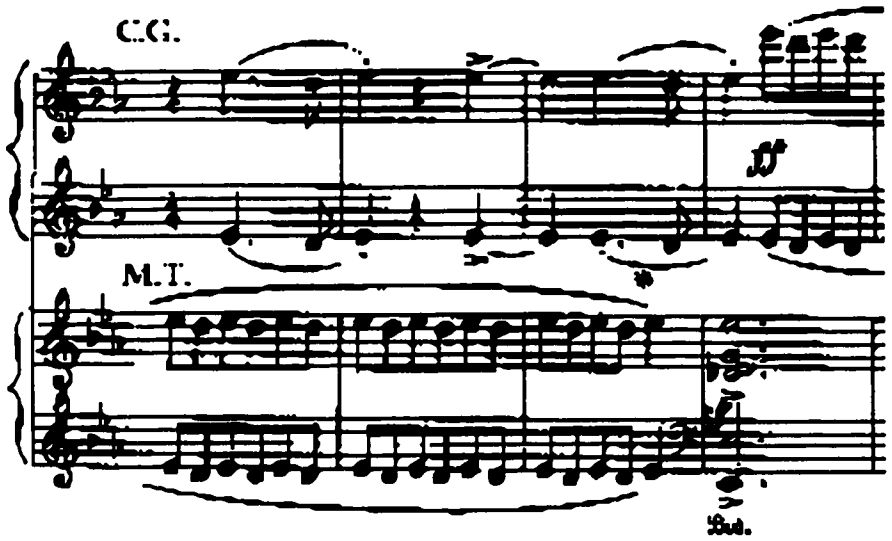

Figure 6.2

Process: Our coach asked M.T. to deliberately play it wrong — entering on beat two instead of one a few times. Interestingly, this solved the problem. Because she had difficulty being purposefully wrong, as a result she played her chord on the correct beat.

Cue: Temporary Designed: Deliberately entering on the wrong beat forced her to change her perceptions of the phrase.

Implication(s): This has to do with the question of cognitive organization. Having been obliged to rethink the music and by deliberately coming in at the wrong time, M.T. achieved a measure of control. If she continued to

approach the music from her initial perspective — i.e., without awareness — she might continue to play it incorrectly. It seems to be ingrained within us to reflexively respond to a problem in the same way, yet what was needed — at least in this instance — was a radical re-structuring of even the most logically-perceived solution to the problem.

Background: Both piano parts have a similar problematic passage — Piano I (see Figure 6.3a) and Piano II (see Figure 6.3b).

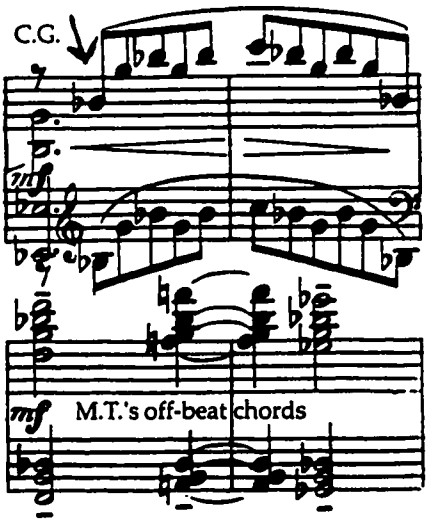

Figure 6.3a

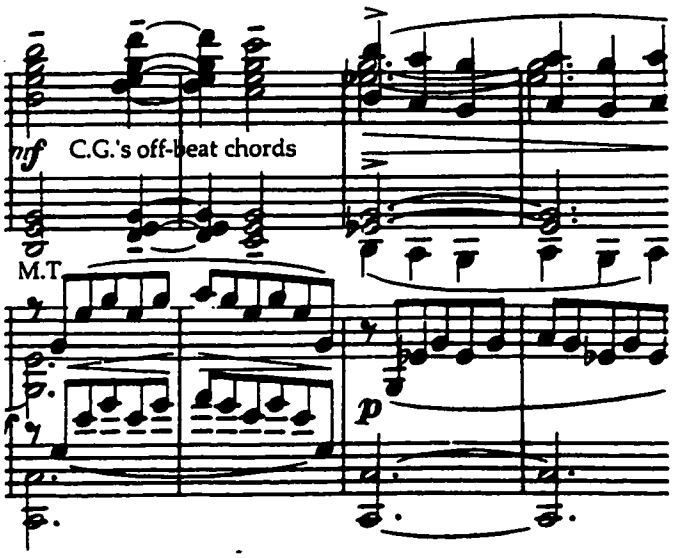

Figure 6.3b

Issue: The difficulty here for me involved synchronizing jumps and rapid

patterns while my partner enters on off-beats.

Process: Our coach suggested that I gliss[71] silently along the piano keys for the jump, not thinking of the Bb to G as separate actions. I then moved both hands simultaneously while listening for the first beat of the next measure. By simply shifting my arm while glissing along, and then breaking (rather than moving my entire body — an unconscious miscue), I would have the crescendo/diminuendo effect that is written in the score. Therefore, my problem was one of physical organization.

Next we went through M.T.'s passage. She was to listen to the bass note, then shift. When playing the passage again, we heard M.T. accenting her third beats. To counteract, I was to emphasize the first beat, which caused her third beat to ring instead of being heavily accented.

Cue: (a) Temporary Designed — Consciously shifting my arm gave me the character of the music.

(b) Temporary Designed — Emphasizing the first beat caused the accent on the third beat to disappear.

Implication(s): Rachmaninoff's music typically contains sudden shifts. When these occur, if the body shifts with them, notes will be missed and the

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[71]Gliss., an abbreviation for "glissando" or "glisser" (Fr.), means "to slide". A glissando, as defined in The New Harvard Dictionary of Music (Randel, 1986), is "a continuous or sliding movement from one pitch to another" (p. 342). Using a silent glissando (i.e. on the surface of the keys) allows for accuracy in the jump, because there is a fluid motion rather than lifting the fingers from the keys.

rhythm is thrown off. The body must be stable while only the arms shift, and the fingers quite firm.

Background: For the last part of our session, we moved on to ensemble detail: mainly coordinating our pedalling and bringing up the tempo. Our coach drew our attention to the dynamics — perhaps we overlooked something in the music before that would cue us into the tempo. We started at the beginning of the movement.

Issue: Blocks occurred in our ability to bring it to full speed. What we found was a tendency to increase our speed in loud passages and to decrease our speed in soft ones — a tendency common to many musicians. In the space of 8 bars (at the beginning) we go through a vast range of dynamic markings — from forte to piano to mezzo forte to pianissimo.

