

MUSIC IN COMMUNICATION:
IMPROVISATION IN MUSIC THERAPY.

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1991



I would like to dedicate this thesis to the memory of my
grandmother,

SOPHIA KATSAMIN SYMEONIDES,

from whom I learnt that the written word is sterile unless the
imagination colours it.

ACKNOWLEDGEMENTS

I would like to thank my supervisors: Colwyn Trevarthen for his inexhaustible curiosity and enthusiasm, Raymond Monelle for his supportive encouragement, and David Lee for his awkward questions.

Frances Provan, at the Social Sciences User Support Group, Edinburgh University Computing Services, gave statistical advice; Sarah Busbridge, musician, undertook reliability checks; Stuart Smith, Chief Technician at the Linguistics Department calibrated the musical excerpts; Chris Achenbach, music therapist, undertook independent transcriptions of musical excerpts; and Dr Douglas Blackwood, consultant psychiatrist, provided psychiatric advice.

The experimental part of this thesis would not have been possible without the consistent and friendly support of the medical and nursing staff at Cambridge Street Day Hospital, Edinburgh, and without the patients' willingness to play music with me.

I would also like to thank AS Karger, Medical Publishers, for permitting me to reproduce the published paper in the appendix.

Apart from the published material, included in the appendix, I declare that this thesis is my own work.

Mercedes Pavlicevic

Edinburgh

February 1991

ABSTRACT

That music has an intimate link with human life has been acknowledged throughout history, and music therapy emerges as a discipline from this understanding. Improvisation in music therapy is usually assumed to have communicative, interactive significance - and, of course, to be of therapeutic benefit. However, this has never been examined within a wider psychological framework, nor has it been convincingly tested experimentally.

In this thesis I examine the philosophical and psychological literature on the human experience of the ingredients of music, and pay particular attention to that body of literature which describes the interpersonal temporal and prosodic features of basic human communication, that is, the literature on non-verbal mother-infant interaction. I propose that improvisation in music therapy provides a pivotal synthesis for demonstrating the duality of music and basic emotional processes, and support this with experimental work.

Two studies show that, (i), the capacity of a subject to communicate reciprocally with another human being, a capacity which is affected by mental illness, is reflected in the quality of the musical interaction with a music therapist, and (ii), that improvements in the level of musical contact between a therapist and an adult psychiatric patient are reflected in improvements in the patient's clinical state.

Thus, music is an intimate part of human life, not simply because human beings 'respond' to the ingredients of music, but because music and emotion form the root of fundamental human contact.

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INTRODUCTION

The literature in the field of music therapy suggests that when musical improvisation is created by therapist and patient in order to establish a non-verbal interaction between them, this interaction is usually considered to be emotional in a live, dynamic sense, rather than purely musical. This musical/emotional interaction is seen as forming the basis for the therapeutic process.

This concept has, however, never been substantiated experimentally, or set within a wider philosophical and psychological framework. Rather, the musical/emotional process tends to be assumed, and to form the premise upon which improvisation is used in music therapy. Music therapists appear to accept, though they seldom discuss, the substantial body of literature in the field of music aesthetics, music psychology and neuropsychology which suggests, in one way or another, that music is intimately connected with human life.

Most accounts of 'emotion' in music, written by musicians and philosophers, assume a definition of emotion which is based on the external expression of internal, categorical emotional states, such as 'anger', 'joy', 'sadness' and so on. In this thesis emotion in music is examined not as related to specific emotional states, but as the non-referential, motivational dynamic process which forms the root of fundamental human communication. At this essential level, which can be considered to underlie the differentiation of discrete emotions, the structures of motivation in communication have an inherently

musical character, and these structures are revealed within the functional context of human communication.

I would now like to clarify what I mean by 'music' in this thesis. Whereas most philosophical deliberations about music focus on pre-composed and conventionally coded art-form, here I select the basic, unformed ingredients i.e. pulse, rhythm, pitch, dynamics and timbre. These are present in the quality of our acts, and are used by therapist and patient in a spontaneous, improvised context which has an interactive agenda.

Thus, I propose that music and emotion (as defined above) are inextricably linked, but that the quality of this link has not always been understood. Much of the existing literature is based on enquiries into, for example, the passive relationship between music (usually pre-composed and conventionally coded) and the listener, the human response to (usually fragmented components of) music, or the more sophisticated and active process of musical composition, the realm of the chosen few.

Here I examine the human experience of music as a fundamental and universal phenomenon, available to all human beings, and I propose that this is a consequence of the inherently 'musical' nature of human communication, but only at this essential emotional level. It is our intimate experience of the musical ingredients from an early age, within an emotionally communicative relationship, that reveals the dual nature of music and our basic emotional processes. This concept gains support from the literature on non-verbal or 'basic' human communication, especially those observations in the developmental psychology of mother-infant interaction, which show that an intimate and

emotionally fluid rapport does not need words: a mother and very young infant 'know' one another through the temporal quality of their acts and the prosodic, i.e. musical, features of their vocalizations. Their interaction can be seen as resembling a music improvisation duet.

This duality of music and basic emotion may be described as an *Interface*, in the sense that the nature of our active experience of the one reveals essential information about the nature of our active experience of the other. This interface is revealed in music improvisation through what I choose to call *Dynamic Form* (1). Dynamic Form can be seen as being present in any activity, whether it is communicative or not. For my purposes, however, I use it specifically to illustrate the active and ongoing patterns of emotion which are made audible in communication and in improvisation which has a communicative, rather than a purely musical agenda.

I would like to clarify the fundamental paradox present in the concepts outlined above. Music and Emotion are described as forming an *Interface*, on the one hand, and as having a dual nature, on the other.

This paradox may be explained thus: in this thesis I propose that the fundamental ingredients of music feature in

(1) The term *Dynamic Form* has been used by Hanslick, Langer and Karbusicky, in their deliberations about *Feeling/ Meaning and Music* (in the formal sense). My choice of the term, to denote the psychological, communicative function of musical sounds in interactive improvisation, is to emphasize firstly, the necessity for order and coherence in any utterance for its communicative content to be apprehendable to another, and secondly, to emphasize the fluidity of this communicative form: a rigid and unvaried form will restrict the quality of the interaction, as will be illustrated in the experimental parts of this thesis.

basic or direct human communication. At this level, I propose that music and emotion share fundamental features, so that the one may be taken as representing the other. Thus, musical information reveals the communicative quality of the interaction, and, conversely, non-musical acts, such as gestures, facial expressions, movements and vocalizations reveal musical interactive features. It is in this sense that I see music and emotion as forming a common root, or as one phenomenon with a dual nature. However, music and emotion are also separate areas of human experience, each with a vast and rich cultural, literary, philosophical and academic tradition. Their separateness is acknowledged by the concept of an Interface: this simply symbolizes that, although I choose to select aspects of each, suggesting that they share essential qualities, I also acknowledge that they exist as separate phenomena.

Music Therapy provides the ideal context to examine these various concepts, since the purpose of improvising music in music therapy is to establish a communicative relationship between two people: it enables the sounding, sharing and extending of Dynamic Form. Improvisation is used in many approaches to music therapy, and is usually considered to be the focal feature of the session. Its communicative role has never been described rigorously, nor has its efficacy been convincingly tested. This lack of clarity about the role of improvisation is reflected in existing assessment procedures, which either ignore the 'musical' process altogether, or do not adequately describe its communicative significance.

The experimental part of this thesis provides a synthesis for these various themes. Two studies demonstrate the

nature of the duality of music and basic emotion by detailed description and analysis of the improvisation process; they throw light on the nature of mental illness by revealing the distortions and restrictions of basic emotional processes through improvisation; they show that the assessment procedures developed for this thesis are sensitive enough to differentiate between subjects with differing capacities to communicate, as well as to detect changes in the quality of communication; and finally they demonstrate the therapeutic benefit of improvisation in music therapy. Thus, increased mobility and coherence in a subject's musical utterances reflect a more coherent and flexible Dynamic Form. This, in turn, enables a higher level of musical interaction between Therapist and Patient, as measured by the Music Interaction Ratings (Chapter Four). The experimental parts of this thesis (Chapter 6 and 7) demonstrate the relationship between this higher level of musical interaction and the subjects' basic communicative capacities. These set the seal on my understanding of the essential musicality of human communication, and of the communicative and therapeutic qualities of music.

CHAPTER ONE

1.1. MUSIC AND THE GODS.

The powers of music have been acknowledged by many different cultures over centuries. In attempts to capture its mystery, philosophers have attributed to music a capacity to convey direct messages about the human experience of deities, of humors of the soul and of cosmic elements. Our deliberations about what, and how, music signifies are in the spirit of this ancient quest for understanding of music's power and mystery.

That there is an intimate link between music and emotion has been acknowledged in writings that explore the social aspect of music-making (Blacking, 1976; Farnsworth, 1969; Konecni, 1982; Lomax, 1968) and in studies of the spiritual and mystical dimensions of the art (Hamel, 1976; Tame, 1984), as well as in more scientific examinations of responses to music, be they neurophysiological (Botez, Botez and Aube, 1983; Konecni and Sargent-Pollock, 1976), emotional (Cantor and Zillman, 1973; Farnsworth, 1954; Hevner, 1935; Pignatiello, Camp and Rasar, 1986; Standifer, 1970) or perceptual (Dowling and Harwood, 1986; Sloboda, 1985; West, Howell and Cross, 1985). However, because they focus on one or other structural aspect of music at a time [e.g. rhythm (Fraisse, 1982; Lee, 1985), syncopation, (Handel & Lawson, 1983; Weaver, 1939) or melody (Dowling & Harwood, 1986)] or because they use limiting perceptual models (Deutsch, 1982; Dowling & Harwood, 1986; West, Howell & Cross, 1985), these

various approaches are unsatisfactory for my purposes: *they* fail to satisfactorily grasp the integrated and highly distinctive human experience of music and the impulse to make music.

But, before presenting my own understanding of the human experience of music, I shall review, in the rest of this chapter, relevant literature on emotion and meaning in music, on cognitive psychologists' explanation of human response to music, and literature on the improvisation process.

1.2. EMOTION IN MUSIC.

Psychological treatises on emotion and meaning in music are, on the whole, unsatisfactory for my purposes. Firstly, as Clarke (1985) notes, they tend to take as their focus the relationship between the listener and the music being listening to, the latter usually being pre-composed. Secondly, the field of emotion in music is vast and perplexing, and is further complicated by an extraordinary lack of distinction in the terminology (Karbusicky, 1987). Thirdly, those treatises that focus on human response to music are potentially confusing for my purposes. Their implicit difficulty is that they tend to force the issue of music-as-communication. The fact that humans respond to a musical piece does not necessarily mean that music, *per se*, is communication. Aaron Copland (1952) suggests that the question regarding the meaning of music should never have been asked in the first place. He proposes that the meaning exists both in the

music itself, with no extra-musical connotations, and in the mind of the listener: thus, it is only when the patterns of sound take on meaning for that listener directly that they become music. Certain premises in these treatises, however, lend support to my thesis. After a brief overview, below, I describe these.

1.2.1. Music as Sign.

One way of approaching the issue of emotion in music, is to consider the semiotic or signalling function of the musical utterance. Here, Peirce's (1932) classification of signs as Index, Icon or Symbol, provides a useful, if highly theoretical and general, starting point (Dowling and Harwood, 1986), since Peirce did not refer to art in his typology (Greenlee, 1973). In his theory, Peirce proposed that messages of all kinds are a function of three interactants: a 'sign', an 'object' and an 'interpretant' (Feibleman, 1960; Karbusicky, 1987; Monelle, unpublished manuscript). The manner in which the sign relates to the object distinguishes between 'icon', 'index' and 'symbol'. This was described by Peirce as being the most fundamental division of signs (Peirce, 1932).

1.2.1.1 Music As Icon

An Icon has a perceptible resemblance to the object or some aspect of it: it has a quality which renders it a suitable representative of that object (p.157). An Icon has no dynamic connection with its object, although the mind is

"excited" by the analogy of the pattern (Peirce, op.cit. p.168). The resemblance between Icon and object can be manifested in various ways: as an image, in which it partakes of simple spatial qualities of the object; as a diagram, which represents analogously the relationships between parts of the object; and as a metaphor, where there is a parallel representation through something else having similar qualities or value.

Music has been described as image and metaphor, but not as diagram. Thus, the formal similarity between music and its referent is defined as Iconic (Dowling and Harwood, 1986). Music holds meaning because it resembles emotions: the ebb and flow of tension and relaxation in music resembles the ebb and flow of tension and relaxation in our emotions; certain figures or formations in music appear to relate to (and to excite) affective states.

There are two trends of thought in which the quality of response to music is conceived as an icon. First there are those who propose that the emotion it represents is categorical. Thus, Schopenhauer, cited by Kivy (1980), described different forms of music as expressing specific emotions. Clynes' Theory of Sentic holds that specific sound forms are linked to specific emotions (Clynes, 1980; Clynes and Nettheim, 1982). He proposes that specific emotions can be isolated and delineated by entities of expressions called sentic forms. These forms underlie expression, regardless of the sensory modality through which the emotion is

expressed. He claims to have shown, by a series of experiments, that subjects agreed about the 'sentic form' of different emotional states such as 'anger', 'happiness', 'joy', 'sadness'; and that they were able to recognise these categories in synthesized sound - which he used, rather than music. A study by Hevner (1935), showed a high level of agreement between listeners who were asked to select categories of emotions while listening to specially selected recordings of music.

Langer (1979), however, believes that writings supporting this view contribute little to the understanding of the connection between music and feelings, and Cooke, Langer and Hanslick support the alternative trend of thought that takes music as iconic communication of emotion. They propose that music represents non-specific emotion - music and emotion share certain characteristics, and it is this resemblance which conveys meaning to the listener.

For Langer (1953,1979), music reflects the morphology of feelings, i.e. their patterns of tension and resolution, their dynamic shifts. Thus, emotions are formalised and articulated in what she calls 'significant form', and certain formal properties of 'inner life' are similar to those in music. Hanslick (1957) had proposed a similar view that musical structures resemble certain dynamic patterns of human experience, but he argued that music can mean nothing other than itself. Langer (op.cit.), points out that his argument must be seen in its historical context, for it was a reaction to the view that music means one

specifiable thing, as in Wagner's *leitmotive*.

1.2.1.2. Music As Index

Pierce's Index refers to the object it denotes by being 'affected' by that object; the object is in a contiguous, dynamic association with its referent, rather than the two resembling one another. Thus, the Index is connected with its object, the two are an 'organic pair', and the Index directs attention to its object. For example, a bark draws attention to a dog, or, to put it differently, one hears a dog and not a bark. However, Peirce points out that the interpreting mind has nothing to do with this connection, except to remark it after it has been alerted (p.168). An Index does not necessarily have a similarity or analogy with its object, although Peirce concedes that 'absolutely pure' index does not really exist. (Karbusicky (1987) points out that the three categories of signs should not be considered to be mutually exclusive, since elements of the one are frequently found in the other.

Psychologically, the action of indices depends upon associations by contiguity. Karbusicky (1987) describes music as exciting or stimulating our psyche because the indexical quality is already encoded in our consciousness, thus suggesting a contiguous and genuine relationship between music and our psyches. He supports his case by quoting from writings which date from the 16th century onwards, and suggests that Hanslick (1957) had already noted the psychical effect of musical structure

without calling it indexical. For our purposes, the listener or player is conceived as stimulated or excited by the music which s/he hears. Copland (1952) writes that in listening to music we ourselves experience the tension and release, the density and transparency, the smooth or rough surface and its swellings and subsidings.

1.2.1.3. Music As Symbol

The third category Peirce used to describe meaning is that of the Symbol. The relationship between the object and the sign that is a symbol depends upon a culturally agreed or arbitrary bond. It is the 'symbol-using mind' which connects the object with the idea - without it, no such connection would exist. The symbol denotes rather than indicates its object, and it grows or develops, perhaps from an iconic quality. The symbol, says Peirce, has an indefinite future (Peirce, op.cit.p.165).

The meaning of the music, if symbolic, is outside itself - this is what Meyer (1956) calls 'designative' meaning. The associating process is, in fact, not a musical one, but is set out rationally (often verbally) by the composer as a convention. *Leitmotive* exemplify the symbol, and here, the response of the listener is contextual.

The listener's response may also be a product of what Frances (1958) calls judgements of signification, i.e. the listener responds to an associated image or mood, to the social context in which the music is heard or experienced, or to an

image or a past feeling (Kivy,1980). Langer (1979), while accepting that music has assigned connotation, reacts against this view of music as symbol. Its import, she notes, is never fixed, and it can, therefore, only be seen as an 'unconsummated' symbol. Its significant forms have a high ambiguity of content.

1.2.2. Comments on Music as Sign.

These concepts offer valuable insights into the relationship between music and emotion. They acknowledge that music (as artform) has some relationship with human emotion in the broadest sense of the word. Music and emotion have 'something in common', based on a similarity between the two or, as Langer puts it, music reflects the 'morphology' (i.e. the shape or texture) of feelings. Humans recognize patterns of flow, fluctuation or dissolution, of sustained or sudden tension and resolution, manifested in music. Moreover, humans are affected by these patterns: there exists an inextricable link between these patterns and human response to them, although this link is not, in my view, a fixed one, as Clynes would have us believe. Rather, we recognise and respond to these forms in music because they already exist in our minds - this will be discussed later.

These insights, although based on discussions about the relationship between music and emotion in the general sense of the terms, support the concepts of music and emotion as forming an Interface, and as being one phenomenon with a dual nature. Music and emotion form an Interface, in that, as this

literature shows, they meet and are linked to one another although they are clearly separate phenomena - the one exists as a separate entity from the other. Moreover, music affects us, and the relationship between it and our feelings is a contiguous, dynamic one. In basic human communication, the quality of our acts convey, directly, our emotional motivation and capacity to interact with another person. These basic forms of emotion have musical features (I discuss these in Chapters 2 and 3), and these features fluctuate, as the forms affect, and are affected by, our communicative intents and responses to another person.

It is worth noting that music therapists employ all three of Pierce's signs, depending on their theoretical orientation. Thus, some therapists make verbal interpretations on the improvised music because of its iconic character, suggesting to patients (or encouraging patients to perceive) that the music sounds sad or angry, and so on. Other therapists may work in the symbolic mode, and encourage patients to make the association between, for example, a slow improvised tango, and its symbolic representation of passion and romance. Frances' 'judgements of significations' may also be used, in that the improvisation may remind patients of something which happened in their lives.

I hope to show that it is the indexical, or the direct, relationship between the music being improvised and the patients which generates the therapeutic process, by enabling the formation of an authentic, if transitory, emotional bond between the patient and therapist. Perhaps it is this indexical

relationship that embodies the 'true' function of music, at the root of the power that music has over us. Karbusicky (op.cit.), in particular, supports this view by putting forward a strong case for the immediacy of the effect of music. It is this immediacy which can be elicited by using musical improvisation in a particular way, in music therapy. But before elaborating on the musical/emotional use of improvisation, I want to summarise, very briefly, the explanations offered by some music psychologists as to how music affects us. This discussion of music as a stimulus takes place outwith the semiotic paradigm described above, although there are theoretical overlaps with it.

1.3. THE COGNITIVE PSYCHOLOGY OF MUSIC

1.3.1. Cognition and Music

Cognitive models have been developed to analyze or understand how listeners create mental schemata which enable them to perceive and organize isolated and arbitrary musical events, thinking them into an organized temporal experience. Once again, the literature tends to concentrate on pre-composed rather than improvised music, and much work in the field pertains to the creating of conceptual models to explain the perception of various, separate, components of musical structure, such as rhythm, melody, time, and so on (Dowling and Harwood, 1986; Pressing, 1984; West, Howell and Cross, 1985).

For cognitive psychologists, the structure, or schema, of the music needs to be 'understood' before it can carry meaning

for the listener.

Sloboda (1985) asserts that the cognitive structures we use to represent music in our own minds are learnt, and he identifies two phases in this learning. Phase one is a process that he calls 'enculturation', i.e. by exposure, through everyday social experiences, to the music of our cultures. These acquired musical structures, such as the tonal systems, the use of octaves and harmonic structures, may be universal in a culture. They provide a ground on which phase two of cognitive learning, that of 'training' in specialised skills, may be built.

West, Howell and Cross (1985) have attempted to describe how musical events over time are grouped by the listener. Their model 'explains' perception of musical structure as a whole, rather than the perception of separate musical elements. They propose that the basic principle of a perceptual model is a rational construction of musical patterning, that is, "...an identification of what elements go together, where disjunctions occur, and inclusion of elements and groups of elements in superordinate groups. It also requires identification of elements perceived as structurally important, as opposed to those which are in some sense, embellishments." (p.44). Once this basic grouping has been established, the various elements such as pitch, rhythm and timbre may then be explored in relation to musical experience and memory.

1.3.1.1. The Perceptual Organization of Music.

These authors propose a model of musical structure that takes into account a description of how musical events are grouped over time and in the attentional domain. Their modelling parameters resemble those discussed by D.Deutsch (1982) in her use of Gestalt principles of organization. They put forward the following specific modelling parameters:

(i) the horizontal and vertical structure of music, i.e.

depending on the attentional stream of the listener, the momentum of patterns will sound either vertical or horizontal. An example of this kind of streaming is found in aural tests for music examinations, where candidates are asked to sing the higher or lower melodic line of a piece (i.e. horizontal streaming); and to describe chord sequences (i.e. vertical streaming).

(ii) the Gestalt principles, applied to musical sounds:

Good continuation, or grouping together of notes that follow a common rule. Here they give as examples the continued ascent of a scale, or a repetition of a single note, in which notes are perceived as belonging together.

Proximity, or the grouping together of musical elements, such as time or pitch, which are close to each other. Thus, adjoining elements are grouped together with respect to time within an attentional stream, and rests or pauses are perceived as disjunctions in a musical phrase.

Similarity, or the grouping together of sounds with similar timbre, where there is no obvious dimension such as pitch or

rhythm, to group them.

Regularity, or the grouping of things into regular rather than irregular sequences or chords.

Symmetry, or our preference for symmetrical rather than asymmetrical groups. Here, they suggest that the perceived simplicity of nursery tunes is that they are divisible successively and symmetrically into even numbers of groups of notes.

Common fate, or the grouping together of a repeated sequence of notes, despite the repetition being inexact, e.g. by transposing the melody or changing the melody while keeping the rhythm intact.

(iii) Higher order groups: these may be formed by combining groups formed by any of the above factors, by referring to their location (i.e., whether they occur at points of stress, such as strong beats) and their quality (i.e., whether their dynamics, pitch or timing is indicative of stress).

1.3.1.2. Invariants in Music.

For Dowling and Harwood (1986), the Gestalt principles, described above, are useful for understanding listeners' apprehension of the organization of local pattern in music (pp 154-160). In their discussion about the apprehension of global aspects of a piece of music, however, they employ Gibson's concept of Invariants, which they describe as regularities of temporal organization underlying surface changes in local pattern features. A simple example of an

Invariant is that of musical pulse.

Invariants, which can be highly implicit, give the listener a schema which is either specific to that particular piece (they quote the example of the melodic/rhythmic contour of the opening of Beethoven's 5th Symphony) or to rhythmic or harmonic characteristics of several pieces, which constitute a musical style. Dowling and Harwood suggest that a piece of music is meaningful when the listener is able to apprehend the complexity of invariant structures - i.e. the listener must have the capacity to listen beyond the surface level of local musical features. The listener's comprehension of global invariants of structure, (for example, of Sonata form or Rondo form) guides his or her expectancies, facilitates the processing of events that match expectancies and provides a standard for evaluating moderate deviations from it.

Lee (1985) supports this view by means of a demonstration which shows that listeners try to establish the metre of a piece as soon as possible (often as soon as the third or fourth note), and tend to stick to this, despite later syncopations or ambiguities of metre.