Process: Bringing up the tempo made the music light while illuminating the sections which still needed work (such as the bottom of page 10). We also slowed down in the quieter passages. At the beginning, the marked forte is not meant to be heavy — it is solid, but then diminishes. To get this effect, M.T. used the damper pedal for the first beat and lifted it for the second. In my running passages, it also helped to vibrate the pedal — this cleared the sound, though my fingers occasionally had difficulty keeping up with the increased speed.

M.T. noted that the heavy stress on the first beat obstructed the waltz rhythm. She proposed that we hear the beats across the bar line — a circular movement of the music. To get this effect, we experimented with scatting patterns, thus giving ourselves an internal reference. This, coupled with our coach's conducting caused the music to soar. We could now use these pages as a working model for the rest of the movement.

Cue: (a) Visual Miscue: Reading fortes and diminuendos in the score out of context may cause the tempo to speed up or slow down.

(b) Temporary Designed: Scatting the pulse relayed our aesthetic intentions to our bodies, organizing us accordingly.

Implication(s): In order to establish one's intended emotive tone and character of the music, it is important to pay the closest attention to dynamic changes. In the process, one can deal with problems that present themselves when these changes are expressed. As noted earlier, simply seeing a dynamic change — for example, a pianissimo on a page — communicates a message to the body to slow down.[72] It was also discovered that increasing the speed highlighted problem areas that could not be anticipated at a slower speed.

Summary (January 22, 1996)

Verbal Communication: Aside from our coach's guidance, what stood

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[72]I have seen this tendency demonstrated by my students on many occasions.

out in our verbal communication in the sessions was M.T.'s remark concerning the circular motion of the music. Her verbal cue led us to experiment with scatting patterns (a Temporary Designed Cue), in order to form an aesthetic reference for more precise articulation.

Nonverbal Communication: Being that we were in the experimental stage of this movement, we devised a number of Temporary Cues: (1) M.T.'s act of deliberately entering with her chord on the wrong beat; (2) emphasizing the first beat, which caused the third beat to ring out; (3) experimenting with scatting patterns; and (4) silently glissing along the keys. The range of dynamic changes in the score, which led us to inappropriately speed up and slow down, was a Visual Miscue.

February 14, 1996, Rehearsal/Coaching Session

Background: M.T. and I attempted to play the entire waltz from beginning to end. Again, we experienced the same tendency to be at odds with each other. In fact, we did not always feel we were playing the same piece, let alone a waltz. In order to synchronize our efforts, we recalled our previous rehearsal and immediately set to work on the textural details, including the gestural feel of the waltz and dynamic changes.

Issue: Typically, the trill in Piano I at the beginning (see Figure 6.4) tended to

sound laboured and heavy. Later, M.T. has a similar trill passage at a point where we reverse parts.

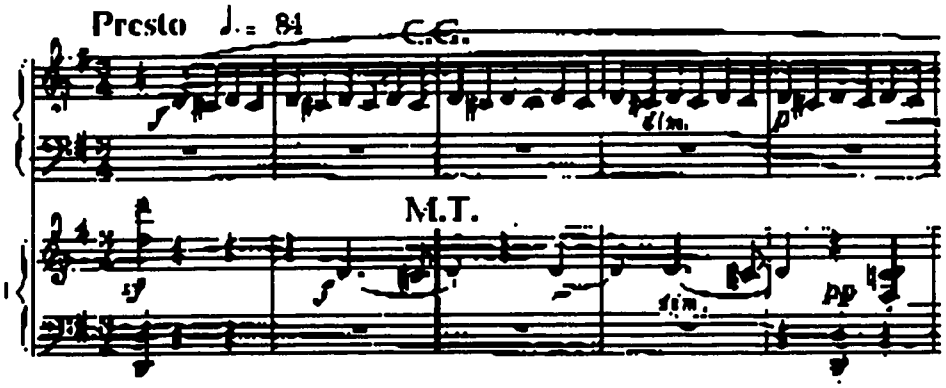

Figure 6.4

Process: We decided to imagine playing the passage as a melodic pattern, instead of a two-note trill, in order to give it a feel of motion. This caused the sound to rise and fall quite melodically. It also made it easier to perceive the trill as the beginning of the piece, despite the fact that it begins on the second beat. To avoid an unwanted accent on the second beat as well as the tendency to enter late, I played the first beat (D octaves) with M.T.. Playing in this manner led to a communication of stability, giving us an immediate empathy with Rachmaninoff's score. This latter point is important, since my hand structure —while very supple— tends toward weak joints, whereas M.T. has very firm fingers, giving her a more naturally pronounced quality. Playing together, I reflexively resolved the problem by making adjustments in my fingerings, hand and arm positionings.

Cue: (a) Metaphoric: Even though I am playing a repeated two-note trill, by imagining it as a melodic pattern, I allow the music to naturally rise and fall in undulating waves, thereby avoiding a laboured articulation.

(b) Temporary Designed: Playing the first beat with M.T. eradicated my former tendency to both accent and enter late on the second beat.

(c) Temporary Designed: Changing my physical approach gives me a sense of strength and security.

Implication(s): We became aware of the importance of being effortless. For example, when watching concert pianists or figure skaters performing very difficult moves, we sometimes are amazed at how effortless it seems — a quality of virtuoso performance. When the music sounds laboured to the audience, it is certainly guaranteed to feel equally laboured to the performers. This of course causes a block in the natural flow of the music. Each of the above cues aided in eliminating our initial sense of struggle.

Background: There is another tricky section shortly after the beginning (see Figure 6.5).

Issue: For eight measures, Rachmaninoff seems to wander away from a waltz. This is a section of cross-rhythm — a pulling of the beat across bar lines. What is particularly difficult is that occasionally M.T.'s first beat falls on a rest, while my first beat is usually the end of a phrase in one hand, going against the beginning of a phrase in the other hand, and vice-versa over

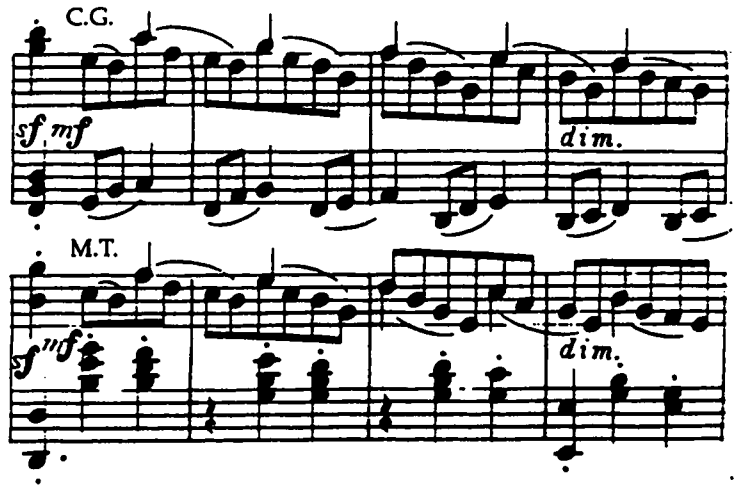

Figure 6.5

alternative bars. What is given is the two upbeats of the waltz pulse in M.T.'s left hand.