1.3.1.3. The Musical Experience of Time.

Dowling and Harwood (1986) examine the psychological effects of the relationship between subjective or virtual time, and objective or ontological time. Subjective time can only become established when the more or less steady motion of a piece (or

temporal invariant) is ambiguous and has strong contrasts of pace, rhythm and emotion (op.cit. p.183). Thus, when the elements of, for example, metre and rhythm are explicit and highly similar, the piece of music does not move beyond objective time, which they describe as closely paralleling clock time. They suggest that a first psychological effect depends on whether the motion of a piece is perceived as slow or fast compared with the natural or subjective pace of the listener. A second psychological effect involves variation of the progress of that subjective pace.

[Stravinsky (1974) in his Poetics of Music touches on this issue. He speaks of music as chrono-logic art. The movement of sound is regulated by laws that require the presence of a measurable or constant value - he cites metre, through which rhythm, a purely formal element, is realised. The variations of psychological (subjective) time are perceptible in relation to the primary sensation of real (ontological) time. Musical time, he writes, develops outside the categories of psychological time as it does simultaneously with them. Thus, music can evolve in parallel to the process of ontological time; or it can run ahead or counter to it, by setting up its own centres of gravity and attraction, in the realm of the unstable.]

The above, and other attempts by cognitive psychologists to understand how we listen to music by means of

mental schemata, share a common theme: that it is the interruption, delay or ambiguity of patterns which activate a level of arousal in the listener, and this, together with a search for the meaning of the interruption, accounts for the listener's emotional response.

1.3.1.4. Comments on the Cognitive Psychology of Music. (Part I)

In relation to my purposes, there are several difficulties with the above approaches.

First, as stated previously, the music being listened to is usually pre-composed, so that the evolving process of expression does not feature in these discussions.

Second, the music is presented as fragmented excerpts, so that its broader structural context is ignored.

Third, isolated musical components, such as rhythm or melody, are examined, and once again the overall or more 'holistic' musical context is lost. (1)

My fourth difficulty with the cognitive approach to musical experience is that the music is treated and examined as an entity which exists apart from the listener/ performer, and the listener-music relationship is then analysed and discussed interminably, in an attempt to define its quality.

I now examine cognitive models not of music perception, but of the activity of music improvisation, which is more appropriate to this context.

1.3.2. Cognition and Music Improvisation.

The experimental psychologists' cognitive analyses leaves us with a gap in examining the active, creative relationship between player and the music being improvised (Hargreaves, 1986; Pressing, 1984; Sloboda, 1985, 1988). Two exceptions, psychologists who examine the processes in composition and solo improvisation, are Pressing and Sloboda.

Pressing's (1988) model describes an improvisation as a sequence of event clusters, or schemata for action, which are triggered at specific moments or time points. These time points frequently have musical correlates, such as the ends of phrases,

(1) Both Botez, Botez & Aube (1983) and Roederer (1982) make a case, from the neuropsychological position, for the brain's capacity to experience music 'holistically'. Roederer suggests that the inborn neural networks are activated by musical sound form, which the brain is capable of perceiving as holistic in nature, rather than as being made up of disparate elements. Botez, Botez and Aube (1983), in their 'neuro-musicological' investigations, describe the complex inter-functioning of the brain. They suggest that three fundamental capacities are required for expressive musical functioning: (i) a sense of rhythm; (ii) the correct perception of elementary physical properties of sound, duration of density, timbre and volume; and (iii) the capacity to 'transpose' this perception into an emotional or intellectual context.

Two important points are made here: firstly, our brains are predisposed to hear music as a total experience, rather than music as metre plus rhythm plus melody plus timbre and so on; and secondly, that for this experience to be emotionally meaningful, we must possess the capacity to make the link between the forms of music and their emotional import. This is made possible by that link already existing within us, as I shall show later.

of grouped sequences, pauses or cadences, and the improviser makes the critical decision which defines the specifications or placing of timing events. In a group improvisation, each player's own time-point sequence will interact with that of the other players: for example, the players will agree upon, or share a perception of, where and how phrases end, pauses occur, and so on.

Pressing analyzes each event cluster as having simultaneously valid and redundant acoustic, musical and movement aspects, as well as emotional and visual aspects. Each aspect exists in two forms: intended and actual. The intended form is triggered at specific time points, and the corresponding actual form is constructed from subsequent sensory feedback. The gap between these two forms (intended and actual) reduces with training and practice. Each event cluster may be analysed in terms of 'object' (unified cognitive/perceptual entities such as chords, a sound or finger movement); 'feature' (or the shared properties of objects), and 'processes' (the description of object and features over time). The improviser makes a choice between generating event clusters which are associative (i.e. based on similarity or contrast), or interrupted (i.e. resetting all or a significant number of components, without regard for their values in current event clusters). The choice between association or interruption depends on the player's tolerance level for repetition.

Sloboda, as we have seen, (1985) examines the musical

form of improvisation as a process of perceptual learning and suggests that formal musical constraints are placed on the improviser by his or her culture. Once the performer is familiar with these structures, and their specific harmonic or melodic progressions, he or she will embellish them either by varying them, adding passing notes and chords or by moving away from them before returning to them, as in a jazz riff or a set of improvised variations. Pressing (1984) expresses a similar concept of musical creation, when he writes of the improviser's 'referents' which are central to the improvisation, and which may be a musical structure, a mood or a motive. The relationship between the referent and the improvisation is variable, and includes the use of imitation, canon, counterpoint and variation; or the improvisation may be independent from the referent. Only what Pressing calls 'free' or 'absolute' improvisation has no referents; and when an ensemble are improvising, a more detailed referent is needed to provide information about the relationships between players' improvisations. He says that when there are no agreed-upon referents between the players, then they are playing in co-existing streams rather than inter-relating musically.

1.3.2.1. Comments on the Cognitive Psychology of Music (Part II)

The useful aspect, for my purposes, of these models of the active cognitive framework, is related to the fact that in her training, the therapist has 'learnt' to construct and develop mental/musical schemata such as those described above (I discuss

improvisation in music therapy fully in Chapter Three). In her improvising with the patient in music therapy, some cognitive processes are no doubt engaged. However, in the clinical situation, the therapist is dependent upon the patient for the timing, flexibility and quality of 'musical' cues, which may, because of the emotional disorder, be unstable, unpredictable, and thus may not provide the therapist with a schema. This inter-cueing is not dealt with in the above models.

A more important limitation of these models, though, is that the focus of the therapist's intent in music improvisation is NOT just to play music, but to establish a dynamic and responsive emotional rapport with another person. Thus, the behaviour (or music) is more than just a structured sequence of motor or sound patterns, or of coded improvisational referents as cognitive psychologists would have us understand: the music is revealing critical information about an individual's capacity to interact meaningfully and emotionally with another person. Thus, a purely cognitive 'musical' analysis of the musical structure or of the evolving musical process is inadequate, in the sense that it does not tell the whole story.

This conclusion is unwittingly supported by Lee (1989), who analyzed in great 'musical' detail, a joint improvisation between therapist and patient in music therapy. He treats the two players' utterances as forming one whole composition and examines the melodic, harmonic and rhythmic content, as well as patterns of consonance and dissonance. After this thorough work, he

remains unclear as to whether the analysis has revealed much about the quality of the relationship between the therapist and patient or, as he puts it, about the relationship between "...behavioural affect and musical structure.." (p.18). His mistake, in my opinion, is in treating the improvisation as a 'musical' exercise. He applied formal musical analysis in the hope that it might reveal something about the emotional rapport between the players, and he was disappointed. He concludes that a different paradigm will have to be developed in order to ascertain both the musical and therapeutic aspects of the improvisation.

I conclude that perceptual models for describing the musical improvisation in music therapy are of limited usefulness. The problem of assessing improvisation in music therapy will be discussed further in Chapter Three.

1.4. MUSIC IN COMMUNICATION AND COMMUNICATION IN MUSIC.

It is my thesis, then, that in music therapy, the quality of emotional rapport between the players, or the motivation elicited in the players by the emotional rapport, will directly determine the inter-musical process in the improvisation, or, to put it another way, the players' communicative intent is revealed through music improvisation. Here the indexical relationship between music and emotion is recalled: its implications are that the music will excite the players and, because of the active character of improvisation, it

will also be excited by them. My thesis gains support from the literature on mother-infant interaction, which makes a strong case that the emotional or motivational intent underlies both the intra-personal and inter-personal coordination of behaviour. It is this impulse that makes it possible for persons of any age to interact meaningfully with another person. In music therapy, this communicative impulse is revealed through the improvisation which is jointly created by therapist and patient. Before discussing mother-infant interaction in detail, in Chapter Two, I conclude this chapter by focusing on some salient and relevant issues regarding Music and Emotion.

1.5. CODA: CLARIFYING RELATED ISSUES.

1.5.1. Musical Form and Emotional Form.

The issue of Musical Form needs attention. If one chooses to do a 'purely' musical analysis of clinical improvisation, one could assign it formal structures such as, e.g., Rondo form, or Binary form, thus setting the improvisation within a musical style which has evolved within a particular musical tradition. This is focusing (as was Lee, 1989) on the 'purely musical' formal structure of a musical piece and, as I have suggested, it does not reveal the essentials of human communication.

However, it should be emphasized that I am not proposing that music composed or improvised in these stylistic forms is devoid of 'emotional' content. It is just that, as Stravinsky (1974) puts it, stylistic forms provide boundaries

within which the composer can express himself. Stravinsky speaks of needing a narrow framework within which he can create, since he finds the abyss of total freedom in composition 'terrifying'.

Bjorkvold (1987) provides a different angle on musical/emotional form. He discusses musical form in young (4 to 6 year olds) children's spontaneous vocalizations, which he studied in Scandinavia, Leningrad and Southern California. These vocalizations are, of course, not syntactically or aesthetically refined or sophisticated, as are stylistic forms. Rather, they are produced as a natural expression of the child's inner dynamic life, and their form, which is highly subjective, is a function of the role of the vocalization in fulfilling the child's immediate needs. He cites an example of a child playing with a paper aeroplane, whose glissando vocal sounds will accompany the motions of the plane's movements. Spontaneous vocalizations, such as solitary song monologues, tend to have a fluid, amorphous form, and their role can be to provide the child with access to, or an opportunity to experiment with, his inner world. In this sense, they are solitary and intra-subjective, although they can also be used to great effect socially.

Musical speech acts, whose role is to communicate specific social intentions, such as teasing, calling, commanding or relating to another, tend to be brief: Bjorkvold describes specific intervals, such as the falling minor and major third, which he has found in several cultures. Pre-set songs can also have a social as well as cultural function: they imply a group

cohesion or structure. They can accompany either solitary or group play activities, and provide a contextual frame, or an emotional back-up to the activity.

This creating of sound form for emotional intent by children is nearer to the creation of musical form in music therapy improvisation. This form, which I call 'Dynamic Form', is a form whose features are not exclusively musical, but neither are they exclusively emotional. Rather, Dynamic Form is a consequence of its psychological function, which is to explore, communicate and receive emotion in organised sound. I discuss 'Dynamic Form' in detail in the next chapter.

1.5.2. Is every improvisation emotional?

I am not suggesting that every musical improvisation between two players results in the forming of an emotional relationship. I propose, rather, that any improvisation (solo or group) reveals the players' capacity for self-co-ordination, as well as revealing something about their private experience of self-expression. This capacity can become an object of technical skill, in which case it may become obscured by, e.g. musical style; or it can become the focus of inter-relating with another. The distinction may be explained thus: in a (purely) 'musical' improvisation duet, the focus of activity is the music; its technical demands, texture, shape, motion, contours and so on. This focus may or may not engage the players' emotions - if it does, the improvisation will have "that extra something"; and if

it doesn't, the audience will say something like, "that was a great technical performance of a particular genre, but there was not much feeling in it..". In 'clinical' improvisation, however, the focus of the improvisation is the Dynamic Form or the internal states of the players: the musical improvisation duet is the external expression of the quality of the players' internal states and of their 'resonance' with one another. To a listener, the music may sound uninteresting and rather odd.

In clinical improvisation, emotion and music form an Interface. They are two sides of the same coin and, provided certain conditions are met, do not exist detached from one another. They share certain, essential aspects, but not others, since each can extend in different directions such as purely 'musical', or towards categorical states of emotion. Musical improvisation in music therapy enables the sounding of emotion through Dynamic Forms, but the role of the therapist is essential to this: the therapist's skill in reading the emotional forms of the partner's playing intuitively, as well as her capacity, through training, to meet these forms in her own, responsive improvisation, create an environment which enables the patient to hear his or her Dynamic Forms within the context of a musical interaction. It is in this context only, that musical improvisation enables the sharing of emotion.

1.5.3. Creating Music as Means of Self-expression.

Another issue which needs commenting upon briefly is that of the

act of composing or creating music as being self- expressive. This is a more aesthetically formal process than that discussed above. The composer's experiences reveal a process of self-expression which tends to be more conscious and formalised, culminating in a form which has cultivated aesthetic as well as emotional meaning. However, there are parallels with the childrens' vocalizations, in that the act of composition is meaningful for the composers at a level which is more than just 'musical'.

I suspect that the primary motivation to compose does not differ essentially from that of children to vocalize, and this is confirmed by both Aaron Copland (1952) and Igor Stravinsky (1974) who use almost identical words to describe their experiences. Copland writes of the personal need to create: each new work brings with it an element of self-discovery, providing a unique formulation of his experiences. Stravinsky, though using less personal language than Copland, also speaks of the 'natural need' to compose. He describes the process of composition as a discovery, step by step, of the work he is creating as well as the discovery of the individual (i.e. of himself). This process carries emotion for him. Michael Tippett (1974) writes of being possessed by a creative drive from within, of imagining sounds and creating music from the inner world of his imagination. Like Stravinsky, he grapples to create order from chaos. He sees his function as a composer being "...to continue an age-old tradition, fundamental to our civilization...

This tradition is to create images from the depths of the imagination and to give them form, whether visual, intellectual or musical. For it is only through images that the inner world communicates at all." (p.156).

A theme which unites these composers is that of the conscious process of organizing sound, or of the creation of form through sound. I see this 'musical' act as being inseparable from the intra-emotional process of the individual: the act of composing offers a new synthesis of the self. However, unlike clinical improvisation, this does not take place within the context of an interaction with another person; nor is the emotional form the end-product of the creative activity.

Rather, in composition, the emotional form finds realization in the musical form, and the listener then hears the musical form (to which he or she may, of course, assign emotional features). The act of creation has a deeply rooted psychic function, and must combine the musical as well as the psychic elements. This view is supported by Langer (1979), who sounds a stern warning regarding artistic creation as mere self-expression, or emotional catharsis: punching a bag or breaking plates provide a more satisfying and immediate release. The expression of self in a work of art involves the distancing and embodying of the artist's inner experiences through the process of artistic creation. Emotion without form is 'mere' self-expression, while form without emotion is sterile, she says.

1.5.4. Creativity and Autonomy: a psychoanalytic perspective.

Winnicott (1971) and Storr (1972) write about creativity from the psychoanalytic perspective.

Winnicott contrasts creativity with compliance, or fitting in with the world and its details. The expression of the creative impulse is related to the individual's capacity to perceive objectively and to conceive subjectively, i.e. it is a feature of the individual acknowledging the constantly shifting balance between his or her inner world and the outer world. This capacity implies a sufficiently developed sense of 'authentic' autonomy which enables the individual to be in the world of objects ⁽²⁾ creatively or imaginatively, that is, subjectively.

The absence of authentic autonomy may be described as the individual's incapacity to exist in, and shift between his or her inner and outer world. At one extreme, the individual may be separated from the external world of objects, which s/he may experience as having a dream-like quality. Here, autonomy is 'false', in the sense that it is possible only within the individual's inner world, which is safe, and which needs to be kept 'sealed', so that s/he has total control over it. At the other extreme, the individual may be seen as existing mostly in the external world of objects, and as being out of touch with his or her internal life. The autonomy experienced here is also 'false': by being out of touch with his or her inner world and its less-predictable movements, the individual experiences a

'false' sense of security, since the world of objects appears easy to organize and manipulate. Winnicott suggests that illness, which may be described as the absence of authentic autonomy or as the capacity to tolerate uncertainty, can be seen as the degree to which creativity is hidden. Anthony Storr (1972) takes this further. He suggests that artistic creation puts us in touch with a closer and truer reality about ourselves, by providing for 'psychic distancing' from the object. This enables us to 'realize' an object (or an emotion), by assimilating its essence and representing it actively in artistic creation. Thus, the need to create stems from the creative person's coming to terms with, or finding solutions for, the internal tensions which are a feature of human life. We are all, he writes, divided selves, in the sense that our inner world does not correspond to the external world, or to that conscious part of our personality which relates to the external world.

(2) Melanie Klein is attributed as the founder of Object-Relations Theory. Guntrip (1977) sees it as a breaking away from Freud's bondage to natural science: 'instincts' are rejected in favour of interpersonal experience as a fundamental aspect of human experience. An Object may be described as something in itself, with its own nature and behaviour, which is meaningful for the individual. It may exist in our external world, as Winnicott's transitional object (or the teddy bear or blanket to which the infant becomes attached); and it can be internalised and experienced as a 'good' or 'bad' part of our inner world. (Guntrip, 1977; Winnicott, 1971)

Creative people are exceptionally aware of this division, and have an ego which is strong enough to tolerate it. Storr sees creativity as a positive adaptation to inner (and ubiquitous) psychopathology, facilitated by an easy access to the inner world. Thus, their ego can be described as being strong, as well as 'permeable'. In contrast, people who cannot adapt to their psychopathology or are overwhelmed by it, suffer from varying degrees of neurotic or, more severely, psychotic symptoms. The severely psychotic person cannot adapt to the outer world and lives in an inner world of fantasy, which s/he creates to accomodate his or her psychopathology. The neurotic person, whose ego is strong enough to adapt to the outer world, but who does not adapt 'positively' to his/her psychopathology will experience neurotic symptoms in the outer world. Storr clarifies why creative people are liable to be labelled neurotic: in both cases, their inner psychopathology is 'showing'. However, artistic creation is a 'positive' adaptation, and neurosis is a 'negative' one. Creativity, he says, is overwhelmed by psychosis and, contrary to popular belief, the great artists who suffered from bouts of psychotic illnesses were unable to be creative during their acute episodes of illness.

Despite this summary being a facile view of an immensely rich field, it is useful to me in clarifying the link between the organization of the individual's intra-psychic life,

or emotional dynamic, and his or her capacity for relating to the world of objects in a creative way. The experimental part of this thesis (Chapters Six and Seven) illustrates this clearly: the two studies show that people with emotional difficulties have more difficulty in organising their musical improvisations in such a way as to establish a two-way interaction with the therapist: their improvisations reveal Dynamic Forms which are either fragmented, inflexible or incoherent to the therapist. It is the 'emotional' creativity - or the individual's capacity for autonomy - rather than 'artistic' creativity which is being tapped in improvisation in music therapy, despite the 'artistic' or 'aesthetic' medium being used. This is because the ingredients or elements of music reveal this intra-psychic dynamic directly, without referential or semantic meaning to confuse the psychological information that is exchanged, i.e. the relationship between them is indexical.

In this sense, clinical improvisation is 'basic' or 'pure' communication, similarly to the intimate, non-verbal and emotional communication between a mother and her infant. This concept will be elaborated in the chapters Two and Three, wherein I discuss non-verbal communication and clinical improvisation.

CHAPTER TWO

2.1. MOTHER-INFANT INTERACTION AS A MODEL FOR IMPROVISATION.

Recent studies in mother-infant interaction have used microanalysis of videotaped exchanges, to focus on the mother and infant as an interactive unit. They demonstrate the intimate emotional bond between them, which is possible despite the 'inequality' of the partners or the 'asymmetrical' relationship between them (Beebe et al, 1985; Censullo, Lester and Hoffman, 1985; Tronick, Als and Adamson, 1979).

These studies have altered our understanding of how infants experience the world about them. We now know that infants are inherently active participants in the experience they have of the environment, rather than passive receivers of information about it; and we also know that in order to get to know the world better they are dependent upon an intimate emotional relationship with their mother (Trevarthen, 1987). Within this relationship sensitive mothers assist their infants to learn about themselves-in-the-world. This apprenticeship about the world and themselves-in- the-world is inseparable from the affective qualities of their relationship with their mothers. Moreover, this sensitivity of both mother and infant towards one another is in part a naturally musical one. I report on salient studies to clarify this.

2.1.1. Musical and Temporal Features of Interaction

Papousek and Papousek (1981) discuss the communicative

significance of the prosodic aspects of the vocalizations of mothers and infants. Parents respond to infants' earliest vocalizations as being communicatively meaningful, and this reinforces the infant's capacity to use his or her voice in a communicative sense. Their analysis revealed the prominent features of the dyad's vocalizations, including stresses and rhythmicity, which are interactional in that they are not uttered into a communicative void or a self-centered world, but take into account the other partner's utterances. In the mother's vocalization, expanded pitch range, frequent melodic repetition and continuous changes of pitch, as well as the prevalence of basic harmonic intervals were features of what they call 'babytalk' or 'motherese', i.e. a language made up of specific prosodic features in order to engage the infant. They suggest that the consistent presence of musical or prosodic elements in the mothers' responses gives the infant attributes and familiarity. However, the musical elements do not develop as isolated or solitary phenomena, i.e. the 'musical' dimension of the vocalization is not an aim in itself, and (most) parents do not vocalize with their infants in order to turn them into musicians. Rather, the musical elements are part of global behaviour within the intuitive and universal context of social interactions.

Their work confirms the findings of Tronick, Als and Adamson (1979) who in turn confirmed earlier findings by Stern

(1974) and Brazelton (1974). In their microanalysis of face-to-face interactions of caregivers and young babies (aged from 11 days to three months), Tronick, Als and Adamson showed that caregivers' activities differ from adult-adult communication by being more varied in rate, modulation, intensity and amplitude, and they are slower and more exaggerated. Other features of mother-infant communication included mothers' constantly modulated speech and rhythmic tapping and patting of the infants' bodies in order to maintain the babies' attention during the exchanges.

Beebe et al (1985) used a model of adult dialogue to study prelinguistic communication, and analyzed video-recordings of mothers and infants aged 3-and-a-half to 4 months. They showed that the interpersonal matching of temporal patterns and gestural events mutually influence the mother-infant interaction. In contrast to adult dialogue, the mothers tended to provide a constant rhythm, which is characteristic of ritualized speech or psychopathology in adults, rather than matching the rhythmical cycles of the infant.

These and other studies, although clarifying different aspects of interactive features, have a common theme: they demonstrate the sensitivity and susceptibility of mother and infant to one another. They also suggest that the mother adapts her 'normal' or 'adult' way of responding and communicating in order to engage her infant. The prosodic flexibility of the infant, long before the learning of verbal language, lends

support to views that stress the critical role of the quality of this first relationship in the infant's later life (Marwick, 1986) . Prosody in spoken language has a critical function, not only in focusing or altering the semantic and psychological meaning of spoken language, but also of carrying emotional meaning and attitudinal information about the speakers towards one another (Crystal,1987) . Furthermore, it is precisely these temporal features which characterise emotional rapport between two conversing adults who show a high degree of empathy (Feldstein & Welkowitz, 1978) .

2.1.2. The Innateness of Temporal Sensitivities.

Some psychologists consider these interactional sensitivities to be innate and critical for the infant's survival. Tronick, Als and Adamson (op.cit) propose that the capabilities for social communication, the rules and implicit knowledge of patterns and intentions to communicate must have a phylogenetic base - this accounts for the smoothness of the communication and the infants' extreme sensitivity to the other, from a very early age. In their theoretical paper, Brown and Avstreich (1989) discuss studies on "interactional synchrony" and conclude that this capacity exists at birth.

Trevarthen (1980,1987) and Stern (1985) state that the infant is born with the motivation to engage in an intimate emotional relationship from birth. Not only must the infant and mother 'know' one another, since, biologically, the infant is

utterly dependent on the mother for the fulfillment of physical needs, but the mother too needs to 'know' the baby's needs. They both need to 'share' meaning: to have a common experience of themselves, so that the infant may experience himself within the context of a relationship. This relationship is critical for the infant developing a sense of him or herself as a social being, and as part of a human community.