Process: M.T. described my playing in this section as too assertive. This may have been because I was initially at a loss on what to say. It sounded laboured, confused, with a tendency to slow down as I tried to fit in all of the notes on time. Once again, what helped me were radical adjustments in my physical and aesthetic approach.

Cue: Visual Miscue: The visual complexities of the musical score can adversely affect synchronization.

Stock: Going to M.T.'s piano helped us work on our approach to the articulation.

Implication(s): Reorganizing my physical and aesthetic approach — that is,

my expressive movements — freed me to attend to these complexities with greater precision and depth.

By the same token one of us would routinely stop playing in order to watch the other play. The advantage of doing this is that it allows us to come to an aesthetic consensus on how we believe the music should sound. By the simply observing, we can, for example, resolve problems with our articulation and pedalling. We also learn much from each other in the process of exchanging our ideas about the music. It also helps us understand the other's actions or habits which later allows us to anticipate each other in performance.

Summary (February 14, 1996)

We mostly worked on performance choreography in this session: the specific gestures and techniques that allow us to carry through what we desire in the music. It is helpful and important for ensemble musicians — particularly those playing the same instruments — to watch the other person play and to decide on which movements to coordinate. Doing so gives us a structure to fall back on in case of contingencies during performance. For example, imagine a figure skating pairs performance. If something happens to one partner (she falls, misses her landing, gets off-beat, whatever), the other one brings her back into rhythm. All is not lost and they finish the dance. This is perhaps easier for the skaters who usually are within arms-

length from each other. As duo pianists, we have to help each other out and bring the other one in even though we do not have the available means of visual cues. Therefore, it cannot be over-emphasized how extremely important it is to translate the musical text into immediate aural communication. Once the music begins, there is only the sound to rely upon.

Verbal Communication: In the passage where my sound was laboured, I communicated what M.T. described as "too assertive". Again, what cleared up the sound was simply keeping my fingers firm.

Nonverbal Communication: Imagining a melodic pattern instead of a two-note trill was a metaphoric cue. Playing the first beat of the waltz with M.T. was a Temporary Designed Cue. Whenever stability was lacking, it was necessary to devise the cue of keeping my fingers firm. When the text was misleading, it acted as a Visual Miscue. By watching each other play, we developed a Stock Cue — our aesthetic agreement of the articulation.

May 17, 1996, Practice/Rehearsal Session

Background: Since we had a large gap between sessions of the Waltz, we used our time as an opportunity to test out what we had lost and what we had kept from previous sessions. We found that we were "rusty" throughout, though some parts flowed very well. I also had a cold.

Issue: When things went off in a passage (top of page 11), I thought it was because I could not hear M.T. very well due to my cold.

Process: We did not work very long on the passage. The problem seemed to take care of itself.

Cue: Unconscious Miscue: In watching the video, I see that in this passage, my hands are pulling up after I play the chords. This affects the rhythm. It looks as if I do not have enough time to play all of the notes.

Implication(s): Even though I blamed the difficulty in the passage on my cold, it was actually because my hands were pulling up from the keys, an assumption that miscues.

Summary (May 17, 1996)

There is very little to say regarding this session, since it was a practice to see what we still had "in our fingers" from previous work. The video was very helpful in identifying the cause behind the difficult passage.

May 22, 1996, Rehearsal Session

Background: In our initial runthrough, many things came together that had not in other sessions. For one, my hands were no longer pulling up as they had in the previous session. We also managed for the first time to achieve a

relatively satisfying measure of continuity and flow. Both of us, however, had the sensation that the piece lasted forever. Also, I commented that I felt that M.T. was far away from me (though the pianos were at their normal distance) and the tonal quality sounded like a bad cold. For the most part, however, this session was a great improvement from the previous one.

Issue: Beginning with the last two measures and continuing for the next six, there are accents every second beat — a compositional technique for maintaining musical tension in triple time that can create serious problems in synchronization.

Process: We began by purposely accenting the first beat of each measure. This lightened the beat, but M.T. felt that it still was not right. Our imposed accents continued to go against the flow of the music. We then played it while thinking in groups of two measures, which improved their feel somewhat. However, M.T. noted that we were "banging" on the first beats instead of bouncing off them. After a few more adjustments, we agreed that we were "on" rhythmically and aesthetically.

Cue: Temporary Designed: Our first designed cue was to accent the first beat of each measure. Doing so, however, did not solve anything. Counting two measure groups was our second Temporary Designed Cue which did aid us in playing the music together.

Implication(s): Once again, we fell into the composer's trap of pulling the beats over the barlines. On hindsight, what may have helped much more

than counting is scatting the rhythm. Placing unnatural accents on the first beats of each measure did little to help us. However, after M.T. suggested playing with lightness instead of banging, the music danced — perhaps this was the real reason for the improvement instead of changing the way in which we counted.

Background: Getting from the bottom of page 13 to the top of 14 has always posed a degree of difficulty (see Figure 6.6).

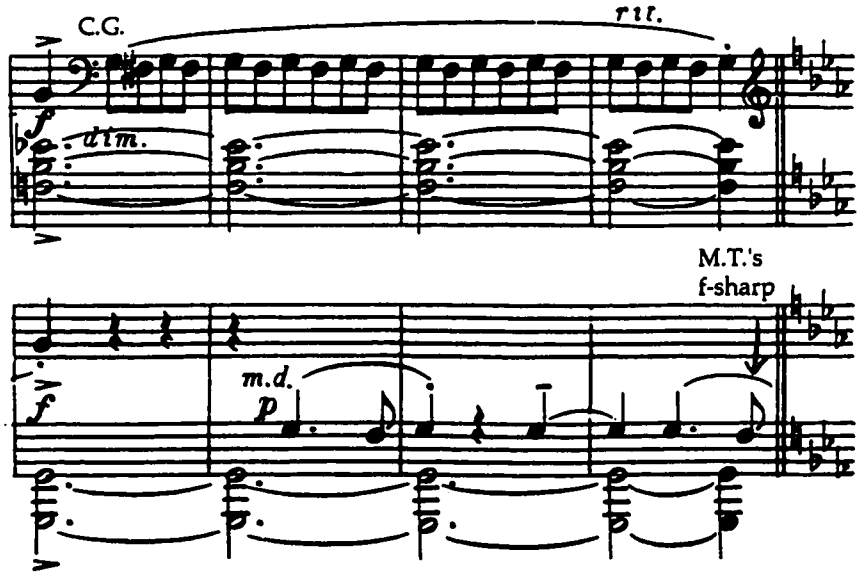

Figure 6.6a

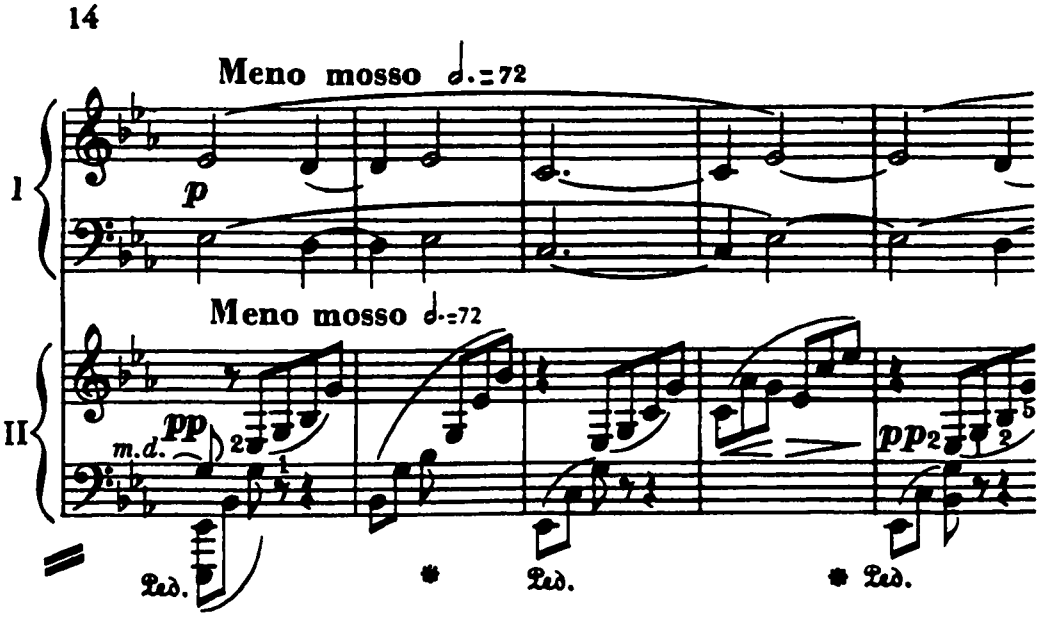

Figure 6.6b

Issue: The page turn is an issue here, because it is in an awkward place. The first measure begins with a change in tempo and mood. While Piano II keeps the waltz beat, the simple melody of Piano I, stretching as it does over beats, is more elusive.

Process: We began on the top of 14 to get an idea of what we aesthetically desired in the music. M.T. decided to play just the three main beats instead of her entire arpeggio for now. Amazingly, doing so caused my fingers to become noticeably more focused and playing together was easier. I did not lose track of where I was in the music.

Next we started at the last 4 bars of page 13 and continued only to the

first beat of page 14. Our goal was to hear the change in harmony. Just before the page turn, Piano I has a staccato on the third beat, while Piano II has a legato F# leading to a G on the following page. M.T. said that for now, she has to lift the F# instead of making it legato in order for us to be together on the first beat of page 14. However, I suggested that we try it as written without the break because something was off. In watching the video, I noticed that she was not only lifting the note, but pausing a split second before the F#. Pausing in a section of the music that is already uncertain to us could have been the root of our problem from the beginning. We attempted the measure without the articulation break, while I listened carefully for her F# as soon as I released my staccato. The first try did not work, but the second time we were right on. We could hear where the beat was going as well as the change in harmony. I also discovered that it is best to wait a measure or two before turning the page.

Cue: Temporary Designed: M.T.'s simplification of the music (playing only the three main beats), which cued me in to the fundamental pulse.

Purely Musical: Our way to get from page 13 to 14 successfully is: to listen closely to each other; for me to get off the staccato in time to hear M.T.'s F#; for M.T. to not pause before her F#; and for me to not turn the page right away.

Implication(s): There was a cause and effect relationship between the way in which M.T. and I played: her simplification of the beats caused my fingers to

fall sharply into focus. Very often in ensemble work, we think in terms of cause and effect. For example, the fact that she paused before the F# made an already uncertain passage more shaky for both of us. Even my mood on a given day may be reflected in my manner of playing, and will invariably affect M.T.'s performance.

Background: In Section 10, M.T. has a running passage from the bottom of the piano to the top while I have strong chords. A few measures later, I have the running passage while she has the chords.

Issue: My tendency was to speed up through my running passage, and M.T. would come in too early with her second chord, which made me go faster to keep up with her. In our chords, I did not hold the pedal for the chords with one beat, whereas M.T. pedalled her, which may have caused her not to hear my beats distinctly. There was also a noise in my pedals that bothered M.T.

Process: We practiced alone for a few minutes and then tried again. In our second run-through, we played beautifully together. However, our third time was disastrous. We even missed notes. In our fourth and final attempt of the day, I was behind in my chords, M.T. anticipated hers, and I rushed my beats to catch up with her. Frustrated because it had gone so well before and that we could not replicate what had worked, we gave it up for now and opted to rehearse the Romance.

Cue: Visual Miscue: When I saw all of those little black notes, I sped up.

Also, being marked ff (fortissimo) and con passione — also a visual miscue — an unaware or undisciplined musician could conceivably get carried away. **Implication(s):** Our work in this passage illustrates a very real part of ensemble work: the fact that we came to no solutions at this point. We played this passage wonderfully — once. However, we did not understand *why* it worked for us. Obviously the music had not been fully integrated. It can sometimes be helpful in such situations to shift one's focus, and then come back to the piece later with a fresh perspective.

Summary (May 22, 1996)

Though definite progress had been made since previous sessions, there were a few passages which were not anywhere near performance calibre. At the beginning of the session, we were struggling with counting the rhythm in order to stay together when there were pulled beats. If we had scatted the rhythm instead of thinking in numbers, we perhaps would have lessened our troubles immensely. Doing so would have given us a direct, aesthetic relationship with the passage. Our act of counting the numbers aloud, then, may have interfered with our ability to articulate the brilliant character of the passage.