2.1.3. A Sense of Subjectivity

One of the concepts to emerge from the above studies, is that each partner responds to the other in a co-ordinated or organised way. These coherent temporal structures indicate the presence of an inner organization of patterns and pulses which have their basis in the brain, thus enabling the physical and neurological co-activation of separate parts of the body (Trevarthen, 1986). Pribram (1982) states that the entire brain is involved in regulating behaviour: each part has a specific role in the totality of behaviour, thus ensuring smooth changes and stability of actions. (An obvious exception is found in people who have a physical handicap as a result of, for example, Cerebral Palsy, brain injuries or strokes - this is outwith the scope of this thesis, and all my discussions are based on people whose physical functioning is intact.)

These internal patterns enable the partners to communicate as cohesive beings, and to perceive one another's acts as cohesive forms (thus, the infant perceives the mother's

acts as a temporally coordinated whole, rather than as disparate fragments of behaviour). The temporal flexibility or fluidity of these patterns enables the partners to respond flexibly, and to complement one another's gestures, facial expressions and vocalizations. Trevarthen calls this capacity for organizing and coordinating states and processes 'subjectivity'. He writes that subjectivity is "...the condition of being a coordinated subject, motivated to act with purpose in relation to the world outside." (Trevarthen, 1980, p.324). A sense of subjectivity - or an intra-subjective coordination - is crucial in interacting with the world. This internal sense of form is a foundation or a basis for co-ordinating with another person.

2.1.4. Intrasubjectivity and Intersubjectivity

In order to achieve communication, the movements or acts of one being must become a stimulus for the other: the motivation of the latter must be changed. The success of the communicating behaviour depends upon the individual's ability or capacity to read the information which is carried by the movements or acts of the other person.

Stern (1985) writes, "First, the parent must be able to "read" the infant's mental state or inner experience from the infant's overt overt behavior. Secondly, the infant must be able to "read" this overt parental response as having to do with ("reflecting back," etc.) his original experience." (p.249) Thus, a newborn infant has the capacity to 'read' the mother's

emotional signals in various modalities, i.e. her voice, gestures, movements and facial expressions and to coordinate these disparate signals into a form which is meaningful for him or her, in that it conveys information about the mother's emotional state and its changes.

This may be illustrated by an example: a male infant moves his arm in such a way as to cause an object to flop about. This movement is perceived by the infant and by another person (e.g. the mother) to have a certain 'physiognomic' quality: it is irregular, quick, and comes to an abrupt stop before suddenly jerking in another direction. These qualities reveal to another subject the infant's internal state of motivation. The mother apprehends the form of the movement ie, its tempo, irregular rhythm and unexpected lengths of phrases, and can express these qualities completely as her feelings in her vocalization which 'accompanies' the infant's arm movement. Through apprehending the infant's forms, she has taken in a sense of his internal state and its change. The infant recognises the form of the mother's vocalisation as being related to his arm movement. He feels she has a feeling of how he feels. He then changes the quality of the movement, for example he decreases the speed of his arm movement, expressing a variation in tempo, and then he awaits the corresponding change in his mother's voice. In this way, the infant learns about how his own alteration of the form is perceived and reflected by another through vocal sounds. He explores the link of feeling between himself and his mother

exchanged in different modalities. For this to happen, he is dependent upon his mother being sensitive to the emotion in the forms of his movement.

It is through sharing his or her feeling world with another - his mother - that the human infant defines and extends his/her sense of self-ness: s/he gains insight (or has his insight reinforced) into him/herself as an emotional and communicating human being, by experiencing his/her actions (and impulses to action) through the mother's response to them - whether she imitates, extends, complements or inverts them. The infant knows that she knows how he/she feels about their contact and their relationship. The absence of this experience within the intimate association a failure of sharing aspects of himself with another, may cause the infant to remain profoundly isolated or unrelated, emotionally and socially. Thus, the quality of one's first relationship can be, or can be conceived as being crucial in our learning about the world and ourselves within it and it confirms that we are placed in the human condition. (Stern, 1985, p.156).

Knowing and interacting with another's internal state has been termed inter-subjectivity (Trevarthen, 1980; 1986), and the mother's adjustment of expression to match that of her infant is called affect attunement (Stern, 1985). When the relationship is actively intersubjective, as in protoconversational play, both infant and mother initiate, complement and respond to one another in a highly fluid and intimate dance, within which their internal

states resonate with and complement one another through their apprehending one another's Dynamic Forms.

2.1.5. Matching and Mis-matching

Stern makes the point that when the correspondence between mother and infant is well-matched, the infant frequently reacts by not reacting, e.g. he or she may continue being the way they were and expressing self-satisfied pleasure in communication, whereas when there is a mis-matching, when, for example, the mother over-attunes or under-attunes to the infant's action, the infant's reaction communicates to his mother an alertness to this, e.g. he or she may stop the activity and look at her with puzzlement. Tronick et al (1979) and Papousek and Papousek (1981) comment on the quality of mis-matching, proposing that in a sensitive mother, the quality or degree of mis-matching will not be beyond her baby's capabilities, and will offer him a more complex and expanded environment to grow into. A consistently perfectly matched environment, although enhancing communication at that moment, would not provide for growth. Winnicott makes a similar point when he talks about the inherent frustration of growing older: the mother-as-object does not always act or react as though she were an extension of the infant (Winnicott, 1971).

Lynne Murray's perturbation studies with infants of 6-12 weeks old, have shown that gross mis-matching by a mother's expression to the expression of their infant results in the

infants showing signs of distress. The baby tries to attract the mothers' attention and eventually becomes withdrawn. Murray also showed that the quality of babies' attention towards their mothers alters depending on the nature of the perturbation. Thus, when mothers' attention was distracted by a person entering the room, the babies remained relaxed and undistressed, their attention to their mothers decreased and they looked at the new person. However, when the interruption was caused by the mother assuming 'blank face condition', where, under the researcher's instruction she ceased to respond but kept a blank face, the babies' efforts to communicate with their mothers increased for a time, they showed signs of distress and finally became withdrawn and uncommunicative (Murray and Trevarthen, 1985; Murray, 1988).

2.1.6. Emotional Disorders and Damaged Interactions.

Studies suggest that mental illness interferes with the capacity to participate reciprocally in direct, intimate communication. Mothers who are mentally ill are unable to provide their infants with an environment which is interactively receptive. They fail to respond to their infants in a manner sufficiently sensitive to provide their infants with experiences of being 'known' intimately (Murray, 1988; Radke-Yarrow et al, 1985; Weissman, Paykel & Klerman, 1972; Williams & Carmichael, 1985; and Zajicek & De Salis, 1979). These studies also show that the absence of this intimate and mutually satisfying early relationship may damage the infant's capacity for entering into

other meaningful relationships, and this has implications for the child's social and educational development when s/he is older, even though the mother may have recovered from her illness. Thus, once again, the crucial role of this first relationship is implied.

Another strong case for the link between mental illness and the capacity to organize and adapt gestures and acts in communication, is made by Condon and Ogston (1966). They recorded onto film, conversations between 'normal' and mentally ill adults, and micro-analyzed the speakers' movements and speech. Their analysis demonstrates that severely withdrawn adults, such as people suffering from schizophrenia, showed an incapacity for what they call "self-synchrony", that is, the temporal features of their own speech and body motions were not synchronised with one another, in contrast to the 'normal' adult speaker. They also noted the "semi-frozen" body motion of these patients, the "flattened" communicative presentation of speech, their limited range of prosodic features, and the absence of variation in their head movements. They also found that those parts of the patients' bodies which showed "self-dissynchrony" could not enter into an "interactional synchrony" with the normal partner, whereas those parts of their bodies which were self-synchronised could do so.

Brown and Avstreich (1989) lend support to this research in their paper entitled "On Synchrony". They discuss the shared rhythmicity of behaviour which they see as fundamental to sustaining rapport in social encounters. They also suggest,

although theoretically, that in chronic schizophrenic patients, the innate capacity for "interactional synchrony" may be constitutionally impaired.

2.2.THE AMODAL QUALITIES OF FEELING AND OF MUSIC.

Stern uses the term 'Vitality Affects' to describe the dynamic shifts of feelings within us, for eg. "surging", "fading away", "fleeting" and "drawn out" (Stern,1985; Stern et al,1985); and proposes that the qualities which are common to all modes are: intensity, shape, time, contour, motion and number. These, says Stern, exist in the mind as abstract forms, and are not inextricably bound to a particular mode, or even to the world of feelings at all - and it is these which permit us to experience a perceptually unified world.

Amodal properties of feeling and action can be recognised in any of the senses: thus we understand the meaning of a child bursting with energy, a burst of temper, a burst watermelon, bursting into tears, a burst of speed and so on. The 'bursting' is the dynamic form of the action or feeling, irrespective of whether it is a positive or negative emotion, or of whether there is any feeling component at all. In music we speak of a sforzando, to illustrate a burst of sound. This information does not need to be carried in the same modality in order for the communication to be successful (Trevarthen,1986). For example, the baby's acts, expressed through different modalities, such as facial expression, body movements or vocal

sounds, will have common properties of tempo, intensity and shape, smoothness or roughness of texture, and so on. Thus, the critical invariants of the emotional signals exchanged between mother and infant (i.e. what the signals are saying) are not restricted to any one mode of expression: they are cross-modal or supramodal, and the message, whether it is one of a state of 'calmness', 'urgency' or 'lethargy' can be expressed through any mode, be it vocal, gestural or through facial expression. (Murray and Trevarthen, 1985; Stern, 1980; Trevarthen, 1980; Tronick et al, 1979; Trevarthen, 1980).

It is such abstracted forms of motive for communication made in the infant's mind that create the essential information about natural forms of emotion between mothers and their infants. I call these abstracted forms *Dynamic Forms*. It is the Dynamic Forms of actions and their relationships, rather than merely the separate actions themselves, which enable the mother and infant to know one another intimately. The inter-regulation of their actions is more than merely imitative: this would imply that the purpose of these inter-regulations was to learn the separate actions themselves, with the focus of the engagements remaining external. The inter-regulating of actions enables both partners to know that their subjective, internal state is intersubjectively shareable with and knowable by one another - their intentions, or impulses to act and feel are reciprocal.

Aaron Copland (1952), in his description of the elementary plane of musical consciousness and the primary level

of human response to music, is, in fact, speaking about the abstracted form of music and of feeling. Our inner mental life, (as he puts it) and our psychologically based reflection of our physical life of movement and gesture enables us to experience the tension and release, the smoothness and roughness, the swellings and subsidings, the pushing forward and hanging back, the thunders and whisperings, of music (p.14). This, he proposes, is the fundamental way we experience music, whether we are musically gifted or not.

Suzanne Langer (1967,p.64) is expressing similar concepts when she states that the patterns of tension and resolution, inherent in all art, reflect human feeling. Feeling, she writes, is like the dynamic and rhythmic structures created by artists: artistic form is always the form of felt life, whether of emotion, impression or overt action. The artist, in projecting forms of feeling into audible or visible material needs exact and intimate knowledge in these 'passages of sentience' which he succeeds in expressing.

Although he uses different terminology, Arnheim (1986) makes the same point. In discussing the relationship between music and 'states of mind' (which I take to mean the world of feelings) he points out that musical expression is not based on a stable relationship between the two separate phenomena, (e.g., the minor key does not always mean sad or lethargic) but on a single dynamic structure which is inherent to both the feeling and to music. He elaborates on the amodality or abstractedness of

dynamic forms:

"..expression is the capacity of a particular perceptual pattern to exemplify through its dynamics the structure of a type of behavior that could manifest itself anywhere in human experience." (p.222)

An interesting, if tangential, link can be made between these amodal properties of feeling, and the characteristic features of creativity, as hypothesized by Guilford in his Presidential Address to the American Psychological Association in 1950 (Gorder,1980; Hargreaves,1986). He proposed that the four basic characteristics of creativity were fluency, flexibility, elaboration and originality. His 'psychological' explanations are disappointingly bland: for example, fluency is the capacity to give multiple answers to the same information; flexibility as the capacity to assign shifts of meaning; elaboration, to give more detailed or expanded response to information, and originality is the capacity to give novel interpretation to information. However, there is a hidden implication, which links this more formal description of creativity with the amodality of human experience. Both suggest the capacity to transfer the essential quality of a piece of information or a gesture, across a mental or a modal divide.

This is interesting when viewed in the context of what Winnicott (op.cit.) had to say about creativity (see p33): that illness is the extent to which creativity is revealed. Illness,



in my view, is also the extent to which the capacity to interact is diminished or damaged. (Condon & Ogston (op.cit.) showed us earlier that illness is manifested in self- and in interactional dissynchrony). It is this capacity which music improvisation reveals in music therapy.

2.3. MUSIC IN DYNAMIC FORM AND DYNAMIC FORM IN MUSIC

It is the amodality or cross-modality of feeling form, clarified through mother-infant interaction research, which underpins my thesis about music improvisation as basic emotional communication. The intimate, inter-subjective interaction between a mother and her infant can be described as a 'dance', with all the complexities and subtleties of a musical improvisation duet which include expressive features of tempo, such as *accelerando*, *rubato*, *ritardando*, *allargando*, *ritenuto*; of dynamics, such as *sforzando*, *crescendo*; and emotionally coherent modulations of timbre and of pitch. These expressive features, described above in musical terms, correspond with the intrinsically organized, inherent Dynamic Forms of emotions. These dynamic forms exist as abstract functional entities given in the mind, and are signalled through the qualities of our expressive acts, and through the expressive quality of musical improvisation.

2.4. MUSIC THERAPY IMPROVISATION AND MOTHER-INFANT INTERACTION.

The parallel between music therapy improvisation and mother-infant interaction needs some comment.

In mother-infant interaction, the partners do not have a choice about being 'non-verbal', since the infant cannot speak, whereas in music therapy there is a deliberate choice, by the players, to interact non-verbally.

In both situations one partner (the mother/ therapist) is more experienced than the other (infant/subject).

In mother-infant interaction, the interaction is cross-modal, e.g. the mother may use her voice to respond to an infant's gesture; whereas in music therapy the interaction is mono-modal, i.e. both players are using music to interact. Music provides the opportunity for the players to embody, express and communicate the vitality affects of time, contour, shape and form. In both situations, the overt behaviour tells us something about the partners' internal states: the referent for the match between the dyad is their internal state, not the external behaviour.

Thus, in music therapy, the focus of the interaction is not the musical behaviour per se, but the internal state that the improvisation reflects. This focusing on the 'sub-musical' is the result of the therapist having been trained to 'read' the Dynamic Form of the partner's improvisation and to respond, through improvisation, in a manner that invites the partner to explore and create his or her Dynamic Forms and hear them in sound, within the context of a meeting or a relationship.

This links up with the concept of music as index, described in chapter one. The inherent musicality of emotional

communication, discussed above, suggests that music and emotion are inextricably linked. Clinical Improvisation in music therapy expresses Dynamic Forms of feeling through sound. This form reveals information about an intra- and inter-subjective flexibility and about 'basic' or 'pure' communication, devoid of referential semantic meaning. Its meaningfulness, however, depends upon the interacting partners' ability to apprehend the 'information' or - to have a sense of the Dynamic Form of the communication.

Thus, while a purely 'cognitive' approach to musical experience is inadequate in that it ignores the emotional component of musical experience; a purely 'emotional' explanation of musical experience is not quite 'musical' enough. Clinical Music Improvisation, whose basis, as we shall see, is Dynamic Form itself, provides a pivotal conceptual fusion of these two sides of the same coin. Here, the therapist improvises in order to enter into a direct emotional relationship with the patient/partner. The meaning of the interaction is both musical and emotional, and it cannot be one without the other. The setting of music therapy within the context of human pathology also provides a clarification of this music/ emotional interface: any reduction in the capacity to engage emotionally with another person will be reflected in the Dynamic Form of the clinical improvisation. Aldridge (1989), in his description of the practice of clinical improvisation, writes the following:

"It may be inferred from this playing that one is

hearing a person directly in the world as a direct expression of those patterned frequencies in the matrix of time. ... This experience requires no verbal translation as in psychotherapy. What can be heard is the person being in the world." (p.96).

I now would like to explore the special nature of the emotional-musical relationship in music therapy, and clarify the central position that this musical relationship can come to hold for therapist and patient. First, however, I give a brief overview of the music therapy literature.

CHAPTER THREE

3.1. MUSIC THERAPY: A DESCRIPTION.

When a music therapist and a patient/client are both actively engaged in clinical musical improvisation, a highly intimate and emotionally dynamic relationship develops within the jointly created musical context. This musical relationship is the emotional focus of the music therapy session and reveals the players' alertness and sensitivity to the jointly created *Dynamic Forms*; their capacity for responding to them, for taking the initiative and shaping them, for creating them together with another person, through the medium of music.

At its most intimate and successful or satisfying, this relationship is as inter-subjective as that between mother and infant in play, which means that the partners meet and experience one another fully and directly through the improvisation. At its least intimate the partners cannot find common musical ground: their musical and emotional experience remains unshareable.

The use of music as a therapeutic medium is an extension into modern clinical practice, of ancient beliefs about the healing powers of music (Wright, 1989). It also acknowledges, and uses, the inherent musicality in all humans, persistent whether they are fully functioning or whether they are incapacitated by mental, physical, emotional or social pathology

(Bruscia,1987).

Music Therapy emerged as a formal profession in the UK in the 1950s, although there are records of correspondence and articles about the possibility of using music as therapy with hospitalised patients dating from the late 19th century (Davis,1988). In Britain there are at present three training courses, open to qualified musicians, all based in London (at the Guildhall School for Music and Drama, Roehampton Institute for Higher Education, and at the Nordoff-Robbins Music Therapy Centre). Most music therapists work with people with mental and physical handicaps, people with mental illnesses and emotional disturbances, and with people who are experiencing life crises.

The continued creation of posts for their employment in Special Schools, Hospitals for the mentally handicapped, Psychiatric Hospitals, Adult Training Centres, Community Centres and as part of Psychological Services demonstrates a growing confidence of public services in this new profession. The Journal of British Music Therapy was launched in 1987, and the Music Department, City University, London, established a Music Therapy Research Fellowship in the early 1980s.

The concept underlying the term "Music Therapy" is that music is used in order to elicit change in the patient. Bruscia defines music therapy as follows:

"Music Therapy is a goal-directed process in which the therapist helps the client to improve, maintain or restore a state of well-being, using musical experiences and the relationships that develop through them as the dynamic forces of change."

(Bruscia, 1987.p.5)

He makes a distinction between using music as therapy and using music in therapy. In the former, music is the primary therapeutic agent and is generated and used directly by the client, with the aid of the therapist as necessary. The therapeutic contact is between the client and the music. In the latter, music is an adjunct to the therapeutic relationship in another medium, such as verbal discussion, art, drama or movement. Bruscia also states that when music is used as therapy, the therapist's role is likely to be a more active improvisatory one, whereas the musical role of the therapist may vary greatly where music is used as part of a wider programme of therapy.

Bruscia further describes the specific roles given to improvisation in the therapeutic process. The improvisation may be "referential" or "programmatic" (p.10), in that it is used to represent something outside itself, which can then be explored by the therapist and client, either by another improvisation or through another medium. This was referred to earlier, in the discussion on Icon and Symbol in music. The verbal discussion after the improvisation will usually reveal whether

the patient's experience of the music is symbolic or iconic, or, of course, a mixture of these possibilities. Mary Priestley's Analytical Music Therapy is one example of this approach (Priestley,1975).

Where, however, the improvisation is created according to strictly musical - or inter-musical - considerations, it is a directly motivational, "non-referential" form of communication. Nordoff and Robbins' Creative Music Therapy (1975;1977) is of this kind.

3.2. MUSIC AS THERAPY: THE CLINICAL IMPROVISATION TECHNIQUE.

In this dissertation, the focus is on the use of music as therapy, the musical improvisation being the central medium for the interaction between therapist and patient/client in the tradition of the work pioneered by Nordoff and Robbins (1971,1975,1977). The improvisation by the therapist and the musical partner, establishes the interaction between them. (Bruscia,1987; Alvin,1975; Nordoff & Robbins,1975; Priestley,1975). Patients usually play on a variety of tuned and untuned percussion instruments, such as bongo drums, congas, side and bass drums and cymbals, chromatic xylophones, metallophones and Marimbas. These instruments are simple to play, needing no previous musical training. The therapist may choose to play any of these instruments, or may use the piano, guitar, her voice or an orchestral instrument to respond to the patient's playing.

Techniques of clinical improvisation were pioneered by Paul Nordoff, an American composer and concert pianist, and Clive Robbins, an English teacher of handicapped children. They met in 1958 and collaborated for nearly twenty years in their exploration of the use of music as therapy with handicapped children. In clinical improvisation, the therapist uses highly specific musical techniques to engage the patient in an interactive musical improvisation. Nordoff-Robbins therapists are trained to create improvisations with a wide range of, e.g., intensity (harmonic, dynamic, rhythmic), contour (melodic shape, harmonic contours) time (tempo changes), motion (the illusion of different tempi through rhythmic subdivisions); and to exercise disciplined and subtle control over these within a highly aesthetic medium - that of music. These are the very qualities proposed by Stern (1985) as being common to all modalities of expressive behaviour. These 'Vitality Affects' are presented in this use of musical ingredients because of the common root of basic emotional communication and of music.

The therapist's aim is to create interactive improvisations by 'reading' the Dynamic Forms of their patient's musical utterances and responding to these musically, with the specific goal of moving towards an intersubjective musical/emotional relationship with the patient. This is what I understand by the application of clinical improvisation techniques in music therapy. It is important to state here that

a given clinical improvisation does not 'symbolise' or 'represent' a particular emotional state in an arbitrary technical code. There is no simple one-to-one relationship between form of expression and feeling, as Clynes would have us believe (see p.9). Nordoff and Robbins illustrate this point with a description of the features of musical behaviour, 'healthy' or 'pathological'. For example, a fast tempo may indicate tenseness, over excitement or obsessiveness, or it may indicate an alertness, playfulness and buoyancy (1977: pp.158 & 159). The clinical improvisation is simply drawing out and presenting the patient's capacity for organising Dynamic Forms in different ways, for re-creating their boundaries, for trying out new forms - within the context of a shared communicative relationship. We saw earlier that the capacity for self-organization is inseparable from the motivation to interact meaningfully with another person.

3.2.1. Sharing Musical Space

A useful analogy in understanding clinical improvisation techniques, is provided by the paediatrician, Winnicott's description of playing with a child. Playing takes place neither in the inner world nor in the outer world, but in the potential space between mother and infant. Play offers the possibility of testing the fluidity of boundaries between the self and other, and the baby develops the capacity for playing

with ideas introduced by an other. This paves the way for further playing together in a relationship. The baby's use of the potential space of communication is related to his confidence and trust in the adaptability and dependability of the environment provided by the partner. Where there is mistrust and fear of the environment, the creative potential of the potential space is threatening and frightening, since it is felt that it may disappear or disintegrate. Where the potential space can be filled confidently with the products of the baby's imagination, it offers the opportunity to shape and reshape images (Winnicott, 1971; 1988).

In a similar way, when a music therapist and patient are able to create a shared musical space between them, within which both can express themselves by playing, then an intimate and dynamic inter-subjective relationship is possible. For this to happen, the therapist needs to enable the patient to express him or herself through the music; she needs to apprehend the Dynamic Forms of his or her expression and give meaning to these by responding dynamically in a way which the patient him/herself apprehends, i.e. the two players need to share a reciprocity of intention in their expressions.

This relationship is central to the music therapy session, and it has no need for words: the therapist does not need to know what the forms refer to; or what their context is in the patient's life. This is because of the essential emotional

level of this communication, which reveals non-referential, motivational aspects of the communicating being, and not discrete categories of emotional states, such as 'anger', 'joy', and so on.