M.T.'s simplification of the music opened up a direct communication with my fingers, causing them to focus. This is particularly significant, given my unfortunate habit of collapsing my double-jointed fingers while playing.

Collapsing the fingers generally weakens them, resulting in the rhythm being thrown off or unclear at times. Focusing my fingers kept me from getting lost in the music.

The way in which M.T. and I chose to work on an awkward page turn is important. Listening carefully to the harmonic changes and resolutions taking place gave us something to do musically (i.e., a factor innate to us) instead of worrying about the page turn. Instead of imposing ourselves on Rachmaninoff by counting the beats aloud, for example, we let the music guide us with its natural flow.

Even though the passage is not integrated, there are important points to be made. It is interesting that seeing the large number of little black notes on the page caused me to speed up and play louder. This demonstrates the powerful influence of the music's visual representation on one's physical organization. My initial reaction was to tell myself to play these notes as fast as possible to fit them all in. This, of course, gave us little hope for playing in sync. To reach an aesthetic agreement on this page, what also must be worked on is the synchronization of our pedalling: we must eventually decide on how much pedal to use and when. In summary, our problems in this passage illustrate the complex interactions involved in translating a musical score into living sound — particularly if one wishes to achieve a measure of consistency. We were able to play the page beautifully once, but could not replicate what we did; simply put, we were not sure *why* it had worked.

Because of our frustration, we felt it would be counterproductive to keep searching for solutions. Instead, we shifted our attention to playing the following movement (Romance).

May 29, 1996, Rehearsal Session

Background: After playing through the entire Waltz, we reacted by laughing. Much of it was energetic and dancing, but there were still a few places where we experienced a break in the flow. What we noticed is that — more often than not — our problems were due to involuntary changes in tempo and texture. M.T. suggested that we work through the Waltz backwards — section by section — temporarily ignoring marked tempo changes.

Issue: Working backwards highlighted some interesting developments. M.T. kept stopping because she was counting in two instead of three. The video told all: I saw M.T. comfortably counting in three until texture and character changed — at which point she shifted to chewing her gum rhythmically in a perfect two beat.

Process: I suggested that, instead of counting in three, that we think only of the first beat of each measure. M.T. tapped her left foot on each of the first beats. Indeed, playing in this manner increased the flow of the music and gave it a lighter character. However, M.T. complained it made her feel

"insecure". On the video, it sounded more secure than previously. I commented that there was a nice continuity now. However, M.T. wanted to try it again in three, to make sure we were together. When we played through the page again, counting in three, it was noisier than before, was not as flowing, and seemed to drag at one point. I suggested that we try emphasizing only the first beats again. We were unsure at times, yet the piece still moved. My arms were dancing during the long notes (allowing me to keep in time with M.T.), and the music felt natural — so natural that we continued to the end of the Waltz with virtually no interruptions in the flow.

Cue: Visual Miscue: This includes each of the textural changes in the music. Perhaps not miscues to other musicians, for some reason, when we see them, we often change the character of the music drastically.

Unconscious Miscue: M.T.'s gum-chewing may have caused her beat to switch from three to two.

Implication(s): In this session, we encountered a classic problem universal to almost all musicians at one time or another: the tendency to change our physical and mental organization (and thus the sound) because of a visual change in the musical text. As a result, the flow of the music was interrupted, and, for us, it was a challenge to stay in sync during each change. It is interesting that, even though M.T. was counting in three, when she got to page 14, her gum-chewing told the real story: at that point, she felt the music in two. With our mismatched aesthetic hypotheses — her counting in two

and mine in getting off the first beat of each measure — synchronization was unattainable. By following M.T.'s suggestion of working backwards, section by section, we developed our aesthetic ideas of how we heard each textural change and experimented with them.

Summary (May 29, 1996)

Because changes in the texture were problematic, it was necessary to match our aesthetic hypotheses. If I heard a particular section in one way, and she in another, even if we were in perfect time, we would neither feel nor sound together. What we worked on today was experimenting with different aesthetic visions while maintaining the steady waltz beat. An example is when we tried emphasizing the first beats of every measure instead of thinking in three even beats. It did not feel secure at first because we were trying something new. We went back to our old way of counting in three, but the sound was noisy, heavy, and dragging. After testing these visions, then, we opted for jumping off the first beats of each measure. The result is that we danced and kept a flow to the end of the waltz — even through a series of textural changes. Aesthetic agreement had been achieved.

June 6, 1996, Rehearsal Session

Background: We felt ready to test the Introduction and the Waltz in rehearsal. Playing through the movements nonstop gave us an idea of what still needed fine-tuning.

Issue: Our old rhythmic problems in the Waltz surfaced again.

Process: Instead of moving off of the first beat, as we had formerly agreed, M.T. said that she wished to count every beat — at least for now. Taking it from four measures before a page turn, we strayed from the beat for two measures, but were able to recover for the rest of the passage. However, further on, we once again fell into gauging out each beat relentlessly. We discussed the page turn, and I recalled our previous work of listening to the harmonic changes between the parts. I told M.T. that I would carefully follow her voicings at the turn, in the hope that the problem might resolve itself. It did: we got through the page turn with no further complications.

Cue: Purely Musical: Listening to the harmonic changes cues us into being together aesthetically and rhythmically in the page turn.

Implication(s): Though most of the Waltz flows well, the passage still trips us up on occasion. However, what is significant is that there was a sign of internalization taking place when we cued ourselves once again into listening to the harmonic changes. This brought us together. What was not yet internalized is the way in which we *feel* the passage — in equally-stressed

beats rather than as a genuine waltz. We need to let go of the crutch of counting on every beat, because the music dances naturally without it.

Background: At the end of our session, we played through both the Introduction and the Waltz.

Issue: This was our first time of going from the Introduction to the Waltz without counting aloud before the Waltz.

Process: We had determined that M.T. would nod her head for us to begin the Waltz after the end of the Introduction. We came in together on time, but I did not feel ready (no surprise, since this was our first time at full steam). However, this did not affect the performance adversely. Finally we were assured that the Waltz is becoming performance-ready.

Cue: Stock Cue: We decided that M.T. should nod her head before beginning the Waltz.

Implication(s): Despite some residual problems, our progress has been encouraging. Now that technical aspects have been ironed out, the enjoyable part of ensemble work can take place — playing around with the character of the piece, improvising off each other, experimenting with dynamic changes, and listening to each other more without having to worry about technical difficulties.

Summary (June 6, 1996)

Many things fell into place in this session. We were encouraged by our pre-performance of the Introduction and the Waltz. When faced with the page turn, what freed us was simply remembering what had worked in the past: listening to the harmonic changes (a Purely Musical cue). It was fun to create our Stock Cue (M.T.'s head nod), because it means that we are closer to being performance-ready. It is often an ensemble aspect that is determined after the fine details of the music itself have been ironed out.

June 8, 1996, Coaching and Rehearsal Session

Background: Our coach was able to attend part of this session. Because the ability to go smoothly from page 13 to 14 has, for a seemingly endless time, been our nemesis, we asked our coach for his suggestions.

Issue: What our issue turned out to be was finding a common internal pulse.

Process: Our coach suggested that we begin by physically exaggerating a waltz pulse, swinging our arms — and at times our bodies — to the beat.. When we played our nemesis page, my arms were swinging, and M.T.'s playing became more rhythmically-alive and precise. Her comment was that it was not hard to play the page this time.

Cues: Temporary Designed: Swinging through the beat cued both of us into

establishing a strong internal pulse.

Implication(s): The simple gesture of swinging my arms communicated the internal pulse nonverbally. Though M.T. could not see my arms, she did feel a definite sound quality, which helped her to play more musically Neither of us were waiting on each other in the music, because we finally had a pulse to keep.

Background: Next we went to the beginning of the Waltz, our focus on keeping the continuity.

Issue: Before we began, we asked our coach how we should count the beats. M.T. commented that she was confused with thinking in two bar units, as I had suggested in a previous rehearsal.

Process: our coach said that we should hear it in one (i.e. emphasizing the first beat of each measure). However, the first beat is felt as "up". We are to get off the beats, which will keep it lively. Instead of thinking two-, three-, four- and five-bar units, we have to simply go with the music. Rachmaninoff is already cuing us into the waltz pulse. Our coach suggested that we visualize the heels of the ladies dancing a waltz in an old movie (complete with a majestic ballroom, chandeliers, long evening gowns, etc.). Their heels lift off the first beats and that is what we are to do.

Cue: Metaphoric: Picturing the heels of lady dancers direct communicated to us the lively pulse of the waltz.

Implications: Rather than encumbering ourselves with numbers, we should have cued ourselves into the simple feel of the waltz, concentrating on keeping it light. Whenever we feel the waltz becoming heavy, we need only to think of the metaphor of the ladies' heels. This metaphor is a cue that directly influences the sound quality, but cannot be seen.

Background: After our coach left, M.T. and I both sat in silence and stared at the music. We both played a few beats leading into the nemesis page.

Issue: Now that our main dilemma had been resolved, the only remaining hurdle was to find an aesthetically-pleasing bridge from the preceding passage.

Process: M.T. played alone, and then cued us into something: she simplified the bridge passage by repeating with her thumb, creating an alternating "up, sink, up, sink" feel. She continued her G's while I came in with my passage, and we ended on the first beat of the preceding passage. We could hear how her G harmonized with my Eb. I asked M.T. to play the last bar of the bridge again, with the F#. We played this measure together three times, which resulted in the transition getting smoother. After continuing through the next passage, we went back to the same four measures, for positive reinforcement. Again, it worked.

Cue: Spontaneous: Though I cannot define what happened, something in the way in which M.T. played her G's with her thumb cued me into a new

way of listening to the harmony.

Implication(s): We experienced a breakthrough in how we heard the transition from one problematic passage to another. In other sessions, we had focused on the harmonic changes as well, but this was qualitatively different. After our coach left, we were uncertain about the next step. However, when I tentatively began with a few measures of what I knew was still unsolved, M.T. picked up on it. There was a little musical dialogue between us. Then, M.T.'s thumb cued us into something intangible, yet it was exactly what was needed. Later, we went back to the same four measures, ensuring positive reinforcement.

Summary (June 8, 1996)

Our remaining technical problems were unquestionable resolved during this session. Once my arms carried the pulse and danced, the music fell into place. In the past, we had worried far too much about minor mechanical issues. With a swinging inner pulse, there was no need for counting like beginners. All we had succeeded in doing was complicating the music when by forcing ourselves to think in terms of numbers instead of the experienced pulse. Perhaps a more experienced duo team would have not fallen into this trap.

It is instructive that, despite our relative musical sophistication, our first question to our coach was how to count the piece. With numbers once

again thrown out of the window, we were cued into the feel of the waltz beat by merely picturing the heels of ladies dancing the waltz, whirling across the grand ballroom. This is a useful metaphor that we can rely on whenever the music starts to get heavy.

Finally, M.T., perhaps picking up on our coach's mode of working, intuitively cued us into the missing link in our performance. Once we changed our perceptions of how we heard the harmonic changes, we were able to get through the passage technically, musically, and — most important — consistently. Now, armed with what we have learned — or, more correctly, discovered — we should be close to being performance-ready.

Summary

While there were a number of positive formal rehearsals of Rachmaninoff's Suite No. 2, due to circumstances beyond our control, we were unable to perform it in a formal concert. The purpose of this chapter, therefore, has been to provide researchers with a perspective on how the process of preparing for a concert may work. This may not only encourage relevant questions about the experience of communication between musicians, but may hopefully provide a foundation for the development of appropriate methodologies.

Chapter Seven

Summary and Possible Directions to an Encore

In this thesis, we have examined an area of human experience that has hitherto eluded systematic inquiry: essentially the process of communication between two pianists engaged in the act of co-creating and preparing a complex, multi-movement, two-piano work for performance. It is most significant that neither the musical nor scientific communities have as yet provided appropriate methodological benchmarks for a study of this nature. Therefore, it was first of all imperative to question why so little research has been attempted in this area, given the potential richness of the topic, particularly as it relates to non-discursive experience. As I have shown, certain paradoxical, historical, and cultural precedents have conditioned — more correctly, restricted — the nature and direction of both speculation and research. This remains true, despite the fact that recent years have witnessed a growing awareness that the "language" by which performing artists communicate with each other — as well as with their audience — is aesthetically ordered and somatically expressed.[73] As such, it encompasses a variety of "modes of knowing" — verbal and nonverbal — that converge into

[73]Cohen and Chan (1998) explain: "The biological correlates to the aesthetically timed musical experience include the integration of the performer's neuro-muscular and vegetative resources — breathing, gesture, sense of balance — into a unified whole."

a directly-experienced "unified mode of cognition" (Cohen and Chan, 1998).