3.2.2. Beginning a Clinical Improvisation

When using the clinical music improvisation technique, the therapist usually asks the patient to begin playing. The relatively simple percussion instruments provide an instant experience, in the sense that, in contrast to wind or string instruments, a high level of technical skill is not required in order to play them. At times, however, the patient's inhibition about playing music needs to be overcome. This is discussed in Chapter Five. The therapist listens carefully to the patient's initial musical utterances: its tempo, rhythmic structure (or lack of it); melodic shape, phrasing, the quality of its pulse or beat (is it regular, irregular, intermittently regular and irregular?). In these first solo moments, the patient's capacity for organizing Dynamic Form begins to be revealed. We have seen above that a capacity for synthesising, perceiving and reproducing Dynamic Forms of expression is innate in humans. By playing music freely, the patient reveals something about his or her capacity to organise fundamental inner emotional processes through sound. This playing reveals to the therapist, within a few seconds, something about his internal psychic organisation/

disorganisation.

The therapist then joins in, improvising in a manner which reflects or confirms aspects of the patient's musical utterance. Thus she will match the tempo and dynamic level, play in the same meter and pulse, if this is regular, or attempt to match or complement the pulse if it is irregular. The therapist's first goal is to meet or blend with the patient's music, thereby providing an accepting musical environment within which both players' improvisations can make emotional sense to themselves and to one another.

3.2.3. Supporting and Extending

The therapist does not only support the partner's musical utterances, however, since this would fail to offer a therapeutic experience. Too complete a support may also deny the patient the opportunity of extending his or her pathological expression to one which includes more 'healthy' parts of him or herself. This parallels the process in mother-infant interaction where the mother and infant do not merely imitate, reflect or mirror one another's behaviour. Such reflection would quickly limit the interaction to a stereotypic exchange of information about the movements or actions themselves, and not the motives for communication that are generating them.

For example, a patient who plays a perseverative repetition of the same rhythmic motive, with no variation of

tempo or extension or alteration of the rhythmic pattern, is uttering a narrow and unvarying musical message. The therapist can meet the patient's playing by matching the meter, tempo or rhythmic pattern. Later in the improvisation, she may offer variation of existing musical material by, for example, extending the rhythm, or varying the tempo. This gives a new potential musical direction for the joint interaction. This extending or altering of the music by the therapist is called 'clinical intervention', and is a key feature of the technique. A crucial aspect of the intervention is that it must be appropriate to the preceding musical context. In the same way, a mother who offers alterations in actions to her infant must be sensitive to the level of over- or under- attunement which her infant can absorb.

The therapist's clinical interventions are a way of checking the patient's capacity to be flexible with the Dynamic Form expressed through sound: can the patient allow this form to ebb and flow, to accumulate tension, to slow down quickly or slowly, to speed up, and so on? By checking this, through improvisation, the therapist gains insights into the patient's emotional profile and, at this early stage, attempts to establish whether the patient acknowledges the therapist's playing as being related to his or her musical utterances. In other words, the therapist is testing the interactive potential of the improvisation.

3.2.4. Resisting and Initiating

When the patient fails to respond to the therapist's clinical intervention, but continues to play in a narrowly defined personal motive, he or she is identified as resisting the development of the improvisation (Steele, 1984). Where the patient responds, no matter how tentatively, this conveys an acknowledgement of the interactive features of the improvisation. The latter patient is beginning to explore and expand his or her range of musical expression, with the support of the therapist's improvisation and within the context of the shared musical medium.

Subsequently, the therapist notes the quality and range of the patient's responses, listening to an audio recording of the session and usually notating any relevant musical material. This material can be used in future sessions, so that the musical product of their joint efforts becomes familiar to both players over the (normally) weekly sessions. In time, a musical structure is identified which, by being familiar, enables the patient to take the musical initiative and to participate in the shaping of a recognised theme.

For example, the patient may come to know that at a certain moment in a march, which has been developed over several sessions, there is a cadential moment followed by a change of metre, e.g., from a 2/4 to a 3/8 . When the patient has gained

sufficient confidence in his or her ability to be fully part of the march, he or she may spontaneously give a loud cymbal crash to punctuate the cadential moment, and then use the bongos to participate in the compound duple musical material. Here the patient is taking the initiative in selection of an instrument, and is offering the therapist a potential new direction. The cymbal crash at the cadential moment is noted, and the therapist may develop music which takes this up, offering more cadential moments, inviting more cymbal crashes, and this may, in turn, lead to a quieter waltz, using the cymbal. By jointly defining the beat of the music and by exploring the potential of the shared melodic and harmonic improvisation the therapist and partner come to know one another in an intimate and dynamic interaction of music, inter-subjectively, just as a mother and infant come to know one another's expressions.

The therapist's clinical intervention motivates the patient to extend and adapt his or her musical performance, that is, the joint improvisation provides an inviting opportunity for the patient to recognize dynamic forms, to try out new bits of them, to recombine them and to form new patterns. This is the essence of the therapeutic process in music therapy.

3.3. BENEFITS OF MUSIC THERAPY.

It has been observed that the increase in motivation generated through a course of directed music improvisations

extends to benefit the patient's feelings of self. The gain in self-confidence and well-being is frequently reflected in improvements in other areas of the patient's expressive life, including speech and language development (Bruscia, 1987; Nordoff & Robbins, 1971, 1975, 1977). The music therapy is claimed to lead the patient to experience increased confidence in forming all kinds of meaningful and satisfying interactions and relationships with other persons.

These claims are not surprising if we consider music and emotion to be the interface of one another. We have seen that increased flexibility in intra-personal organization is manifested in inter-personal flexibility and organization. By listening to, and engaging with, the quality of the patient's Dynamic Form, revealed in the joint improvisation, the therapist will have a sense of the patient's intra- and inter-active capacities.

The therapist will work with the Dynamic Form therapeutically, in order, for example, to increase the patient's capacity to accumulate musical/emotional tension, to lead and support him or her towards a climax followed by a resolution; to suggest to him or her, through the improvisation, a wider range of crescendo and diminuendo, of accelerando, rallentando, and so on. In other words, the therapeutic process in clinical improvisation enables the patient to experience and express communicatively the smooth and rough, the transparent and muddy,

the fleeting and sustained qualities of the dynamic features of his/her inner world. In other words, clinical improvisation extends the patient's experience of the amodal qualities of feeling, or 'Vitality Affects'. This extension, through the musical experience of these amodal qualities, will, in turn, affect the quality, or the range and flexibility, with which the patient expresses him/herself, and this will include his/her expression of categorical states of emotion.

Such observations and claims, concerning the effects of music therapy, led to my attempt to establish whether clinical improvisation techniques in music therapy might be useful in aiding the development of inter-personal skills in chronic schizophrenics, who suffer from extreme withdrawal and isolation (Chapter 7).

3.4. ASSESSMENT OF MUSIC AS THERAPY.

The validation of music therapy remains elusive, and the bewildering array of models attempting to assess music therapy is confusing to the professional community (Isenberg-Grezda, 1988).

In his review of papers in the British Journal of Music Therapy, from 1968, Bunt (1985) found that papers falling into the category of research which he describes as structured and objective, accounted for only 9% of all papers. The other categories included clinical papers, case studies, discussions of

techniques and activities without data collection, (21%); position papers which discussed current needs of the profession (12%), and reports of meetings, news and profiles (64%). He concludes his historical survey of music therapy by reiterating the warning made by Licht in "Music and Medecine" in 1946, stating that the absence of rigorous experimental research is as evident today as it was 40 years ago.

In a review of music therapy research in Britain, Bunt and Hoskyns (1987) describe two trends. The first comprises studies which examine the efficacy of music therapy by assessing the relationship between music therapy as an intervention and changes in non-musical behaviour such as eye movement, speech, and stereotypical behaviour. Such studies tend to ignore the musical process in the session. In discussing the problems of measurement in music therapy research, Adams (1987) gives support to this research strategy, cautioning against the assumption that the effects of music therapy can be observed through changes in musical behaviour. He suggests, rather, that the music be ignored, and that the measurement be applied to whichever behaviour the therapist is wanting to alter.

The second trend comprises reports which, in direct opposition to the approach advocated by Adams (op.cit), examine the musical process itself. These tend to appear in the form of anecdotal reports, which do little to enhance the profession's status or to establish it as a rigorous discipline. The

assessment models of Nordoff and Robbins (1977) and of Bruscia (1987) are notable exceptions in that they evaluate the music improvisation without being anecdotal. I discuss these two models briefly here since assessment procedure developed for this thesis is modelled on aspects of their work.

Bruscia states that, for the purpose of analysis, the most important interactions and relationships in music therapy are :

- the intramusical (within the client's music)
- intramusical and intrapersonal (between client and his/her music)
- intrapersonal (within client's self)
- intermusical (between therapist's and client's music)
- interpersonal (between client and therapist)
- intermusical group (within group music)
- interpersonal group (within the group).

(Bruscia, 1987 p.410)

3.4.1. Bruscia's Improvisation Assessment Profile.

Bruscia's Improvisation Assessment Profile (IAP) examines the content of the improvisation, describing six assessment profiles, i.e. integration, variability, tension, congruence, salience and autonomy.

Integration describes the organization of the various musical components, along a spectrum ranging from 'undifferentiated', through 'fused', 'integrated', 'differentiated' and 'overdifferentiated'.

Variability describes the organisation and relation of sequential aspects of the music. These have a spectrum ranging from 'rigid', 'stable', 'variable', to 'contrasting' and 'random'.

Tension describes the accumulation, sustenance, modulation and release of tension in the music. The five gradients in this profile are 'hypotense', 'calm', 'cyclic', 'tense' and 'hypertense'.

Congruence describes the consistency of the various musical elements with regards to levels of tension and role relationships.

Saliency describes the prominence and control of each musical element in relationship with the others.

Autonomy describes the extent to which the musical elements are used to define the role relationships between the two players, e.g. in 'leading' or 'following' the other player.

Each component of the music has a scale of quality within each profile.

The Rhythmic scale looks at issues of pulse, tempo, metre, and rhythmic patterns.

The Tonal scale looks at tonality, harmony, melody and modality.

The Texture scale looks at the fabric of the improvisation, such as assessing the register, voicing configurations, musical roles and phrasing.

The Volume scale looks at sound intensity and mass.

The Timbre scale looks at sound quality, attack, resonance and instrumentation.

The Physical scale looks at the motor actions of playing and the overall use of the body.

The Programmatic scale looks at lyrics, stories, programs, verbal reactions and interpersonal relationships associated with the improvisations.

Bruscia recommends that the therapist select the profile that s/he considers most appropriate to analyse each improvisation. This model is complicated and laborious to use, because of its numerous tangential distinctions, and does not, in my view, provide adequate definitions of the interactive musical processes. Profiles such as the Integration or Variability apply to the musical content of the improvisation, and make no mention of the qualitative contributions of the players. The Autonomy profile deals with interaction perfunctorily, defining only 'leading' and 'following' as interactive processes. (See Bruscia, op.cit. pp 403-496).

3.4.2. Nordoff-Robbins Musical Communication Scales.

In their two evaluation scales, developed to assess the musical relationship between a therapist and a child, Nordoff and Robbins acknowledge both the musical relationship and the other forms of interpersonal contact which develop outwith the musical

relationship.

Scale One: The Child-Therapist Relationship in Musical Activity, focuses on non-musical activity. Ten levels of 'participation' and of 'resistiveness' define the quality of the child's interaction with the music therapist in the sessions. At the lowest levels, the child may be oblivious and non-relating, and may move to showing peripheral awareness of the therapists, to showing an acceptance and tentative contact, and eventually progress to overt interpersonal expressive behaviour. Criteria used to define levels are behavioural indicators of the quality of interpersonal behaviour, such as eye-contact, unwillingness to be in the room, hesitation in leaving the room at the end of the session; distress or pleasure at being approached by the therapists for a musical activity, and so on.

Scale Two: The Musical Communication scale, examines the musical relationship, which is taken as being the basis for the therapist- child relationship. The therapist makes no attempt to establish a relationship with the child other than a musical one. At the lowest end of the 10-point scale, the child shows no communicative responsiveness (level one), does not use the instruments at all or may use them in a totally uncontrolled compulsive haphazard or inflexible way. From here, the child progresses through levels of evoked responses (Levels two and three), where the beating may show some slight influence of the therapists music (evoked responses), to moments of directed

responsiveness (level four), where the child shows a limited but definite response to the therapist's improvisation. At level five the child's musical responsiveness is sustained and at level six, the child's use of the instruments is purposeful and persistent. Level seven describe a mobility and sensitivity of responsiveness; level eight an enthusiasm for musical creativity; level nine musical communicativeness independent of the therapeutic process and level ten a musical-social intercommunication is established in group activities.

3.4.3. Comments on Assessment Procedures

With regards to the aims of this thesis, the two models described above are the most useful of those available for assessment, since they acknowledge the communicative aspect of improvisation. However, neither is sufficiently detailed for a thorough examination of the musical/emotional relationship between therapist and an adult patient.

The Nordoff Robbins 'Musical Communication Scale' ceases to be appropriate for my purposes at level six. In analysing the improvisations with with adult subjects in this data collection, I found that the musical interaction moved to a higher level of engagement, with the partner/patient beginning to take the musical initiative in the improvisation, leading towards a mutual musical exchange, where the two players take turns to lead and follow in the improvisation. This aspect will

be clarified in Chapter Four. Nordoff and Robbins (op.cit.) imply that level six is the musical peak, with the remaining levels describing essentially the quality of the child's responsiveness to the therapist.

Bruscia's model separates various relationships, i.e. intra- and intermusical, intra- and interpersonal and so on. I choose not to distinguish between these but see them as being intimately linked: this is because intra-personal organization is a feature of inter-personal organization, as shown by the analysis of inter-subjective interactions. Also, the concept of the music/emotion interface suggests that the musical and the 'personal' aspects of the improvisation do not need to be examined separately. The results in both the pilot and the main study, discussed in Chapters Five and Six, which show that subjects whose intra-musical organisation is chaotic cannot establish a successful interaction with the therapist, support this judgement. The "Autonomy" profile in Bruscia's model comes closest to being useful for my purposes, but is not sufficiently detailed.

The Musical Interaction Rating (MIR) developed for this study is, in a sense, a summary of the two models discussed above, and has proved to be a highly appropriate model for explaining and understanding the emotional-musical interaction in music therapy. It makes no assumptions or inferences about "what the musical improvisations mean", in terms such as those of

psycho-analytic theory. Rather, the MIR assumes the musical interaction and the emotional interaction as aspects of one mental process. Thus, someone who exists in an emotional vacuum, isolated from the world around him or her, will be unable to improvise in such a way as to engage with the therapist in a mutual, reciprocal way. His or her improvisation will be as vacuous and isolated as his or her everyday emotional experience. That is the central claim of this thesis, which is tested by experiment.

3.5. MUSIC THERAPY, MENTAL ILLNESS AND THIS STUDY.

In my examination of the effectiveness of music therapy with a group of chronic schizophrenics, the aim is twofold. The first is to determine whether the rehabilitation of chronic schizophrenics, a patient group who show a severe deficit in emotional and communicative capacity, can be aided by a series of ten individual music therapy sessions. The dearth of objective and sensitive studies in this field, as well as the chronic communication problems of schizophrenics, provided a strong motivating force.

The second aim is to gain an understanding of the inter-personal musical processes within the musical improvisations in the sessions, and to examine how these processes develop over a series of ten sessions. Here again, the dearth of suitable models for analysing the musical processes, as

well as the preponderance of studies which measure non-musical behaviour and apparently ignore the music, suggest that a gap needs to be filled intelligently.

This two-fold approach supports the view held by Bunt and Hoskyns (1987), who suggest that an examination of the processes of the musical interaction can coexist with attempts to quantify the effects of music therapy.

I now discuss the nine levels of musical/emotional contact between therapist and patient, as identified in the MIR from the analysis of the data corpus.

CHAPTER FOUR

4.1. INTRODUCING THE MIR

The Musical Interaction Rating (MIR) was developed ⁽¹⁾ for the analysis of the data collected in the experimental part of this thesis (Chapters 6 & 7). Before defining the nine levels identified in the MIR, I clarify some basic musical concepts and describe basic interactive techniques used by music therapists in clinical improvisation. I discuss the relationship between the concept of Dynamic Form and the MIR at the end of this chapter.

4.2. DEFINING SOME MUSICAL COMPONENTS.

Pulse in music is usually defined as a series of regular beats. Meter is the regular alternation of strong beats with one or more weaker beats, and rhythm refers to the grouped organisation of musical events around the pulse. Tempo refers to the rate or speed of the pulse (Clarke, 1985; Dowling and Harwood, 1986; Sloboda, 1985). Accelerando is a gradual increase in tempo or speeding up of the pulse. Ritardando is a gradual slowing in tempo. Rubato is a balanced stretching of the tempo in both ways: thus, a lingering or hurrying over some notes earlier in the

(1) Although the MIR was conceptualised and developed by myself, I cannot ignore the role of music therapy colleagues with whom I discussed, defended and argued the various points, in formal meetings and seminars as well as informally. These discussions resulted in several revisions of this instrument.

phrase will be compensated later in the same phrase by a hurrying or lingering (Oxford Dictionary of Music). Crescendo is a gradual increase in volume of sound. Decrescendo or diminuendo is a gradual decrease in volume of sound. Sforzando is a sudden burst of sound.

4.3. DEFINING MUSICAL CONTACT.

I have chosen rhythm rather than melody as the basis on which to define the levels of contact, since rhythm is implied in melody, whereas the opposite is not. Moreover, for technical reasons, patients have more direct control over rhythm than over melodic intervals. Also, patients usually play on percussion instruments, and even where these are tuned, there is a strong rhythmic component to the improvisation. For reciprocal musical contact to exist when two players improvise music, they must both adapt their playing so as to share a commonly defined musical pulse. Where only one partner adjusts his or her playing towards the other's, there is one-sided contact. Where neither player adjusts to the other, there is no musical contact between them.

Other musical components, i.e. melodic contour, dynamic levels and timbre, are treated as secondary to rhythm, and they help to clarify ambiguities which arise in the rhythmic interaction. For example, when the interactive rhythmic components suggest a high level of contact but there is a discrepancy in the

players' use of timbre and musical dynamics, these non-rhythmic elements are taken into account when assessing the overall level of contact.

Nine levels of musical contact were identified and defined, from a preliminary analysis of the corpus. These represent a direction of therapeutic improvement, in the sense that ideally, the levels of contact improves as sessions progress. The levels are outlined below.

4.3.1. Mirroring, Matching, Reflecting.

If the pulse is common to the players, they have various possibilities for meeting the rhythmic component of one another's performance. I define these as being 'mirroring', 'matching' and 'reflecting'. These do not represent lower or higher levels of musical contact, but serve rather to clarify HOW the pulse is shared through rhythm between two players.

MIRRORING. One partner mirrors the other when there is strict concurrent imitation of rhythm, within a common pulse, meter and tempo variations. Thus the first partner (A) literally does what the second partner (B) does, at the same time. I avoid calling this imitation because this term implies a time lag. Mirroring suggests a concurrent synchronous event. Mirroring may occur where A gives a definite and predictable rhythmic pattern on a drum, and B improvises a melody on the piano, which uses A's

rhythmic pattern at the same time. In clinical improvisation, when the patient's (P) rhythmic pattern is not well-formed, and the therapist (T) may present P with the intended or suggested pattern, and repeats it, allowing P the opportunity to experience it in a predictable way. P may then begin to mirror T's pattern, which will provide P with the shared experience of a new rhythm (Figure 1a, below).

MATCHING. One partner matches the other when some, but not all, of the rhythmic components are mirrored. The pulse, meter and tempo variations are common to both players. Matching can be thought of as partial mirroring. For example, A plays a definite and predictable rhythmic pattern on a drum, and B mirrors some but not all the rhythmic components (Fig.1b). This can be a clinical tool when P's rhythmic patterns are rigidly repetitive and T is providing partial support and an alternative form at the same time. If P detects the alternative (e.g. a minim and crotchet motif), s/he may then begin to play it with T (i.e. mirror T), who may then provide yet another alternative by matching P's use of the new rhythmic motive.

REFLECTING occurs when the pulse and tempo variations are shared but the meter is not necessarily common to both players. Some aspects of the rhythmic patterns pass from one player to the other, but not at the same time (Fig.1c). This form of

interaction may denote a low level of contact, where, e.g. P's playing is unpredictable and T always lags behind in attempting to meet P, rather like a musical canon. It may denote a high level of contact when the two players exchange thematic material. As a clinical technique, T may reflect rather than mirror or match P's playing when P is musically over-dependent on T, by imitating everything T does. By becoming less predictable, T encourages P to become musically independent.

FIGURE ONE

a) MIRRORING:

$P_1 - \frac{4}{4}$ $\cdot \text{♪}$ | $\text{♪} \text{♪} \text{♪} \text{♪}$ | $\text{♪} \text{♪} \text{♪}$ | $\text{♪} \text{♪} \text{♪}$ | ♪ (etc)

$P_2 - \frac{4}{4}$ $\cdot \text{♪}$ | $\text{♪} \text{♪} \text{♪} \text{♪}$ | $\text{♪} \text{♪} \text{♪}$ | $\text{♪} \text{♪} \text{♪}$ | ♪

b) MATCHING:

$P_1 - \frac{4}{4}$ $\cdot \text{♪}$ | $\text{♪} \text{♪} \text{♪} \text{♪}$ | $\text{♪} \text{♪} \text{♪}$ | ♪ (etc)

$P_2 - \frac{4}{4}$ ♪ | $\text{♪} \text{♪} \text{♪}$ | $\text{♪} \text{♪} \text{♪}$ | ♪

c) REFLECTING: 2

$P_1 - \frac{4}{4}$ ♪ | ♪ | ♪ | ♪ (etc)

$P_2 - \frac{4}{4}$ ♪ | ♪ | ♪ | ♪

4.4. MIR GENERAL CONTENTS

In the nine levels, the MIR takes the following into account:

(i) Partner's performance: this refers to the content of P's musical statements, rather than interactive responses, since P's performance will have an effect on whether T is able to meet (by mirroring, matching or reflecting) P's playing, and thereby set the tone for any interactive processes.

(ii) Therapist's response: refers to whether T is able to meet P's playing.

((i) and (ii) are not stated after level 4, since for the improvisation to be rated as being higher than level four, the therapist must have met P's playing.)

(iii) Quality of P's Responsiveness: refers to P's awareness of and response to any clinical interventions by T. This is only applicable to levels two to six, inclusive, since below this level (level one) there is no musical contact, and therefore no potential for clinical intervention by T; and above level 6, the improvisation moves towards mutuality, where both players initiate and exchange musical ideas, rather than just P responding to T's interventions.

(iv) Musical Interaction: is a summary of the interactive content of the improvisation, i.e. who tends to do what in any level. For example, who introduces new musical material, who responds/does not respond, and so on.

(v) Shared Musical Content: is a summary of the overall musical

content of the joint improvisation, i.e. the overall musical effect. For example, is the joint pulse regular, is there any fluctuation of tempo, and any development of thematic material.

(vi) Clinical Adjustment: is a indication of T's clinical techniques at any level, e.g. at level two, s/he must not intervene frequently since the contact is tenuous, and at level 6, although T may intervene more frequently, since the contact is stronger, s/he may cease to do so to encourage P to take the musical initiative.

4.5. DEFINING CONCEPTS PERTINENT TO CLINICAL IMPROVISATION TECHNIQUE.

I include some comments below to clarify two more aspects of clinical improvisation which are pertinent to the MIR, i.e. clinical intervention, P's initiative, Extending and Resisting contact and the joint musical impulse.

(i) Clinical Intervention.

When T introduces new musical material within the context of the shared improvisation, this is a clinical intervention: it is a way of checking P's alertness and responsiveness to musical changes, especially in the early stages of music therapy, and in later stages of the work it is a way of inviting P's musical responses towards a wider range of musical expression . When T's intervention proves to be totally inappropriate, usually because

T is not paying attention or is not tuning into the improvisation appropriately, this is not a clinical intervention, and one outcome may be that P's playing regresses to such a degree that the two players lose musical contact. The interaction would then be rated as being in level 1 (No Musical Contact).

(ii) P's initiative.

Where P introduces new musical material, or an extension of existing shared material, he or she is showing initiative within the musical relationship rather than intervening clinically, and the improvisation is then rated as being on level 8 (established mutual contact). A critical difference between T's clinical interventions and P's musical initiative is one of intent and training: T's clinical intervention is a component of consciously regulated clinical improvisation technique, whose intention is to alert P to possible musical/emotional developments from the existing shared musical material - thus it is more than just a direct 'musical' initiative. P's musical initiative, on the other hand, is assumed not to be a clinical intervention in the sense that its intent is not to check T's alertness or responsiveness. Rather it signifies P's intention to be autonomous and creative within the shared musical context.

(iii) Resisting and Extending Contact.

There is a qualitative difference between an initiative which extends the range of the shared improvisation and one which limits it. The latter may result from two things: (i) P may be

aware of his or her musical limitations AND may wish to remain within the joint musical relationship, e.g., if he or she continued to respond to T's *accelerando*, his or her playing would become disorganised and the two players would lose contact. By initiating the *ritenuto* (and assuming that T is responsive to this), P enables the musical impulse to remain common. This 'limiting' of the improvisation denotes assertiveness on the part of P, and suggests a mutuality between the players. (ii) Where P's initiative is limiting the musical contact and preventing the improvisation from developing, then P's action may denote an emotional resistance to the contact being developed, leaving T aside and preventing her from being part of the change or from extending the range of the joint improvisation (Nordoff and Robbins, 1977; Steele, 1984). The improvisation is rated as being on level four (self-directed musical responsiveness). The difference between these two intentions is subtle, since psycho-dynamically they are two sides of the same coin (resistance may be seen as a feature of autonomy). However, a critical feature in distinguishing between the two is whether the intervention is congruent with the preceeding musical material, which includes T's contribution, and therefore enables the sharing to continue, or whether it is incongruent and prevents the sharing from continuing.

(iv) The Joint Musical Impulse.

This may be described as the impulse or energy which underlies

the improvisation. If the two players are attuned to one another, they will share a common experience of the quality and dynamic shifts of this impulse. If, however, they are not fully attuned, the quality of this joint energy or impulse will be out of 'synchrony'.

4.6.1. LEVEL ONE:NO MUSICAL CONTACT

Partner's Performance:

(1) The partner's (P's) performance is unpredictable and/or disorganised: the pulse may be irregular or only fleetingly regular; the meter is not established; rhythmic patterns are absent or too unformed to be discerned by the therapist (T).

(2) P's performance may appear to be more organised and predictable; the pulse may be more regular though unstable; the meter, while not explicit, can be inferred; rhythmic patterns may be inferred.

Therapist's response:

The therapist (T) does not mirror, match or reflect any aspect of P's musical utterances.

Musical interaction:

There is no common pulse between T and P - or else it is too fleeting to be called musical contact.

Shared Musical Content

There is no joint musical impulse and the joint improvisation is unsynchronised.

4.6.2. LEVEL TWO:ONE-SIDED CONTACT - No Responsiveness from P.

Partner's Performance:

P's performance may be disorganised or more organised, as in level one;

Therapist's response:

T meets some or all aspects of P's performance, mirroring, matching or reflecting this with varying degrees of accuracy .

Quality of P's Responsiveness

If and when T intervenes eg, by altering a rhythmic pattern or introducing an accent, P continues to play as before, i.e. does not respond to T.

P may also continue to play for several beats after T has stopped, seemingly unaware of the alteration.

Musical Interaction:

Musical contact is apparently established in the sense that the P and T share some (or even all) of the musical components. However, it appears that:

- a) T is doing all the active meeting of P's performance, and
- b) P's performance gives no sign of being aware of T's.

The shared musical impulse is the result of T's accurate

mirroring, matching or reflecting of P's performance rather than of mutual communication.

Clinical Adjustment: T may cease to intervene if after a few interventions, P continues to perseverate. T may then continue to play with P, moulding her playing to P's perseverative utterances and eventually draw the improvisation to a close.

4.6.3. LEVEL THREE:ONE-SIDED CONTACT - Non Musical Responsiveness of P.

Partner's Performance and T's response:

This is as in level 2.

Quality of P's Responsiveness

If and when T intervenes, e.g. by altering a rhythmic pattern or introducing an accent, P responds by either :

i) stopping playing (even momentarily) and then continuing as before;

ii) faltering by playing in a chaotic manner, not unlike level One, and then either stopping or continuing as before.

iii) speaking to T or looking up at T.

P may also continue to play for several beats after T has stopped, seemingly unaware of the alteration.

Musical Interaction

It appears that,

a) The T is doing all the active meeting of P's performance, modelling her playing on P's performance.

b) P's responses to T's interventions suggest that s/he is aware of the intervention but his/her responses are not musically directed - they are non-musical.

d) This is one-way contact : P's performance gives no sign of

being aware of the other musical partner, and if at all, very peripherally.

Shared Musical Content

The shared musical impulse may be smooth and flowing but this is more the result of T's accurate matching than of mutual communication.

Clinical Adjustment.

There is a qualitative difference between the responses to interventions described in this category; and those of a partner who, because of insufficient musical experience, does not know how to respond. The implication in this level is that there is insufficient musical contact between therapist and partner for the partner to be motivated to direct his/her responses towards the therapist's music. The absence of musical contact is not a consequence of the partner's lack of musical sophistication or ability, but rather the consequence of an incapacity to establish an emotional/musical exchange with the therapist. Where a musical relationship has been established, the partner who has the emotional motivation and flexibility but lacks the musical vocabulary will direct - or attempt to direct - his/her response to the therapist's music. This is described in level 5, below, under 'tenuous musically directed responsive contact'.

4.6.4. LEVEL FOUR: SELF-DIRECTED MUSICAL RESPONSIVENESS OF P.

Quality of P's Responsiveness

P's response to T's intervention is to move away from the joint musical context. His or her response is not directed towards T, but it is more than merely stumbling or stopping, as described in level 3. The response is 'self' rather than 'other' directed. It is not a response which is reciprocating contact, but is rather one which is preventing contact from being established or even reducing existing contact in that it keeps T very much at bay.

This level may denote a high level of resistiveness on the part of P towards establishing musical contact. Often the musical performance of P may be highly skilled so that the joint improvisation may 'sound good' to an external listener. Closer listening will reveal that T's playing remains peripheral to P, although there are shared musical components.

Clinical Adjustment

T must check whether her interventions are appropriate to P's music: they may be too direct or overt, and may be alienating P, rather than inviting him to respond to T. A less challenging, more obtuse intervention - or no intervention at all - will have to be considered.

4.6.5. LEVEL FIVE:TENUOUS MUSICALLY DIRECTED RESPONSIVE CONTACT

P's performance and T's response

As in levels 2 to 4, i.e. T is able to match, mirror or reflect aspects of P's performance.

Quality of P's Responsiveness

When T intervenes, e.g. by increasing the tempo, altering a rhythmic pattern, introducing an accent or suggesting a different meter, P's musical response shows the beginnings of musical awareness: he or she will alter his/her musical utterance in response to T's intervention.

P's responses may be musically limited and/or unsustained.

For example, if the intervention was preceded by the players' pulse (or rhythmic patterns or dynamic levels) being unsynchronised, P's response may result in the pulse (or a rhythmic pattern, timbre or dynamic) being shared for a few beats.

Alternatively, P's response may be sustained for P may risk perseverating the 'new ' musical statement, i.e. s/he may become stuck within it. The quality of P's response will only become clear when T next intervenes.

Musical Interaction

The distinctive musical feature of this level is that P's

response is musically directed towards T's intervention. The mutual contact may be fleeting. The shared musical impulse may be still be halting and uneven.

Clinical Adjustment.

T's interventions may be few, to prevent T and P losing musical contact.

4.6.6. LEVEL SIX: MORE SUSTAINED MUSICALLY DIRECTED RESPONSIVE CONTACT.

Quality of P's Responsiveness.

P's responses to T's interventions are more sustained and musically less limited than in level 5, although there may still be signs of disorganized or over-organized and rigid musical utterances.

Musical Interaction.

Musical initiative and intervention still very much with T.

P may follow T closely: may imitate all of T's changes (or attempt to) rather than match or reflect.

P may adjust his or her playing (eg, catching up a beat) in order to meet T's playing .

P may 'hold' a basic beat or simple rhythmic pattern while T improvises against it. This is a very basic 'holding' and is only pertinent to this level if there is little tempo and rhythmical flexibility on part of P. Too much variation of either might cause P to lose the motivation for initiating.

Shared Musical Content.

The pulse is more consistently shared between T and P; P's rhythmic patterns are more consistently formed; the shared

musical impulse becomes more flowing. Some flexibility in the use of tempo, dynamics and timbre may emerge.

Clinical Adjustment:

P's increased flexibility means that T can intervene more frequently than in level 5. However, there is a danger that P may become over-dependent on T. T may cease to intervene in order to encourage P to begin initiating.

4.6.7. LEVEL SEVEN: ESTABLISHING MUTUAL CONTACT

This is an extension of the last level: P's playing is musically more formed; P's responses to T's interventions are sustained, and the quality of these responses is smooth and spontaneous.

Musical Interaction

P able to 'hold' his or her own musically: thus P may hold a basic beat or a rhythmic pattern while T plays more complex music, and this may include *accelerandi*, *ritardandi* and *allargandi*. S/he is flexible enough not to restrict T's playing: s/he is reflecting rather than imitating T. Or the other way round ie, T holds the basic beat while P plays around the pulse, (e.g. P may syncopate), exploring rhythmic and melodic shapes.

Shared Musical Content

The use of shared pulse is increasingly flexible, e.g., variations in tempo, meter, rhythmic patterns and dynamics appear. The shared musical impulse is flowing.

Clinical Adjustment

There is a qualitative difference between P 'holding' while T 'plays; and the perseverative playing described in level 2, which might be mistakenly taken for 'holding'. At level 2 there is little flexibility or mobility of tempo, timbre or dynamic,

whereas at this level, the joint impulse is flexible. Moreover, P's holding does not restrict P's playing, which might be syncopated. At this level the 'holding' signifies P's independence from T (he does not need to imitate all T does); and also his sensitivity and reciprocity to T.

This is the beginning of 'co-operative' playing, where each partner is supporting the other.

4.6.8. LEVEL EIGHT: EXTENDING MUTUAL CONTACT

Shared Musical Content

The joint musical impulse is flexible, with syncopated rhythms and less predictable musical ideas, but this does not interfere with the flow of the shared musical impulse.

Musical Interaction: P's initiative:

Beginning of musical interchange and mutual musical contact: P's response to T may extend or vary T's musical idea; P may initiate changes in tempo or rhythm; or P may reintroduce previous musical material. P's initiative is assertive and is the equivalent of P intervening, rather than T, as in preceding levels. For example, P may halt an accelerando by initiating a ritenuto; or P may hold his/her own metrically i.e., play a 3/4 versus T's 4/4 meter.

Clinical Adjustment

T and P become increasingly attuned to one another's musical intentions and can begin to share musical responsibility for the improvisation: either partner may introduce new musical ideas and extend the improvisation. T's role is to support P in his musical initiative, to invite unexplored responses by extending the musical boundaries even further, and to become, increasingly, P's musical partner.

4.6.9. LEVEL NINE: MUSICAL PARTNERSHIP

P and T actively mirror and reflect one another's playing. They take turns to lead in the improvisation, by extending and developing rhythmic and melodic forms. Both players use musical components flexibly in a fully reciprocal manner.

Shared Musical Content

The musical improvisation may show extremely flexible use of musical components, so that to an untrained listener it may resemble level 1: the pulse and meter may be highly implicit, and the rhythmic and melodic patterns fragmented.

Clinical Adjustment

At this level the improvisation is moving towards musical improvisation per se, rather than clinical improvisation. The players are utterly tuned into one another and share a reciprocity of musical intention. The players are relating intersubjectively.

4.7. ASSESSMENT USING M.I.R.

The levels of performance described by the MIR comprise an ordinal nine-point scale. For data analysis, each musical excerpt was allocated ten units, representing ten units of time. These 10 units were distributed across the nine levels of the scale in a way which best represented the interactive quality of the improvisation. A global score was then calculated by summing the product of time units and points on the scale. (Thus, if 5 units were allocated to level 3; 2 units to level 4 and 3 to level 5, their products are 15, 8 and 15, respectively, and the global score is 38, which signifies a mean score on level 3.8) Inter-rater reliability with a second rater who rated 23 excerpts was good, with a Correlation Coefficient of .8449, $p=.0001$).

NB: For the Pilot study, (Chapter Six), only six levels were defined. These follow the same trend as the nine levels outlined above, but are less detailed. They are summarised in the published report of this study. (Appendix i)

4.8. DYNAMIC FORM AND THE MIR

The MIR uses musical terms to describe Dynamic Form in an interactive musical context. This context is provided by the therapist and patient's joint improvisation, in which the therapist uses clinical improvisation techniques in order to engage the patient interactively.

The MIR describes and assesses the patient's capacity to be flexible and responsive to another person - a capacity which is revealed in a coherent and flexible Dynamic Form. In musical terms, the capacity to form, sustain and extend musical utterances that are coherent to both the self and the other, is essential to inter-subjective musical processes.

Level One, in particular, illustrates that the absence of a coherent musical utterances in the patient's playing renders musical contact impossible, despite T's efforts at 'making sense' of those statements. That this reflects internal dis-integration of basic emotional processes is supported by the Pilot Study in Chapter Six, which shows that Schizophrenic patients in particular, who suffer from severely damaged interactive capacities, were prone to disordered musical statements. Level One also illustrates the necessity for the Dynamic Form to be apprehended by both partners, for inter-subjective communication to take place. Thus, where P's musical utterances are coherent but T does not apprehend them, an interaction cannot be established between the two musical partners.

Levels Two and Three, which may have elements of Level One, focus on the incapacity to be flexible within an interaction. Thus, while P's musical utterances may be coherent, any suggestion of variation or fluctuation, introduced by T, elicits no response: P continues to assert his utterances, in a way that does not take T into account. Alternatively, P may

respond outwith the musical context (Level 3), but without varying his musical utterance. The implication of these levels is that P's Dynamic Form may be too fragile to withstand any fluctuation, for example, musically P cannot accelerate, alter a rhythmic pattern or extend a musical phrase. The contact between T and P is stilted: it is limited by the confines of P's interactive capacities. That a coherent and flexible musical utterance results from P's interactive capacity rather than from P's musical experience will be demonstrated by the two experimental studies.

Level Four is more complex interpersonally: here P's Dynamic Form may be more intact and flexible (P's musical performance may be fairly sophisticated, in musical terms), but it remains intra- rather than inter-personal. There is a diffidence, on P's part, in allowing the interaction to develop, and P has the communicative capacity to resist T's overtures. This level supports Storr's view, (p.35), of the neurotic person, whose ego, while having the capacity to adapt to the outside world, cannot adapt positively.

Levels Five to Eight form a continuum: the expression of a more flexible Dynamic Form, (through the integration of musical ingredients and their expressive features) has a stable relationship with the capacity to take the other person into account. Thus, increasing flexibility of rhythmic patterns, of melodic contours and of dynamic level enable the improvisation to

become more interactive, and both partners begin to take responsibility for the texture, direction and form of the improvisation.

Level Nine denotes an inter-subjective interaction. Here the Dynamic Form is coherent and flexible; it makes sense to both partners, so that each has a sense of the other's intentions. The two partners know one another directly and reciprocally.

The next chapter examines 5 musical vignettes, to illustrate the signalling of Dynamic Form through clinical Improvisation.

CHAPTER FIVE

5.1. MICROANALYSIS OF MUSICAL INTERACTION: SOUNDING DYNAMIC FORM

In Clinical Improvisation, the Therapist's (T) responses to the Patient's (P) musical utterances elicit an interaction between the two players in order to glean P's interactive capacity, motivation and susceptibility. T notes the coherence and stability of P's playing; she responds to the qualitative or expressive features in P's playing, and then notes the quality of P's responses to her own responsive statements. The quality of these musical acts, i.e. their coherence, flexibility and fluidity - or the absence of these features - within this interactive context, signal the Dynamic Form of emotions, inherent in human beings.

There is evidence that mental illness interferes with the capacity to co-ordinate oneself in order to engage with the other (see pp 47 & 48), and that this collapsed or disturbed capacity is manifested both in self- and in interactional dissynchrony. In Clinical Improvisation, therefore, we would expect a severely mentally ill person to signal, through their improvisation with the therapist, Dynamic Form that might be chaotic, unpredictable, highly rigid, and a less disturbed person to signal Dynamic Form that was more coherent but less responsive to the other person. These damaged or limited Dynamic Forms restrict the interactive level and quality of the improvisation, in the same way that in Condon & Ogston's study (1966), self-dissynchrony restricted the

interactional synchrony between speakers.

Conversely, we would expect a 'healthy' person to signal Dynamic Form that is coherent, intact and fluid - and this would facilitate a high level and quality of engagement between the two players. This was demonstrated in the example of the mother and infant on page 43: the interactive sensitivities of both partners was illustrated by, first, the mother's sensitivity to the tempo, the contours and the texture of the infant's movement, and, second, by her capacity to co-ordinate herself in order to reproduce these ingredients vocally, thereby adding the dimension of pitch. But this is not quite enough for an inter-subjective, reciprocal interaction: in the example, it was critical that the infant had the capacity to recognize her (responsive) vocalizations as corresponding to his own gestures. Moreover, rather than perseverating with what could have become a stereotyped movement, he also had the capacity to alter his movement, and to await a corresponding change in her vocalization.

The micro-analysis of the following five excerpts illustrate that identical mechanisms are used in Clinical Improvisation. Here, Dynamic Form is signalled through musical utterances, rather than through movement or vocalizations.

These excerpts, which demonstrate contrasting qualities of musical engagement with the therapist, were selected from first sessions. The discussion for each excerpt is not intended to 'prove' higher or lower levels of musical contact, as defined by

the Musical Interaction Rating. Rather, the excerpts are intended to provide an impression or suggestion as to how analysis of data such as this might be developed in future work.

All examples are of the therapist (T) and patient/partner (P) in turn-taking improvisation on the Marimba, a melodic instrument which resembles a bass xylophone. The Marimba used here is diatonic rather than chromatic, i.e. it contains only the 'white' notes of the scale. Its range is from 'c' one octave below middle c to 'a' one octave above middle 'c'. The patient faces the correct side of the instrument, i.e. the pitches ascending towards his right, and the therapist is on the other side, with pitches descending towards her right.

In transcribing the calibrations, I was aware of the difficulty of assigning formally coded musical values to the clinical improvisation, i.e. assigning note values, time signatures, bar lines, and so on. However, a music therapy colleague transcribed these excerpts 'blind' from the audio recordings, and we compared our transcriptions. I was satisfied that our level of agreement was high.

The following abbreviations are used throughout the text:

s.p. switching pause. (This pause occurs when the two players exchange turns on the Marimba. The duration of the switching pause is determined by the onset of the 'new'

player's utterance. Close inter-timing of s.p. in conversational speech has been shown by Feldstein & Welkowitz (1978) to be a feature of interacting adult speakers who have a high level of empathy with one another.)

c.s. centi-second (This measure enables a finer measure of the 'real' timing of the musical events than a second, and is used in measuring prosodic features of speech.)

T therapist

P patient/partner

Calibrations were done on a Siemens Mingograph Ink Jet Recorder. The relationship between distance of calibrations on paper to real time is 250mm per second. Since photocopying interferes with the accuracy of this measure, the timing notated on the calibrations discussed here was measured on the original printout.

5.1.1. P1.

P1 is a control subject who plays music regularly and sings. She describes herself as being musical.

This excerpt (Figure Two) illustrates the first 27 seconds of interchange, with brief, rapid statements by both players. P demonstrates a capacity to fluctuate the timing of her statements (e.g. P2 is at 32 c.s., and P7 at 74 c.s.), as well as to alter the length of her statements (compare P2, a two-note statement, to P8, a five-note statement). In terms of interaction, the critical aspect is that the players' length of statements are congruent to one-another. This suggests a high level of interaction. For example, the timing of T1 and P1 (both 58 c.s.), and of T2 and P2 (34 c.s. and 32 c.s. respectively), suggest that T is responsive to P and is flexible in adapting her playing to P. There is also a hint of shared *accelerando* between P4, at 64 c.s., and T5, at 52 c.s., and an *allargando*, or slight *rubato* by P before the new rhythmic motive is introduced, at P6. The inter-personal timing for the 17 event shows a high level of correlation (lagged correlation: .9391, $p < .0001$).

P uses the entire range of the instrument, from bottom c to top a', with intervals ranging from a minor 2nd (P2) to a perfect 11th (P4). Her statements contain mostly even note values, with the exception of P2 and P3, which use adjoining note

values (i.e. crotchet and quaver), and P6 which uses a triplet quaver figure followed by a crotchet. T imitates P's rhythmic figures closely, although melodically she inverts (T1, T4 and T5), and moves in parallel motion to P but with different intervals (T2, T3, T7). Only in T6 does the therapist show some melodic initiative. In contrast, P shows much musical initiative, (P2, P6, P8). There is a flow to this interaction and a congruence of musical intention, illustrated by the close inter-timing of pauses.

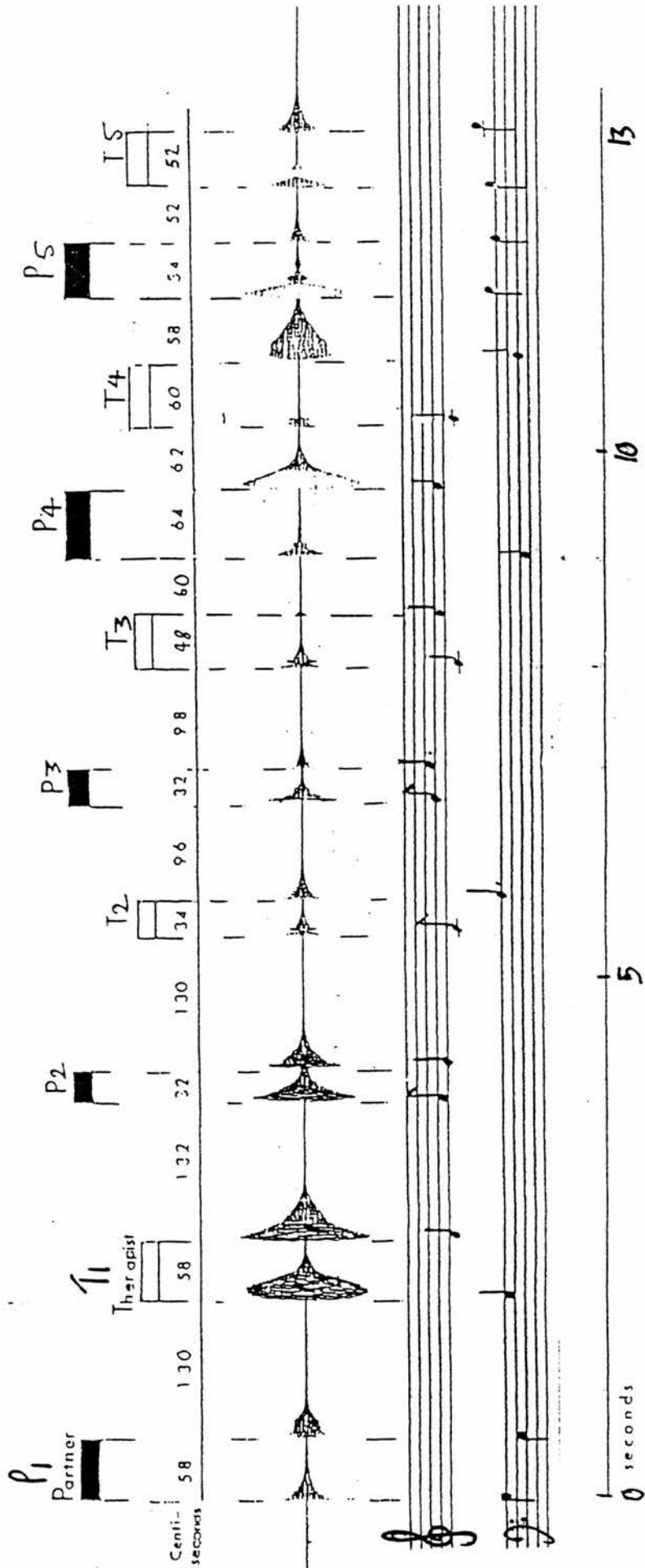
This excerpt illustrates a high level of musical contact between the two players. P takes musical initiative which is congruent with preceding musical material and thus develops the improvisation. This suggests MIR level eight (extended mutual contact). T is less adventurous, restricting herself to 'sustained response' (MIR level 6), which allows P to 'call the tune'. T also shows the beginning of 'mutuality' (MIR level 7) in that she is not only imitating P's performance, but extending P's musical ideas. However, it is P who sets the musical agenda, more than T, but at the same time, it is T's responsiveness to P that enables P to continue initiating and developing the musical material.