As a participant/observer proceeding from an ethnographical/metacommunicative perspective, I focused on the developmental phases of both verbal and nonverbal cues as well as expressive gestures which, through practice, rehearsal, and coaching sessions, become second nature to highly proficient musicians. Once these stages merge into a creatively experienced performance, the gestural communication between the pianists ultimately becomes intrinsic to the degree that the movements are no longer visibly defined, but are internalized into aesthetic expressions of the musical line and the rhythm of the music. Cohen and Chan (1998) describe the purpose of these aesthetic expressions as defining "the line, shape, character, the nuances of articulation, dynamic patterning, plasticity of rhythm, emotive tone and so on, that, experienced as a whole, constitute a musical experience".

Essentially, the ethnographical/metacommunicative approach encouraged me to gather, relate, and draw implications from a wide spectrum of source material. The following demonstrates the range of fields researched: the historical background of Western musical performance; the history of attitudes towards performers from Plato to the present; the interactions between individuals in various performing situations (such as musicians, dancers and actors) and what these performers have said about their experiences; the literature on nonverbal communication; recent

psychological studies on musical performance; philosophical reflection on the aesthetics of music making; and, finally, my own work in which I recorded certain processes involved in preparing for a duo piano concert. Here, my methodological path allowed verbal and nonverbal cues to emerge naturally in the course of rehearsal, coaching, and performance. Since I attempted throughout to keep the study as nonintrusive as possible, I deliberately resisted pre-determined cues in order to assure that we might remain free to communicate as much as possible out of the immediate experience of making music. The method itself became a living experience in which meaning and intention were understood to be in a process of organic growth. In this context, unintended inflections — the more surprising and unique to the moment, the better — were welcomed as creatively valid. As a consequence, the methodological experience evolved in a manner not unlike that the creative process described by Flannery O'Connor. When asked what she thinks about while writing, O'Connor answered, "I write because I don't know what I think until I read what I say".[74]

In retrospect, we can see that certain questions have emerged which seem to be useful in the development of a working model for future researchers. The grand question, of course, is what cognitive processes are involved when two individuals attempt to translate mute symbols sketched

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[74]Cytowic, 1993, p. 213

on paper by a composer — often or not, dead — into sounds that are not only meaningful to both, but can be meaningfully communicated to listeners. In fusing the total experience into a living entity, it would seem that we are not dealing here with just another highly skilled performance, but rather a co-creation involving the composer, the performers, the score, the coach, and the listener. And, clearly the final analysis must include relationships that emerge between all of the factors involved.

Another avenue worth pursuing might be to conduct a long-term comparative study of the similarities and differences in communication between musicians in a classical ensemble and improvisational (jazz) groups in rehearsal and performance (For that matter, actors preparing a classical play could be compared with the spontaneous "jamming" of a group of actor improvisors). A researcher might note the processes, the gestures, the cues, the language (particularly the effect of metaphors), and the styles of improvisational communication — for example, how the musicians respond to one other, and how the element of play comes into the picture. Indeed, it may very well be that, at a high level of skill, the differences between disciplines and mode of performance may be more apparent than real.

On a final note (ensemble players, take heed!), I defer to Philip Cohen:

> "More than a memory aid; more than a technique for 'cueing into each other's space'; more than a mode of non-discursive knowing. . . . . these (nonverbal) exchanges form the fabric out of which the mystery of performance as a creative experience is woven" (1996, December).

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Appendix A

Duo Piano Repertoire of M.T. and C.G.

Two Piano Works

Danses Andalouses — Manuel Infante (1883-1958)

I. Ritmo
II. Sentimiento
III. Gracia (El Vito)

Jamaican Rumba — Arthur Benjamin (1893-1960)

Concertino — Walter Piston (1894-1976)

Rhapsody in Blue — George Gershwin (1898-1937)

Suite No. 2, Opus 17 — Sergei Rachmaninoff (1873-1943)

I. Introduction
II. Waltz
III. Romance
IV. Tarantella

Duets at One Piano

Slavonic Dances, Op. 46 — Antonín Dvorák (1841-1904)

1. C Major
2. E Minor
3. A-flat Major
4. D-Flat Major

Hungarian Dances — Johannes Brahms (1833-1897)

1. Allegro molto
2. Allegro non assai
3. Allegretto

4. Poco sostenuto
5. Allegro

15 Stücke Für Klavier — Tikhon Nikolaevich Khrennikov (1913-)

7. Russian Dance
9. Dramatic Sketch
11. Revolution March

Capriccio on Russian Themes — Mikhail Ivanovich Glinka (1804-1857)

Sonate, piano 4 mains — Francis Poulenc (1899-1963)

1. Prelude
2. Rustique
3. Final

Appendix B

The Music: A Description

The piece rehearsed by M.T. and C.G. and analyzed in this thesis is Rachmaninoff's virtuoso work, *Suite No. 2, Opus 17* for two pianos, four hands. This Suite, composed in 1901, contains four movements: I.*Introduction* , II.*Waltz* , III. *Romance*, and IV.*Tarantella* .

The first movement begins with loud, bombastic octave chords in both pianos that sound majestic in nature. One can imagine trumpets giving it their best as the red carpet is laid out for arriving royalty. This movement has a march-like quality, even through the quieter passages. At the end, piano I has lower sustained chords, while piano II has what resembles low-pitched drums dying away until both parts play a final chord. The challenge of the first movement is not the notes themselves, but the fact that both parts are full of fast, loud, running octave passages — this particular formula spells "pain" to a pianist, because it means that the hands are mostly playing in extension and thus tire quickly by tightening the wrists and forearms.

If there is one good word to describe the *Waltz* , it is "energetic". First of all, it is marked "presto" and to the non-musician, that is very fast. Piano II jumps off her octaves on the first beat, and then piano I comes in playing on the same two notes (a D and C#) for almost eight bars, but these two notes help keep the energy going (or if played mechanically, fizzles out the energy

within seconds). These notes start out loud, then go soft and grow again, then die away. For an exact picture, imagine a mosquito buzzing by your ear, then hovering a bit further away, and then coming back to your ear. This is what piano I's part sounds like at the beginning. Next, both parts have right hand eighth-note passages, whereas piano II is playing the same intervals as piano I, but a third below. It is like two women singing a duet a third apart. Meanwhile, the left hand proves to be interesting. It is general knowledge to anyone who has danced a waltz before, that the first beat is usually strong, like oom-pah-pah, oom-pah-pah. In this case, piano II has the oom, and piano I has the pah-pah, so it is important for piano II to bring out her first beat, so piano II has a better feel of the waltz. Eight measures later, there is an unusual section for a waltz, whereas Rachmaninoff seems to leave both parts dangling without a first beat in the left hand. In piano I, every other measure has the left hand finishing a mini-phrase on the first beat, which tells the pianist that this is not a down-beat. At the same time, piano II is sometimes left without a first beat in the left hand at all, and has a melody in the right hand whose phrases correspond with piano I's right hand. The difficulty in these cross rhythms is trying to hear a waltz at all. The first few times of playing through this with one's partner makes one wonder what Rachmaninoff could have been thinking at the time when he wrote it. As we get further into the piece, we hear typical Rachmaninoff-esque beautiful melodies within octave chords and running eight-note passages from the

bottom of the piano to the top. In the middle of the piece, there is a section which slows down a bit, and there is a singing melody which sounds simple, but is often coming in on off-beats. This grows into a contemplative part, then we get back to the normal tempo, and we are off again, like in the beginning, but with the pianos switching parts. The *Waltz* ends with both pianos playing only two high notes, but in reverse (piano I playing G-B-G, and piano II playing B-G-B), which gives it a simple, almost childlike quality, and then they just stop, leaving the audience hanging, waiting for what is next.