P's Dynamic Form is coherent and flexible. Her statements reveal a motivation and capacity to organize herself in order to engage with the other person; she is alert and responsive to fluctuations, and initiates in a way that is congruent with preceding timing and contour. Thus, this

improvisation can develop in the same way that communication between people with a high degree of empathy can tolerate fluctuations, as long as these occur within shared and reciprocated mutuality.

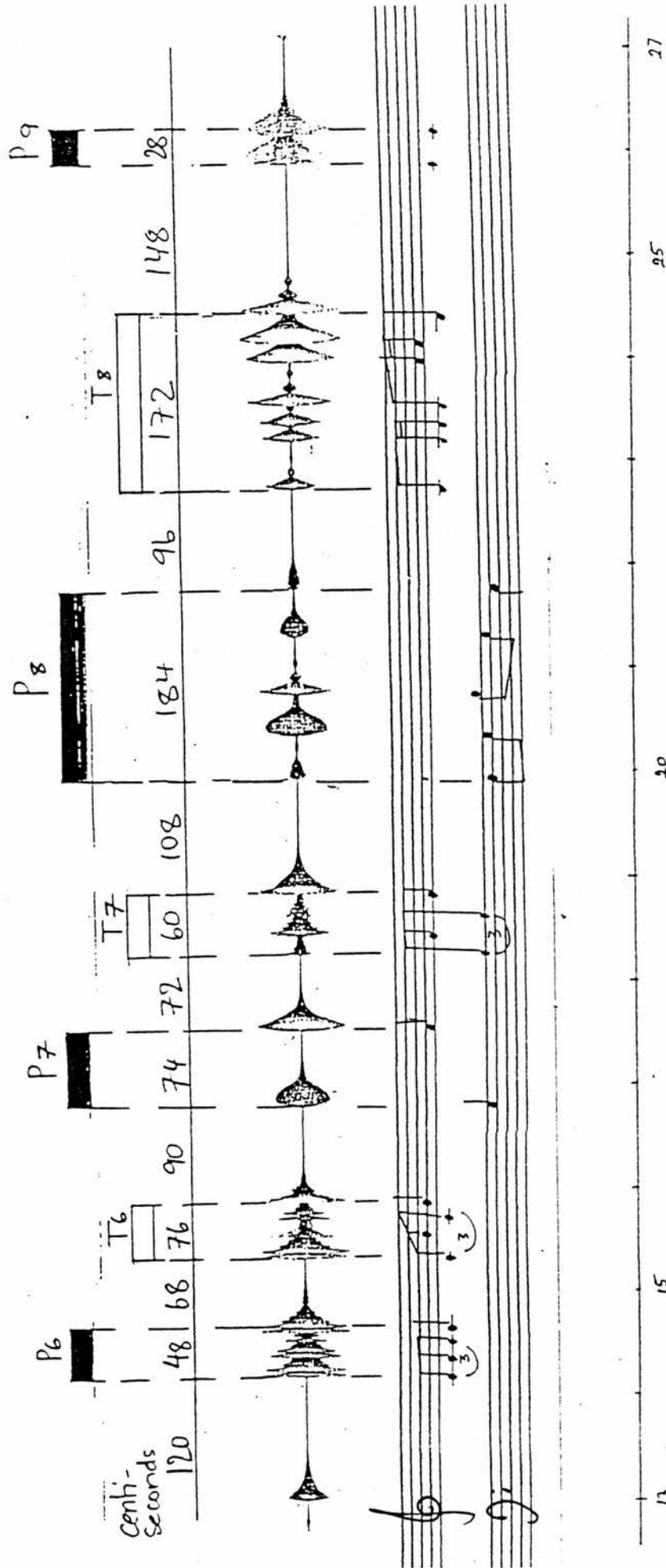
FIGURE TWO

P1



P.t.o. →


P1. (continued)



5.1.2. P.2.

P2 is a chronic schizophrenic patient who has been ill for over twenty years, and has little musical experience.

This example (Figure Three) shows 39 seconds of interchange, from 115 to 134 seconds of play. There is a disparity, throughout the excerpt, in the length of the two players' statements: P's statements P9, P10 and P11 have a mean length of 724 c.s. (range 592-938 c.s.), compared to T's mean length of 155 c.s. for T8-T11 (range 1-278 c.s.). The lagged correlation of the inter-personal timing is low (.5) and non-significant.

P's statements are repetitive, showing no variation in either melodic (the descending minor 3rd, from a to f) or rhythmic () content. In contrast, T's statement T8 inverts the melodic figure and extends the interval to an ascending minor 7th, repeated, while in T9, the inverted figure is extended to a 13th, repeated, followed by a 12th and an 11th. The notes notated in the treble (a a g f) suggest a melodic contour. Rhythmically T8 and T9 imitate P8 and P9's figure. T's 10th and 11th statements use crotchets, T10 playing one note and T11 playing 7 notes which span the entire range of the instrument.

The switching pauses (s.p.) demonstrate that, whereas in the s.p. preceding T8 (i) and T9 (iii) (34 c.s.), there is an acknowledgement by T of the tempo of P's preceding statements by

T matching P's 30/34 c.s. quaver beat, those preceding P9 to P12 (ii; iv-vi) show an intra-personal consistency rather than an inter-personal alertness. The mean length of P's s.p. is 102 c.s. (range 96-108); whereas the range of T's s.p. shows more variation, with a mean of 47, and a range of 34-76 c.s.

This excerpt illustrates MIR level Two, which is no response from P. Overall, P's playing remains self-focused: his musical consistency is pathological in that his playing is perseverative and rigidly organised, (rather than stable with some capacity for fluctuation which would be indicative of 'healthy' playing). There is little fluctuation or variation which can be attributed to T's musical statements. Thus the inter-musical process is severely limited: in T8 and T9, T's statements are a reflection of P's, whereas T10 and T11 are a deviation from the content of P's statements, in an effort to invite from him a response with different musical content. This meets with failure.

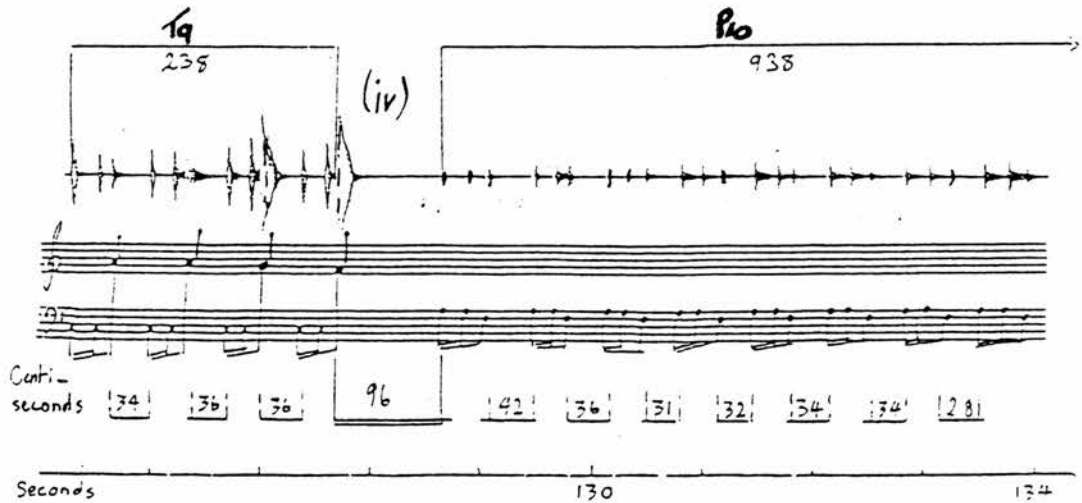
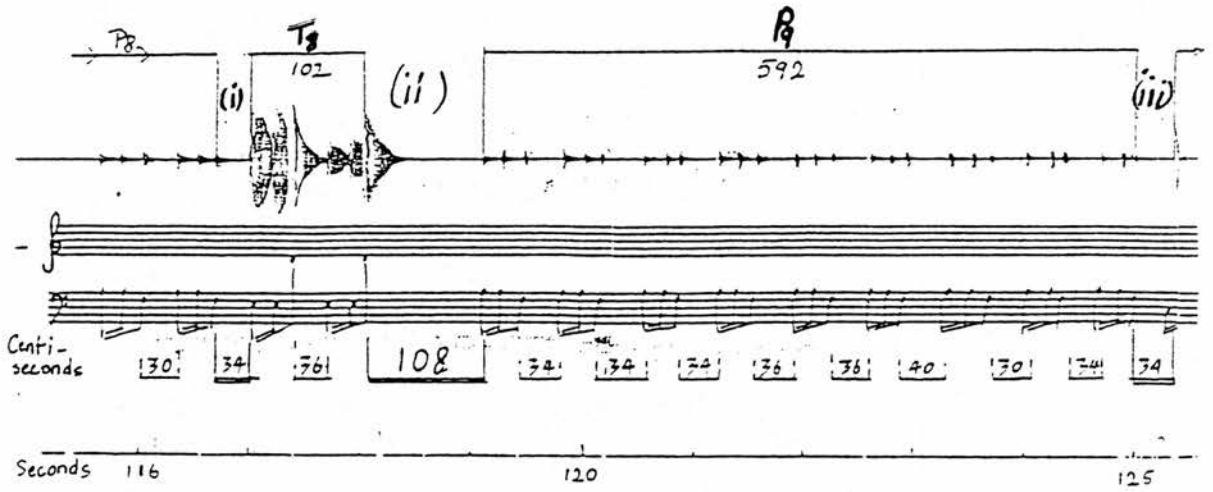
P's low level of interaction also restricts T's contribution and the quality of her interaction. T's statements can be rated at MIR levels 6 and 7: she responds to P and shows some initiative, but is constrained by the lack of variety in P's rhythmic and melodic framework.

Here the Dynamic Form is rigid and limited. Its apparent coherence and predictability are misleading, and it is the interactive context, provided by T's attempts at engaging

with P, that reveal the extent of this rigidity as well as P's severely collapsed interactive capacity - reminiscent of perseverative, stereotyped behaviour of psychotic patients. In psycho-dynamic terms, the over-structured Dynamic Form could be interpreted as a compensation for extreme fragility, and a defense mechanism against any fluctuation, that might propel the form into utter disintegration.

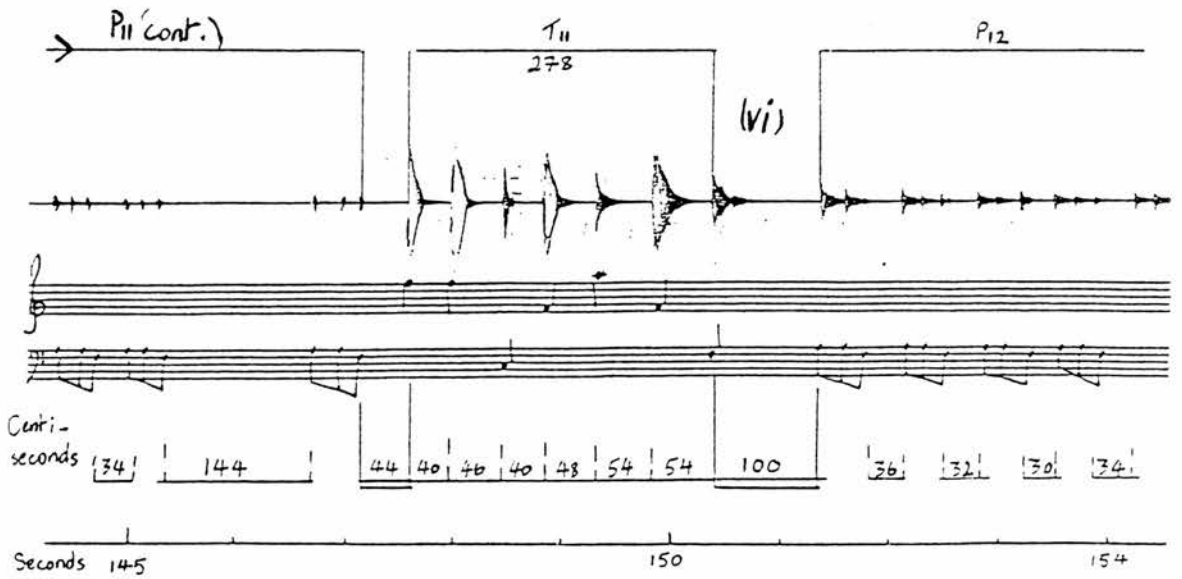
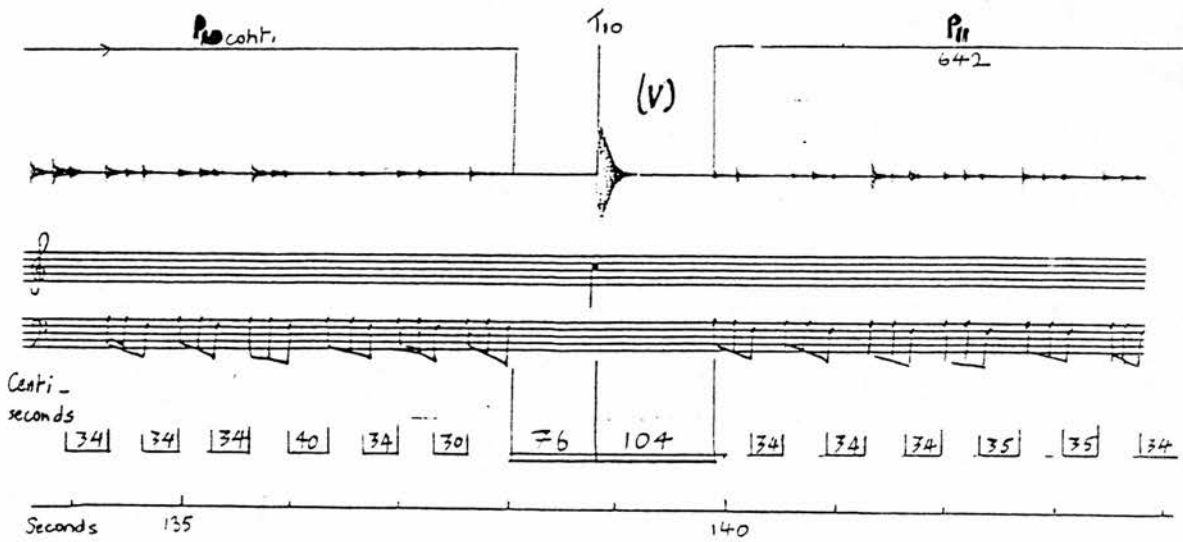
FIGURE THREE

P2.



*continued
overleaf*

P₂ (cont.)





5.1.3. P28

P28 is a control subject with no musical experience, who considers himself unmusical, and says that he does not understand "how music works".

In contrast to the preceding example, this excerpt (Figure Four) shows both players using longer phrases in the first 21 seconds of playing. The clues to the high level of interaction are found in the switching pauses: P's opening statement is an ascending and descending scale with even note values, except for a break (assigned a crotchet value) at the top of the scale (i). The crotchet has a duration of 76c.s., and this provides T with the timing for the s.p. preceding her first statement (ii), of 70c.s., which is slightly faster than P's tempo. T1's statement is in this slightly faster tempo, with the break at the top of her scale (iii) at 64 c.s. P2's s.p. (iv) at 78c.s., pulls the tempo back to his own slightly slower tempo, and this is adjusted to 70 c.s. at (v). T2's s.p. at 74cs (vi) again acknowledges the pulse, though her tempo is again slightly faster, around 65c.s.. P's s.p. of 96 (ix) is interesting, and may be an attempt to compensate for T2's slightly tighter pulse.

This is an example of the two players' compensating for the uneven-ness in one another's' statements by adjusting their own timing for the sake of maintaining a stable interchange. However, I can only assert this because of the coherence of the overall performance: there is inter-awareness of melodic and

rhythmic and temporal features, such as pauses. If this coherence in other musical features were lacking, the meaning of the players' unevenness would have to be reconsidered.

Melodically, the therapist's first statement parallels P1, in an ascending and descending octave scale, beginning a 5th above P1, i.e. on 'g'. In his second statement, P2 repeats a rhythmic pattern () with conjunct melodic intervals (i.e., adjacent notes), followed by two crotchets, after a minor 7th leap. T2 is essentially a descending crotchet motif, from b to e, with various passing notes and some rhythmic elaborations which recall P's motif (). T2 ends with an upward octave leap followed by a minor 3rd, (viii), which parallels the conclusion of P2's preceding statement, at (v).

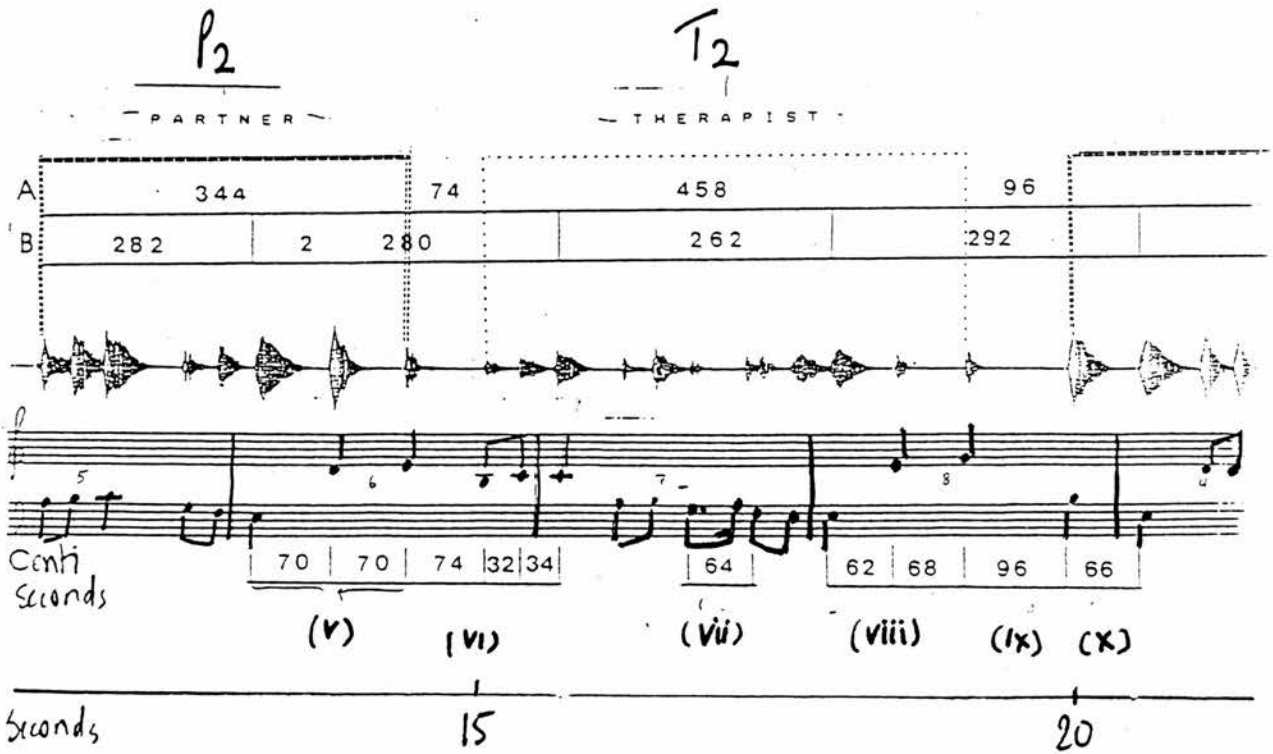
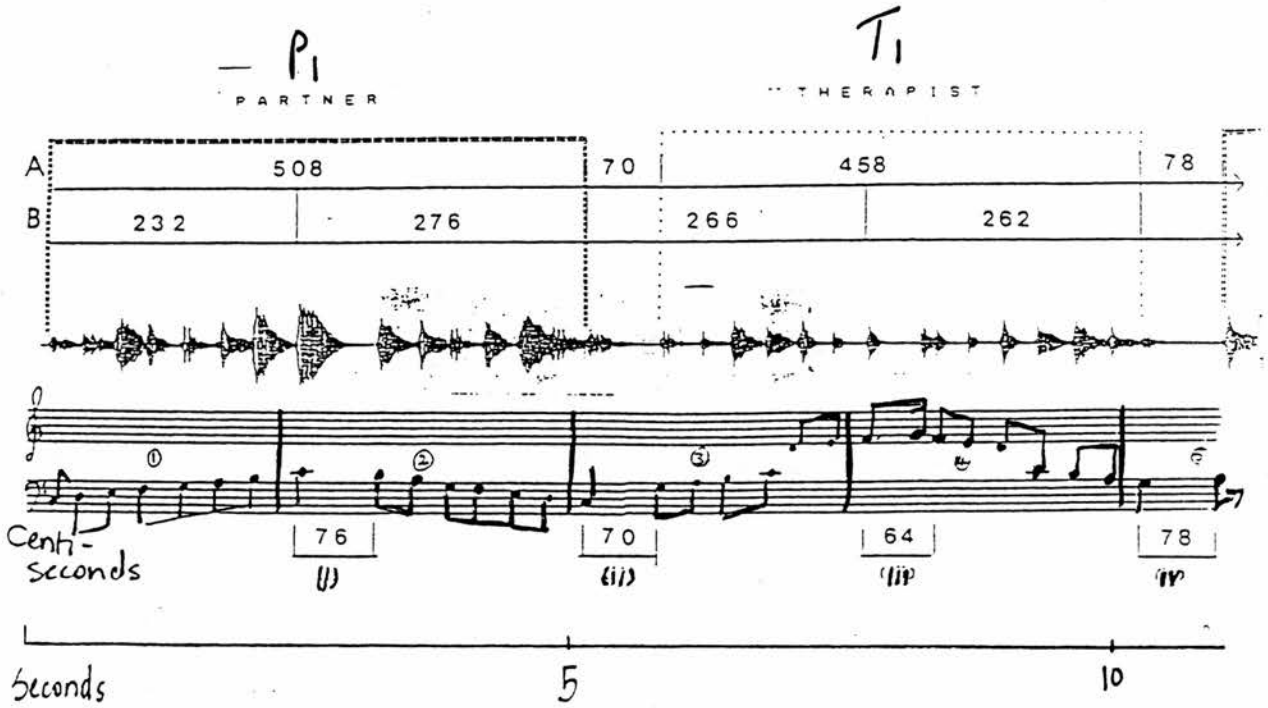
Despite only two exchanges taking place between the two players, in these first 21 seconds, there is a sense of the players dove-tailing one another, having a shared understanding of the pulse, and reflecting various aspects of one another's musical statements. Both players show musical initiative within the joint musical context, (MIR level 7), but within this short excerpt it is difficult to suggest that the initiative is extended rather than just becoming established.

In contrast to P2, P28's Dynamic Form is flexible (he can alter the melodic shape, as well as the rhythm, tempo and the switching pauses of his utterances), and coherent. He has the motivation to engage with T, demonstrated by his alertness to T's

faster tempo and his consequent pulling back of the common beat to a tempo that feels comfortable for him. This illustrates the concept that for an interaction to be inter-subjective, both partners' Dynamic Form must feel comfortable and appropriate, both to the interactive context and to themselves. The 'healthy' aspect to his response is that he does not compromise the shared flow, as do the subjects in the two subsequent examples. Rather, by pulling back the beat slightly, he is allowing both himself and the therapist to retain an interactive fluidity. The success of his move will, of course, depend on the therapist's alertness and responsiveness.

FIGURE FOUR

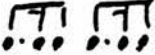

P₂₈




5.1.4. P30

This is a depressed patient, who has some musical experience, having played the piano as a young girl. She describes herself as quite musical and as loving music.

The excerpt (Figure Five) spans 21 seconds, from 129 to 150 seconds of play, with the two players contributing two statements each. It has been selected to illustrate the complex mixture of regularity, (or predictability) and unpredictability in the patient's playing.

Both P11 and P12 acknowledge T's preceding statements (T11 and T12) in compound quadruple timing: two dotted rhythm motifs () are followed by a regular quaver group and end with a dotted crotchet (). Both P's statements are substantially longer than the therapist's statements. In P11, this is the result of her delaying the second dotted rhythm motive, by approximately 88 c.s., and by delaying the conclusion of that statement by another 180 c.s. approximately. This is calculated as follows: in T11, the dotted crotchet beat has a mean value of 100 c.s., and the quaver, of 33 c.s.. The first two notes of P11 have a time interval of 72 c.s., and this, together with the preceding switching pause of 110 c.s. (i), suggests that P has some sense of the pulse. However, her delaying the onset of the second rhythmic group (ii) by approximately 85 c.s. (128 c.s. minus mean quaver beat of 33 c.s.), as well as the delay of the last note of her statement at (iii), by another 184 c.s.), has

the effect of unsettling the flow of the musical impulse. It is worth noting that P11's intra-individual tempo is slower than T's, with a mean crotchet value of 70c.s.

T12 offers a regular and predictable statement, using the same rhythmic motifs as in her previous statement (T11), as well as a similar melodic contour. In P12, the Patient first of all offers a long s.p. (142 c.s.) (iv) which is 38 cs longer than the mean pulse of T12 (104 c.s.). However, it acknowledges the crotchet part of the compound time (In T12, the mean of $76+62+70$ is 69.3 c.s. which is approximately half the length of the s.p.: 142 c.s.). This may be paving the way for her change to simple time in P12 (v), where, despite much fluctuation in tempo, the mean pulse is 82 c.s. There is another explanation for the change to simple time in P12, which is that it was not intended, but rather, is the result of the patient superimposing the two rhythmic figures thus,  and then completing the phrase in simple time.

In this example the shared musical impulse is irregular, due to P's erratic use of the pulse, especially in P12, but there is clearly an alertness on the part of P, to T's statements. T's clearly defined statements suggest that she is providing a stable musical structure, with a predictable pulse and rhythmic forms, to provide a musical beacon for P's uneven timing. If T were to respond to this unevenness with more unevenness, the improvisation would rapidly disintegrate.

This excerpt shows a mixture of MIR levels. There is an

element of Level 4 (self-directed responsiveness) on P's part: her erratic timing, directed to her own sense of tempo rather than towards maintaining a stable exchange with the other person, as well as to the absence of motivation to interact mutually with another person, may be consequences of retarded responses due to her depression. However, she also shows elements of level 6 (rather than level 5, since she is more than just tenuously responsive to T).

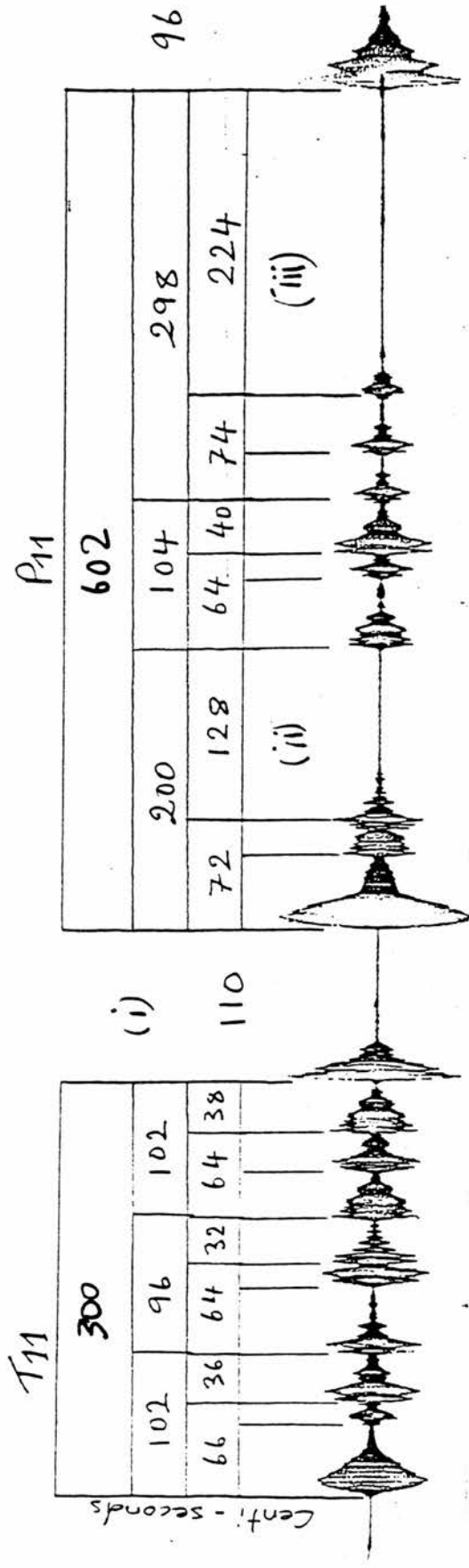
Her change from compound to simple timing in P12 is complicated to rate in this brief excerpt, and again, the overall and ongoing musical exchange would need to be examined before establishing the level. However, we can ask ourselves whether the change was intentional or accidental; whether she is showing musical initiative, in which case it would be level 7 (tenuous mutuality); whether she is restricting the contact between the players by changing direction (level 4). This is not a clear gesture of resistiveness, since she does not appear to sever contact with T: her alteration of timing takes place within the joint temporal framework.

The Dynamic Form reveals a coherence and flexibility that allows P to take T into account, but the fluidity of the form is in question. She twice disrupts the flow of her statement in P11, despite having a clear and responsive sense of T's statement, and her change of timing in P12 is curious - and not quite congruent with preceding material. Although her Dynamic Form does not reveal the degree of rigidity of P2, it also lacks

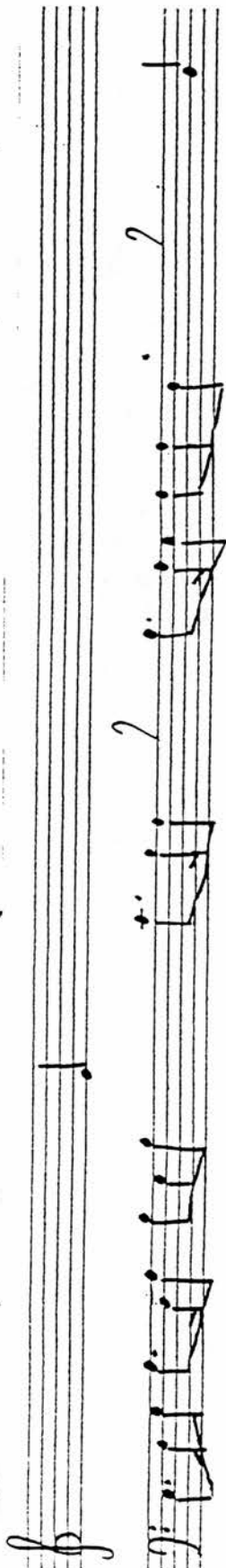
the fluidity and assertion of both P1 and P28, and this restricts the potential for an extended and diverse interaction.

FIGURE FIVE

P.30



130

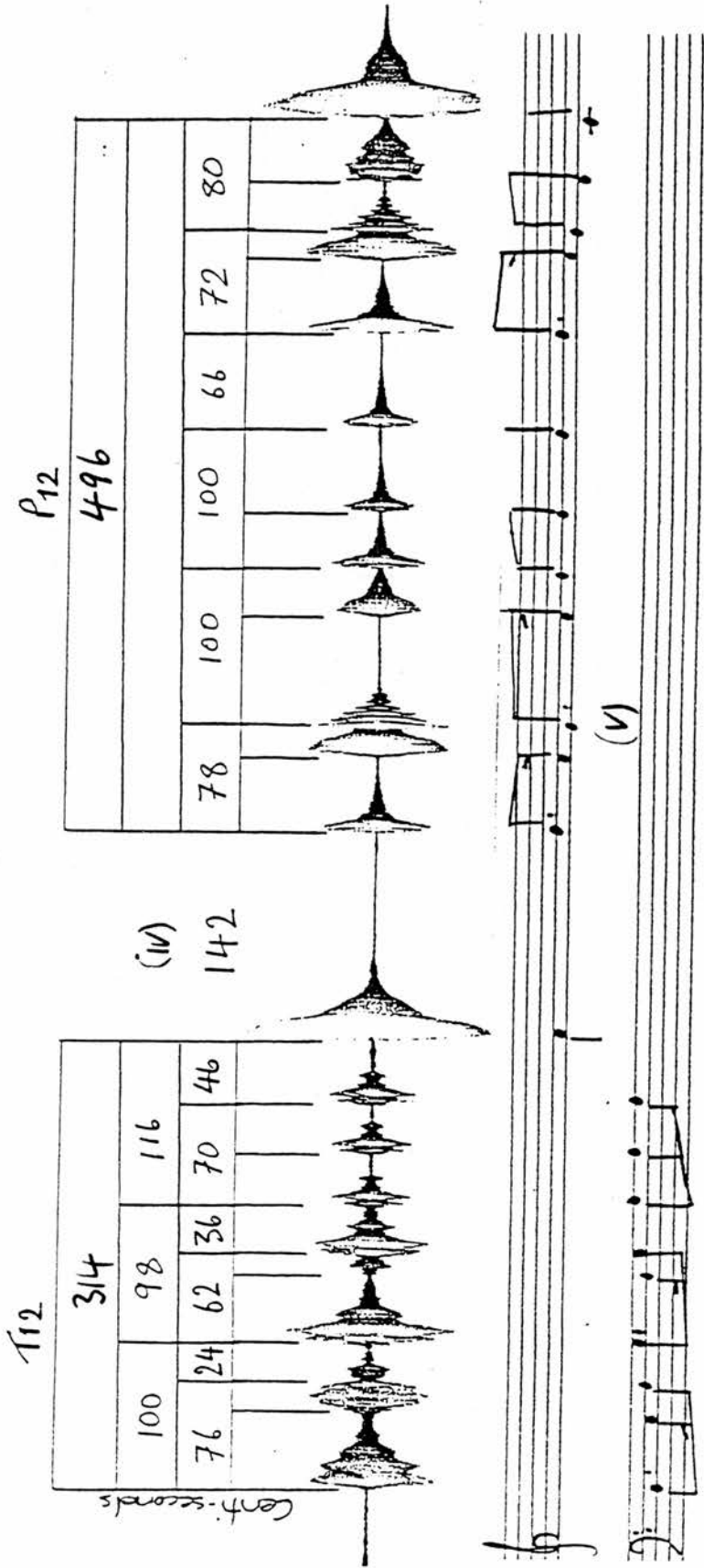


129 Seconds

134

139 continued

P30 (cont.)



5.1.5. P47

P47 is a young man suffering from his first depressive illness. He has played the guitar in the past and enjoys music.

This excerpt (Figure Six) shows the first 25 seconds of interchange between T and P. P has asked T to make the opening statement, and since T has no idea of P's tempo, she begins with an ascending arpeggiated figure with a mean pulse of 34 c.s. After a delay of 840 c.s. (i), which completely alters the pulse set by T1, and is long enough to lose any sense of musical impulse, P1 parallels the arpeggiated ascending figure, with a slower mean pulse of 68 c.s. T2's switching pause of 140 c.s. (ii) acknowledges this pulse by doubling it (or offering a crotchet rest), and T2 is then in the slower tempo, at 72 c.s. P2's switching pause of 252 c.s. (iii) is again very long, and loses the momentum set by the preceding statement by T. P2 begins on middle c, the last note of T2's statement. His use of the descending (augmented) 4th, (b to f) reflects T2's ascending (perfect) 4th (g-c). However, the timing of these notes is uneven. At (iv) the time interval between them is 70 c.s., but at (v), it is 116 c.s.. This, together with the previous s.p. at (iii) of 252 c.s. adds to the unsettled musical impulse.

T3's switching pause of 152 c.s. (vi) suggests a pulse of 76 c.s., and her statement of three crotchets, are at a mean pulse of 74 c.s. P3's sp at 140 c.s. (vii) acknowledges and responds to the emerging pulse. His statement (P3) includes a

quaver upbeat (viii), and his slightly faster tempo of 66 c.s. suggests that he is moving towards T.

Another indication of the two players moving towards one another may be seen in the overall length of each player's statements. T1 is brief at 136 c.s., followed by P1 at 272 c.s. - double the length of T1. T2 has slowed down to what would have been a 288 c.s. phrase had she played another full arpeggiated figure. Half of that figure is 144 c.s. long. P2 is longer at 186 c.s.; T3 slightly pulls back her tempo and lengthens her phrase to 148 c.s., and P3 again shortens his phrase to 182 c.s.

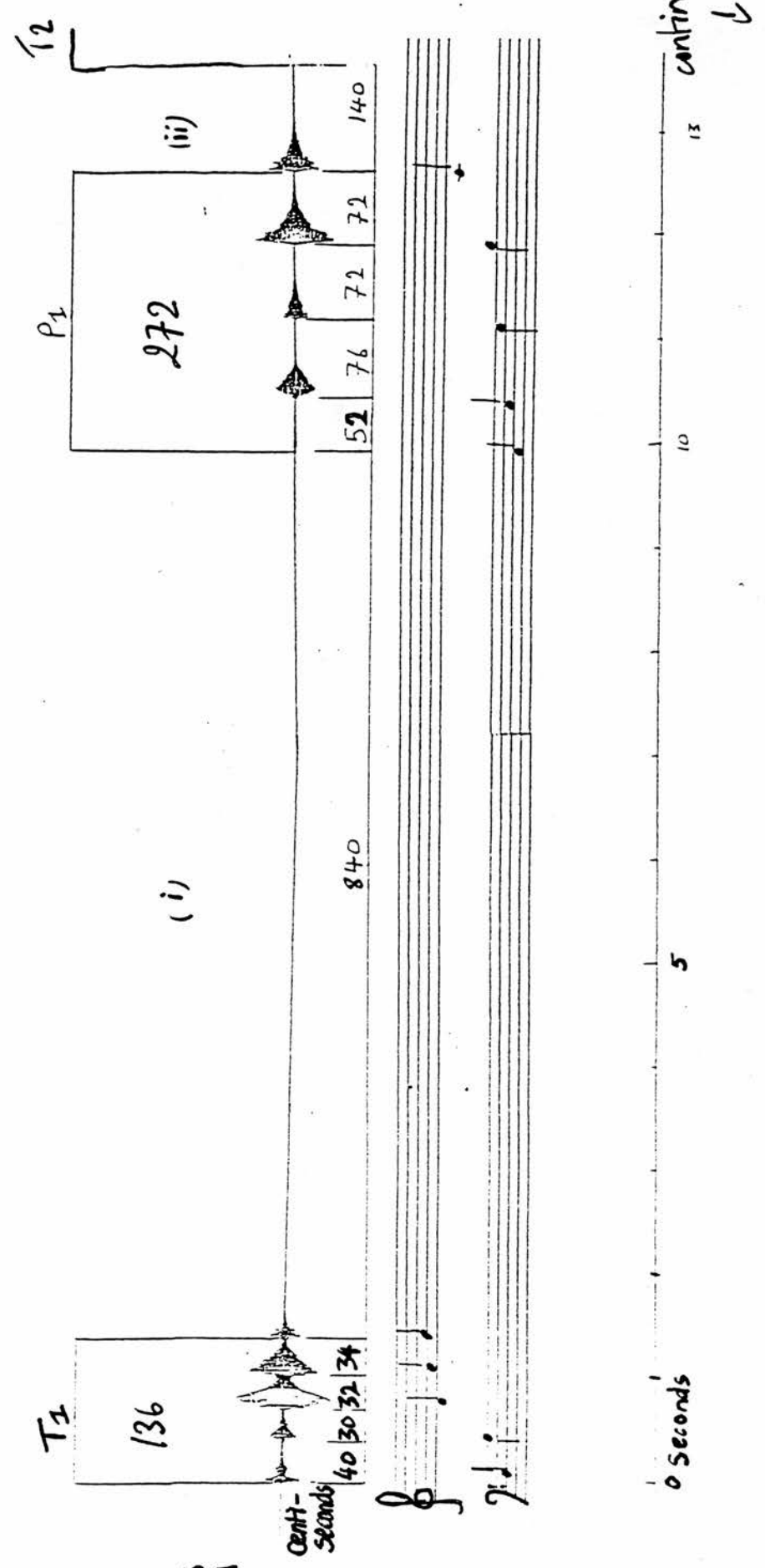
In this example, there is some reciprocity between the two players, in that P is alert and responsive to T: in P1 he parallels her ascending arpeggio; in P2 he shortens his phrase to 3 crotchets, beginning on middle c, which is the note she ended on in T2; and in P3 there is a suggestion of his extending her preceding phrase (T3), with a dotted rhythm and descending melodic line. However, his sluggish use of the pulse result in an irregular interchange, so that the joint rhythmic impulse is not flowing.

This example is a combination of several levels of musical contact, but is mostly at MIR level 5 (tenuous musical responsiveness from P) where P is aware and responsive to T's music, expresses this responsiveness through his music, but the quality of this is limited: his uneven pulse interferes with the development of the joint improvisation, at this stage.

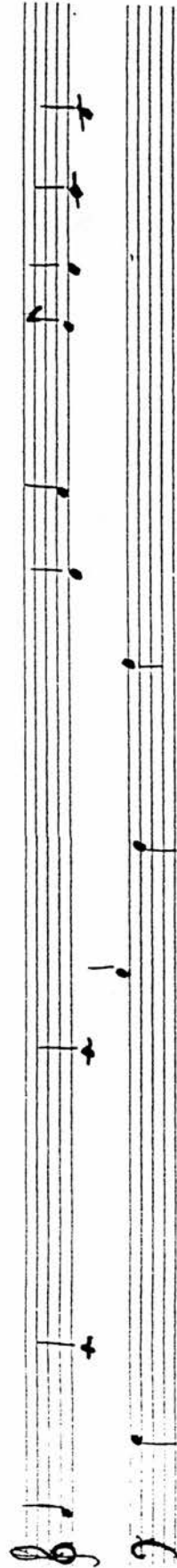
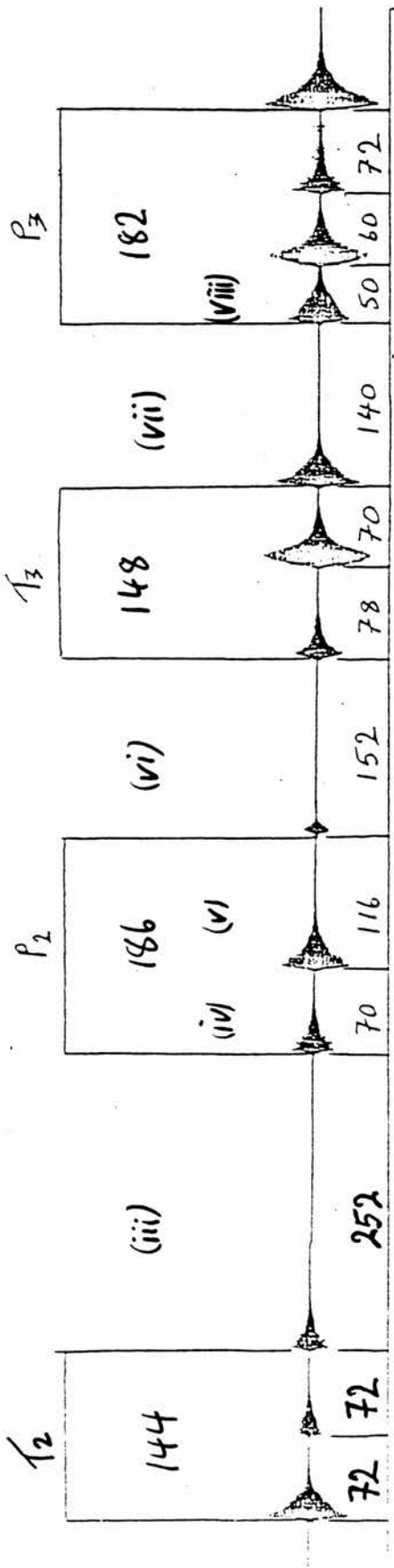
The Dynamic Form is sluggish and retarded - in P1, he cannot quite summon the energy to reciprocate T's opening statement, and in P2, there is a delay (at v) in playing his third note, which adds to the sense of sluggishness. The fluctuation in his playing is questionable: in terms of Dynamic Form, it would appear that it manifests his own reduced capacity to engage with T, that is, the fluctuations are not a result of interactive motivation, but rather of his own intra-personal disturbance. The Dynamic Form, signalled through his melodic shapes, is coherent, but the overriding sense is one of reduced capacity for functioning at the level of basic communication.

FIGURE SIX

P47



P47 (cont.)



5.2. COMMENTS ON MICROANALYSIS.

These vignettes offer some insights into the mechanisms of Dynamic Form, as elicited in Clinical Improvisation.

The two depressed subjects conveyed coherent Dynamic Form. They had not lost the capacity for some flexibility, and were able to reflect some aspect of T's musical acts, despite their diminished energy and capacity to engage as fluidly and inter-subjectively as the two 'normal' subjects. In contrast, the schizophrenic patient's highly rigid Dynamic Form prevented any meaningful interaction from taking place.

The following two chapters provide conclusive support for these concepts: they demonstrate, through significant results, that the interactive limitations (or damaged Dynamic Form) imposed by mental illness can be assessed through clinical improvisation, and, further, that regular music therapy sessions significantly improves schizophrenic patients' clinical states.

CHAPTER SIX

6.1. GENERAL COMMENTS ON THE PILOT STUDY

The main purpose of the pilot study was to develop and refine procedures for defining and assessing the musical interaction between patient/subject and music therapist before undertaking the main study with chronic schizophrenics.

In order to collect as wide a range of musical data as possible, three groups of subjects were invited to participate in the study: chronic schizophrenics, unipolar depressed patients and clinically normal controls. These groups represent a range of emotional disorders. Chronic schizophrenic patients are withdrawn emotionally and have severe communication problems; unipolar depressives suffer from an acute rather than chronic mood disorder, manifested in lowering of mood and motivation, but not suffering from a chronic incapacity to communicate; and the non-clinical controls represent a 'normal' population, without history of mental disorders. The improvisations recorded during the session were then analyzed in order to establish the subjects' level of musical engagement with the therapist, using the Music Improvisation Rating (MIR), discussed in the previous chapter.

This study was written up as a paper entitled "A Musical Assessment of Psychiatric States in Adults", and has been published in the Journal Psychopathology (Appendix i). Here I

only comment on those aspects of the study which were excluded from the paper; i.e., the Index of Musical Experience, the musical analysis, the relationship between musical experience and musical relationship with the therapist; and on the similarities and differences between the three groups.

6.2. THE INDEX OF MUSICAL EXPERIENCE

In a paper entitled 'Reflections on the pre-musical moment' (Pavlicevic, 1987), written prior to commencing this research, I discussed the anxieties and difficulties voiced by patients newly referred to music therapy in an adult psychiatric hospital. Many of these anxieties stemmed from patients' lack of practical musical experience, and from their perception of themselves as being 'unmusical'. This difficulty, which is peculiar to music therapy, motivated my designing a simple Index of Musical Experience (IME), to record patient/subjects' experience of listening to and playing music.