The third movement, *Romance* , has an introspective nature. Romances in general are in 6, and all 6 beats are even, so one does not divide the measure in two groups of three beats. This is a slower movement which allows the beautiful melodies to flow and is calm throughout. Piano II starts with the accompaniment and piano I comes in on the third measure with the melody. On the second page, they switch parts. There are several running sixteenth-note passages, which build a bit, then float into nothingness as the melody returns. In the middle of this movement, there is a tricky triplet passage in which, by glancing at the music, the body prepares to play faster than the music really intends, which tends to cause unwanted accents, too, even though the music indicates pianissimo and staccato. A couple of pages after this passage, there is a section of building octave chords which end with a big sforzando, then a small rest before a pianissimo interchanging melody between the pianos. Rachmaninoff, in most of his music, enjoys building up

excitement, and then going down to nothing again. This tension keeps the music interesting, and lets it breathe. The last two pages of the *Romance* seem like a coda to the movement, and are contemplative with strange chords. It sounds like Rachmaninoff is saying "let's just lie back, and think about what we experienced so far in playing this movement."

The last movement is a Tarantella, whose main theme is an Italian folk song. Tarantellas are fast, exciting dances in 6, to be felt in two triplets per measure. Originally they were used when one had a poisonous snake bite — the person would dance her/himself into a fever to get rid of the poison via one's sweat. In this Tarantella, Piano II starts loud with a bass melody, then piano I jumps in softly, but low as well. Both parts build and build until there is a two measure rest, then piano II has a huge octave chord, which is like a timpani, then piano I shoots off like a canon with the melodic octave chords. The fourth page is tricky, due to cross rhythms between the parts. In the sixth page, piano II has a laid-back bass, while piano I has a melody with many repeated notes, which means that the pianist should switch either fingers, hands, or both, as playing the same note twice with the same finger can slow the rhythm, thus causing asynchrony. Later on in the piece, piano II has the melody, with piano I providing the bass.[75] There is a section in pages eight and nine where there are repeated motifs. The pianists have to take care that

[75]The advantage of switching parts like this is that, if one runs into problems, just asking the partner how she plays it can help. Very often, the pianists have to come to an aesthetic consensus on how they want a particular passage to be played.

it does not sound boring here, as it easily can. Pages 10 to 14 are unusually weird, due to the vast melodic and aesthetic changes every few measures. It actually sounds like Rachmaninoff was listening to a radio, and was changing stations every few seconds, so he wrote in these little song fragments. It can be a headache in the first few rehearsals, though. It is important to keep the same rhythm throughout, because there is a tendency to get faster in the louder sections, and slower in the quiet ones. The *Tarantella* ends as it started: big and loud, like an entire orchestra giving it their all.

Appendix C: Recording Sessions

Session Date	Time	Session Type*	Movement
January 17, 1996	1 hr. 25 m.	P, C	Waltz
January 22, 1996	1 hr. 15 m.	R, C	Waltz
February 14, 1996	50 m.	R, C	Waltz
May 12, 1996	40 min.	R	Tarantella
May 13, 1996	1 hr. 15 m.	R	Tarantella
May 17, 1996	1 hr 30+ m.	P, R	Romance, Waltz
May 22, 1996	1 hr 30+ m.	R	Waltz, Romance
May 29, 1996	1 hr 30+ m.	R	Waltz, Tarantella
May 30, 1996	1 hr.	R	Introduction
June 6, 1996	1 hr.	R	Introduction, Waltz
June 8, 1996	1 hr.	C, R	Waltz, Romance
June 13, 1996	1 hr. +	C, R	Romance

*Session Type: P=Practice, R=Rehearsal, C=Coaching

Appendix D: Example of Chronicle

13 June 1996, Rehearsal and Coaching Session

Romance

We began at the 2nd measure, page 28 and stopped at the bottom. The 2nd time through we made it to the 1st measure, last system, page 29. My left hand wasn't cooperating in my triplet passage. M.T. commented that it sounded "off" when she started her triplets. Just a note — this time, neither of us pedalled during our triplet passages. That was different from the last rehearsal. Next, we began at number 22 and it still sounded off when we began her triplet passage. [**Note:** in watching both of the videos, it seems that in my triplet passage, M.T. hears the phrase moving forward, so she isn't waiting on me at all. When I play it with her triplets, it looks like I'm waiting for her and that I don't hear the musical line — just note by note, beat by beat. I'm not sure that we realized this in our rehearsal.] We started playing back and forth just the beginnings of our triplets and then began with 22 again. It was still off in the same place and sounded heavy and was slowing down. I said that it's off because the left hand has accents on the wrong beats. If I listen to my RH, I'm ok, but if I pay attention to the LH, I have unwanted accents. This is what I had discovered in my practice. It could also be that it goes off in M.T.'s passage when her RH switches to the bass clef, which

naturally makes it sound more heavy and then we slow down.

We decided to try it again, this time leaving out the left hands starting from 22. M.T. said that it sounded weird at the beginning of her triplets again. In my video, it's obvious that I'm playing that with flat fingers, which just goes from beat to beat without a moving line. Also, I mentioned to M.T. that it's weird because we both hear the line going to the 3rd beat instead of the 4th, which is a main beat, because of the L.H. We went right from her triplet passage. It seems together, but she said that she felt that she was going too fast. We tried to rationalize it: I thought it was because we're used to hearing the LH enter in at odd beats, but she said that's not it, that she always feels that she has to slow down in that passage. But I said that I think that she always goes faster than me in my triplets. However, she said no, that I go faster. Then I said that we probably think that because it's just a lot of notes. **Note:** I was dragging the beat a bit when she got to her triplets. Or at least made it sound that way, because of the way that I was playing (i.e. from beat to beat, rather than hearing the moving line).