The IME (Appendix ii) asked questions which pertained not only to the amount of playing and listening that subjects did, but to whether any of these activities affected their moods and emotions in any way. The global score is a rather unsubtle measure, but this was very much a tangent to the main purpose of the pilot study; it could be developed in future research, as an interesting area in itself. I then examined whether there was any relationship between the amount of musical experience which

patients had, and their capacity to engage musically with the therapist at a higher level of contact, i.e. did subjects with more experience establish a higher level of musical contact? The answer was yes, but only for the non-clinical control group. (This is discussed in the paper.)

Therefore, is patients' anxiety about a lack of musical experience justified? The answer is yes, for a first session. I have little doubt that familiarity with playing music affects a person's level of anxiety about playing music, and this in turn will affect his playing and quality of engagement, especially in a first session. However, I do not think that the absence of musical experience should interfere with the longterm therapeutic process since, as stated in Chapter One, the focus in music therapy is not the musical content or skill shown in the improvisation, but the emotional attunement between the two players as expressed in the music-making.

6.3. MUSICAL ANALYSIS USING THE MIR.

The Musical Analysis of the improvisations by MIR sampled only the first one minute and 20 seconds of playing. This answers an interesting question: what do the first moments of playing reveal? In this short period, there is no time for the therapist and subject to learn much about one another's playing, so the players meet 'cold', so to speak, in direct response to one another. The results of this analysis, which show differences

between the three groups, suggest that the first moments of playing are indeed significant.

6.4. DIFFERENCES IN MIR SCORES BETWEEN THE THREE SUBJECT GROUPS.

The differences in MIR scores between the Schizophrenics and the Controls and Depressed group respectively were statistically significant , whereas those between the Controls and the Depressed group were not, although there were differences between these two groups. These findings are interesting when they are compared with those studies that have examined mother-infant interactions between depressed and psychotic mothers and their infants. Murray (1988) in her review of the literature on this topic, sums up essential findings. These show that the children of mothers suffering from major affective disorders, including long-term organic illnesses and bipolar depression, provide distorted emotional environments for their infants. These mothers showed little emotion and showed reduced engagements with their infants. When mothers' symptomatology had remitted, communication with their children was still inhibited. Follow-up studies with 3 and 4 year-olds of mothers suffering from these kinds of disorders show that these children had behavioural problems. In contrast, mothers with short-term, non-organic illnesses, (e.g. extreme reaction to recent life events), i.e. in a condition similar to that of the depressed patients in this study, did not appear to differ from

non-depressed control mothers: their experience of being mothers were intact and the follow-up studies showed that their children were not adversely affected by their mothers' depressions.

The Depressed patient group in the pilot study were uni-polar depressed patients who did not suffer from long-term illness, so there is an interesting parallel with the literature on mother-infant interaction. It was the schizophrenic subjects, who, like the mothers with chronic illnesses, were unable to interact appropriately. In contrast, the unipolar depressed patients, like the acutely depressed mothers, were able to interact appropriately, as were the controls.

Further, these findings support the concept of Dynamic Form manifested through musical interaction: they illustrate that identical mechanisms are used in basic communication between people, irrespective of whether the interaction is musical or not. Thus, the schizophrenic group showed the poorest MIR scores, and the least ordered or flexible musical utterances out of the three groups. This limited capacity to interact musically reflects an unintegrated and disordered Dynamic Form: their poverty of communicative skills and severely flattened affect has been well documented in the literature. The Depressed Group manifested a Dynamic Form which was more coherent and flexible: their MIR scores show a capacity to respond to the Therapist, but they also show a decreased capacity to take the interactive initiative - this again reflects findings in mother-infant

studies, which show that the depressed mothers are more responsive to their babies than psychotic mothers. The Control Group, a non-clinical population, had the least difficulty in interacting: their Dynamic Form was flexible, and their musical utterances showed the greatest capacity for shaping and reshaping, or for 'playing', as described by Winnicott (see page 61).

This small study opens areas for further research. First, with larger groups of subjects, questions that could be profitably investigated include: how is depression reflected in a series of music improvisation sessions; is depression treatable with music therapy; what is the difference, musically, between uni-polar (or acute) and bi-polar (or longer-term) depression; and can the differences between the depressed group and the controls be refined, in view of the finding that the MIR does not reveal significant differences between the two groups.

CHAPTER SEVEN

In Chapter Three I suggested that music therapy might be useful in improving the communicative skills of chronic schizophrenic patients. Here I examine whether these claims, so far unsubstantiated, are indeed justified, and I use methodology developed in the pilot study, discussed in Chapters Four, Five and Six. This study is currently being written up as a paper in preparation for submission to a relevant journal. The Methods, Data Collection and Results sections of this chapter are based on that paper.

7.1. MUSIC THERAPY AND SCHIZOPHRENIA.

There appears to be agreement among psychologists and psychiatrists that Schizophrenics have a strange way of communicating (Andreasen, 1979a, 1979b; Brown, 1973; Cutting, 1985; Schwartz, 1982; Sullivan, 1944). There is less agreement as to whether their strange communication is the result of disordered thought processes, reflected in a strange speech (Brown, 1973; Cameron, 1944; Vygotsky, 1934), whether the disorder is one of language, reflected in speech (Chaika, 1974; Fromkin, 1975; Hoffman & Sledge, 1984; Hoffman et al, 1985; Lecours & Vanier-Clement, 1976) or whether the disorder is in the speech itself (Fraser et al, 1986).

Other clinical features of schizophrenia include signs of social withdrawal, flatness of affect, slowness, apathy,

under-activity and difficulty in using non-verbal means of communication (Creer & Wing, 1974; Morgan & Cheadle, 1981; Psychiatric Working Report, 1980). In Chapter Two, it was suggested that the capacity to enter into "interactional synchrony" may be impaired in Chronic Schizophrenics (Brown & Avstreich, 1989; Condon & Sander, 1966). Cameron (1944) and Vygotsky (1934) have also suggested that these patients suffer from an incapacity to interact in a way which takes the other person into account. The loss of social contact, through unsatisfying interactions, results in their gradually replacing social communication by fantasy, which further decreases their receptivity to the influence of social patterns.

The results of the pilot study showed that chronic schizophrenic subjects had difficulty in establishing a responsive and reciprocal musical interaction with the therapist. This direct, non-verbal information about schizophrenics' interactive capacities supports the view that the disorder is one of underlying motivation to interact meaningfully and communicatively, rather than one of more cognitive processes, such as those of language and speech.

In this study I examine the benefits of the therapeutic application of clinical improvisation. Its process of extending the range and quality of the person's Dynamic Forms within an interaction suggests that it may be a powerful and direct way of improving the interpersonal contact and communication of chronic schizophrenic patients. Moreover, this gives natural support to the general therapeutic aims of psychiatric rehabilitation, which

are to help the person disabled in this way to make the best possible use of his or her residual abilities and thereby to acquire confidence and self-esteem through success in social roles (Bennett and Morris, 1981; Clark, 1984; Edwards, 1980; Psychiatric Working Report, 1980; Wing & Morris, 1981).

The literature strongly suggests that music therapy is capable of encouraging verbal and non-verbal responsiveness in withdrawn psychotic patients (Alvin, 1972, 1975; Comte, 1983; Lecourt, 1987; Verdeau-Pailles & Bonnefoy, 1986), and that it may facilitate the self-expression of adults who are suffering from a range of emotional disorders and mental illnesses, including Schizophrenia. (Priestley, 1975; Tyson, 1981, 1984).

However, a literature search has shown that no full study supporting these impressions with objective data has been recorded in the UK. In her theoretical paper entitled "Rehabilitation Musicotherapie avec des Schizophrenes" Vergez, (1984), suggests various musical activities to stimulate schizophrenic patients' flattened affect, to reinforce their sense of self, to communicate with them and to heighten their sensory experiences. These include group activities such as percussive rhythmic activities on the body, on walls and on furniture, the rhythmical stating of names, and the singing of simple melodic phrases. However, the absence of data and any controls subjects makes it impractical to evaluate her statements. Lecourt (1987) reports on observed, though unmeasured, changes of behaviour in patients, including schizophrenics, who were listening to music or hearing music in

the hospital environment.

A more substantial Polish study described 30 long-term schizophrenic patients' responses to recorded music over eight sessions. Patients were asked to report on any associations or incidents which the pieces of music evoked. The authors demonstrate that patients' emotional responses, recorded on questionnaires, to recordings of purely instrumental pieces, were deeper and "more emotional" than those to recordings which included speech or song, and conclude that the words of the music limited the patients' repertoire of recollections (Wdowiak, Karczynska and Pobocho, 1975).

Two pilot studies on music therapy with schizophrenic patients have been reported in Britain. Both examined the ways in which music or music therapy could be beneficial to schizophrenic patients. Observations during the eight weekly group sessions were of non-musical behaviour. These reported on whether or not patients were in or out of the room during sessions; whether they were playing an instrument or not; whether eye-direction was towards the instrument, towards other members of the group or towards other directions; and on patients' posture during the session. These measures were used to compare long-stay and short-stay patients, and differences were shown between these groups. For example, an average of 81% of shorter-stay patients, as opposed to 88% of long-stay patients were in the room in the earlier part of the session; 73% and 75%, respectively, were in the room in the later part of the session; and 76% of shorter-stay patients were on-task (i.e. playing,

apparently listening or talking) compared to 66% long-stay patients, across the sessions (Bunt and Levinge, 1986).

In another report, Bunt, Pike and Wren (1987) report on the use of questionnaires after the eight group music therapy sessions, to evaluate patients' experiences of the sessions. They were satisfied that the patients found the session beneficial but drew attention to the problem of patients' answers being biased in order to please staff.

Neither study satisfactorily addresses the musical interaction in the therapy sessions. Yet, it is precisely this process which is considered to be of therapeutic benefit, since it is the efficacy of music therapy that is being assessed. The main task in an assessment of the musical relationship and musical processes should be the defining of the musical relationship and then the evaluation of its development. This study, then, examines whether the use of clinical improvisation might be useful in improving the communicative skills of chronic schizophrenic subjects.

7.2. METHODS

41 Day Hospital attenders were invited to take part in the study. They were fully informed of recording procedures and were asked to sign a consent form prior to participating (Appendix iii and iv). The subjects were recruited from Cambridge Street Day Hospital and Morningside Park Day Hospital, in Edinburgh, and from the Day Centre at Herdmanflat Hospital, Haddington, East Lothian, 16 miles East of Edinburgh. Cambridge Street Day

Hospital is a rehabilitation Day Hospital of the Royal Edinburgh Hospital, with a patient population of mainly chronic schizophrenic patients, all of whom require ongoing psychiatric supervision. It is staffed by psychiatrists, psychiatric nurses and occupational therapists, and offers a program of activities designed to aid the patient return to work, recreational activities aimed at optimizing patients' use of leisure time, social skills training, training in skills of basic daily living and the fostering of social interaction.

The subjects were screened and diagnosed as suffering from Chronic Schizophrenia by a consultant psychiatrist, using Research Diagnostic Criteria derived from the semi-structured clinical interview known as the Schedule for Affective Disorders and Schizophrenia (SADS: Spitzer & Endicott, 1978). The subjects' clinical states were further assessed by a blind, independent rater, who administered the Scale for the Assessment of Negative Symptoms (Andreasen and Olsen, 1982), and the Brief Psychiatric Rating Scale (Overall & Gorham, 1962). The Hamilton Depression Rating Scale (Hamilton, 1967) was administered to ensure absence of major depressive features and subjects with a score greater than 17 were eliminated from the study. (See Appendix v to vii for psychiatric score sheets.) Details were recorded of subjects' medication for the preceding three months, as well as for the duration of the study (Appendix viii), to ensure that no major change of medication might take place which could affect the quality of their participation. Most of the patients were on regular 'depot' doses of major tranquilisers, injected at weekly,

fortnightly or three-weekly intervals, and none had major changes in medication during the period of their sessions.

Of the 41 subjects, a Treatment Group of 21 were allocated to have weekly individual music therapy sessions, and the remaining 20 (Control Group) had one individual music therapy session at the beginning of the 10-week period and another at the end. The sessions took place at Cambridge Street Day Hospital. The two groups were matched as closely as possible for age and sex, musical experience, social class, duration of illness, musical perception and psychiatric ratings (See Table One, below).

7.3. DATA COLLECTION:

A.

All 41 subjects took part in a first session, recorded on audio and video. The session format was as follows:

1. A brief interview was given to ascertain each subject's previous musical experience and musical background. This was scored on the Index of Musical Experience, developed in the pilot study (Appendix i).
2. Two improvisations were held with the therapist, using the same procedures as in the pilot study.
3. Items selected from Luria's Neuropsychological Investigations (Christensen, 1974) were administered, as in the Pilot Study.

B.

The Treatment Group then had a series of 9 further weekly, individual music therapy sessions, which took the standard form in clinical practice, i.e. improvisations using clinical techniques, each lasting approximately 30 minutes. Attendance was good, with only two subjects in the experimental group dropping out of the study. Each session was recorded on audio tape, to enable the therapist to prepare the following session and to notate any music which appeared especially appropriate in engaging the patient. Sessions 2,5,8 and 10 were also recorded on video tape, to facilitate the analysis of these sessions. The Control Group had no music therapy sessions and did not attend a substitute activity. Their second session took place at the end of the 10-week period. For both groups, the format of the final session resembled that of session 1.

Methods of Assessment developed for this Study:

The Music Interaction Rating (MIR), discussed in the pilot study, originally comprised 6 levels of musical engagement between Therapist (T) and Subject (P), and this was extended to nine levels, as defined in Chapter Four. First and Final sessions were analyzed for all the subjects. For the Treatment Group, sessions 2,5 and 8 were also assessed using the MIR. Details of the length of improvisations were also noted.

TABLE ONE

BETWEEN GROUP COMPARISONS: GROUP MATCH Mean and Standard Deviation (in parentheses)

	<u>TREATMENT GROUP</u> n=21	<u>CONTROL GROUP</u> n=20
<u>PERSONAL DATA</u>		
AGE	37.81 (8.8)	38.7 (8.7)
SEX		
male	17	16
female	4	4
SOCIAL CLASS		
2	2	1
3	14	10
4	2	7
5	3	2
DURATION OF ILLNESS (years)	11.9 (7.5)	14.5 (8.5)
<u>MUSICAL DATA</u>		
Musical Perception Test	29.3 (5.2)	29.5 (4.3)
Index of Musical Experience	10.17 (3.3)	10.6 (5.4)
Musical Interaction Rating (S) *	4.3 (1.3)	4.1 (1)
Duration (secs)of improvisation *	373.7 (98.2)	316.2 (137.2) **
<u>PSYCHIATRIC DATA</u>		
B.P.R.S. *	18.7 (7.6)	14.9 (6.7)
S.A.N.S. *	48.1 (14.7)	38.4 (15.3)
Hamilton *	11 (4.7)	10.6 (5.4)

* first ratings

** Mann-Whitney p=.025 (Two-tailed)

7.4. RESULTS

7.4.1. Group match:

Table One (above) shows that the groups were matched for age, gender, duration of illness, musical experience, and musical perception. The controls showed lower scores than the treatment group for the BPRS and SANS scores, but the difference between the groups was not significant (Mann Whitney Test).

7.4.2. Within Group Comparisons:

First and final music and psychiatric ratings.

Data were normally distributed (Kolmogorov-Smirnov Test). Group means were compared using the Student t-test (two-tailed).

Changes in MIR(S):

Table Two, below, shows that, whereas the Controls showed no significant differences between the first and final music rating, administered at the end of the ten week period, this was not the case for the Treatment Group. Their MIR score for session 10 was significantly higher than for session 1 (T-test, $T=-4.14$, $p=0.001$). The length of musical engagements also increased significantly for the treatment group (T-test, $T=-3.75$, $p=0.001$), whereas there was no significant increase for the controls.

TABLE TWO

WITHIN-GROUP COMPARISONS BETWEEN FIRST AND FINAL MUSIC AND PSYCHIATRIC RATINGS

Mean and Standard Deviation (in parentheses)

	<u>FIRST RATING</u>	<u>FINAL RATING</u>
<u>TREATMENT GROUP(n=21)</u>		
<u>PSYCHIATRIC SCORES</u>		
B.P.R.S. (global score)	18.7(7.6)	14.6(6.3) *
Anxiety and Depression	4.5(2)	4 (1.7)
Withdrawal	3.1(2.5)	2.7(2)
Thought Disorder	4.1(3)	3.4(2.9)
Hostility	2.3(2)	2.1(1.7)
S.A.N.S.(global score)	48.1(14.7)	47 (17.8)
Affective Flattening	13.3(5.4)	13.1(6.7)
Apathy	5.6(3)	6.4(3.3)
Alogia	3.4(2.6)	2.5(2.5)
Asociability	11.4(3.3)	11 (3.4)
Inattention	3.4(1.9)	3.4(2.6)
HAMILTON (global score)	11 (4.7)	10.2 (3.9)
<u>MUSICAL SCORES</u>		
M.I.R.(S)	4.3(1.3)	5.4(1) *
Duration of Improvisation	373.7 (98.2)	479.9 (131.3) *
<u>CONTROL GROUP(n=20)</u>		
<u>PSYCHIATRIC SCORES</u>		
B.P.R.S.(globalscores)	14.9 (7.6)	12.9 (7.8)
Anxiety and Depression	4 (3)	3.6 (2.7)
Withdrawal	2 (1.6)	2.2 (1.7)
Thought Disorder	4.1(2.6)	3.3 (2.2)
Hostility	1.3(1.5)	1.5(1.9)
S.A.N.S.(global score)	38.4 (15.3)	38.6 (18.9)
Affective Flattening	9.7 (4.5)	9.6 (6.8)
Apathy	5.5 (3.5)	5.3 (3.6)
Alogia	3.2 (1.7)	3.5 (2.5)
Asociability	8.7 (3.4)	8.2 (3.9)
Inattention	2.3 (1.6)	2.5 (1.8)
HAMILTON (global score)	10.6 (5.4)	9.3 (5.4)
<u>MUSICAL SCORES</u>		
M.I.R.(S)	4.1(1)	4.4(1.1)
Duration of Improvisation	316.2 (137.2)	319.7 (92.5)

* T test, $p < .004$ (Two-tailed).

Changes in Psychiatric Scores:.

[Note: The Psychiatric ratings are undertaken by a trained medical person in an interview. Global BPRS and SANS scores are calculated by summing the graded scores for each item. For example, in the BPRS, the scores for each item range from 0 (absence of symptom) to 6 (extremely severe). The global BPRS scores range from 0 to 114; and the SANS from 0 to 125. The higher the global score, the more severe the patient's symptoms. It is standard practice, in psychiatric research, to compile subsections of the BPRS and the SANS rating scales. The SANS subgroupings are as set out on the score sheet (See appendix v), i.e. Apathy, Alogia, Affective Flattening, Asociability and Inattention. The BPRS subsections are compiled by calculating the mean score of combined items, as follows: Thought Disorder (items 4+12+15, i.e., conceptual disorganization + hallucinatory behaviour + unusual thought content); Anxiety and Depression (items 2+5+9, i.e., anxiety + guilt feelings + depressive mood); Withdrawal and Retardation (items 3+13+16, i.e. emotional withdrawal + motor retardation + blunted affect); and Hostility (items 10+11+14, i.e. hostility + suspiciousness + unco-operativeness).]

For the Global BPRS and SANS scores, the Control Group showed no significant change between the first and final rating, whereas the Treatment Group showed a significant drop in their second BPRS rating, taken at the end of their ten music therapy sessions (T-test, $T=3.22$, $p=0.004$), and little change in their SANS ratings.

For the BPRS and SANS subsections, the Treatment Group showed some, non-significant, improvement in all subsections of the BPRS, and in all but one (Apathy) subsections of the SANS. The Controls showed a worsening in their BPRS sub-scores for Hostility and Withdrawal, and for their SANS sub-scores for Inattention and Alogia. Other scores showed some, non-significant, improvement.

(iii) Within Treatment Group Comparison:

Improvement levels for the MIR and BPRS ratings were set so as to divide the Treatment Group into two equal groups. Subjects who showed improvement were then compared to those who did not, to examine whether there were any differences between them. The Mann-Whitney U Test was used.

Table Three, below, shows that Improvers' scores for the first MIR(S) and global BPRS ratings were higher than those of non-improvers, the difference in the MIR scores being significant, ($U=13.5$, $p=0.004$). The improvers' global SANS scores were significantly lower than non-improvers ($U=21$, $p=0.02$), as was their sub-score for Affective Flattening, although this was non-significant. The other variables do not show differences between these two groups.

TABLE THREE

TREATMENT GROUP:
COMPARISON BETWEEN BPRS IMPROVERS AND NON-IMPROVERS
 Mean and Standard Deviation (in parentheses)

	<u>NON-IMPROVERS</u> n=11	<u>IMPROVERS</u> n=10
<u>PERSONAL DATA</u>		
AGE	37.5(9)	38.1(9)
Duration of Illness	14.1(8)	9.6(6.5) (NS)
<u>MUSICAL DATA</u>		
Index of Musical Experience	9.6(3.1)	10.8(3.5)
Music Perception Test	28.4(5.3)	30.3(5.1)
M.I.R.(S)		
(first rating)	3.6(1)	5.1(1) *
(second rating)	4.9(1)	5.95(0.7)
<u>PSYCHIATRIC DATA</u>		
<u>BPRS</u>		
(first rating)	16.5(8.8)	21.2(5.6) (NS)
(second rating)	16.6(7)	12.3(4.7)
<u>S.A.N.S.</u>		
(first rating)	55.3(12)	40.2(13.5) **
(second rating)	52.1(18.7)	41.4(15.8)
<u>B.P.R.S.</u>		
Anxiety and Depression	4.7(2)	4.7(1.6)
Withdrawal	3.4(2.5)	2.9(2.5)
Thought Disorder	4 (2.8)	4.2(3.3)
Hostility	2(1.7)	2.6(2.3)
<u>S.A.N.S.</u>		
Affective Flattening	15.9(3.3)	10.4(6) ***
Apathy	6.3(2.7)	5.6(3.3)
Alogia	4.4(3)	2.2(1.3)
Asociability	12.3(3.8)	10.5(2.7)
Inattention	3.9(1.4)	2.9(2.2)

Mann-Whitney Test. *p=.004; **p=.02 ; ***p=.03 (Two-tailed)

Table Four, below, shows that subjects whose MIR scores improved (n=10) tended to have slightly lower scores for the first MIR (mean, 3-~~7~~) and global BPRS (mean, 15.5) scores than non-improvers (n=11) (MIR mean, ~~4~~-8; BPRS mean, 21.6). None of these differences was significant, and differences for other variables were negligible.

TABLE FOUR

TREATMENT GROUP: COMPARISON BETWEEN M.I.R.(S) IMPROVERS AND NON- IMPROVERS

Mean and Standard Deviation (in parentheses)

	<u>NON-IMPROVERS</u> n=11	<u>IMPROVERS</u> n=10
<u>PERSONAL DATA</u>		
AGE	39(9.5) (ns)	36.3(8.2)
Duration of Illness	12.1(6.7)	11.8(8.8)
<u>MUSICAL DATA</u>		
Index of Musical Experience	11.3(4)	8.9(2)
Music Perception Test	30(5.6)	28.7(4.8)
M.I.R.(S)		
(first rating)	4.8(1.3)	3.7(1) *
(second rating)	4.9(1)	5.9(0.7)
<u>PSYCHIATRIC DATA</u>		
<u>BPRS</u>		
(first rating)	21.6(6.4)	15.5(7.7) *
(second rating)	16.5(7.3)	12.5(4.3)
<u>S.A.N.S.</u>		
(first rating)	47.5(15.2)	48.7(15)
(second rating)	48.9(15)	44.9(21)
<u>B.P.R.S.</u>		
Anxiety and Depression	5.1(2)	4.3(2.2)
Withdrawal	3.3(2.7)	4(2.9)
Thought Disorder	4.8(3)	2(2)
Hostility	2.5(.2.3)	3(2.7)
<u>S.A.N.S.</u>		
Affective Flattening	13(5.2)	13.5(6)
Apathy	5.6(2.3)	6.3(3.6)
Alogia	3.7(3.3)	3(1.3)
Asociability	11.4(3)	11.4(3.8)
Inattention	3.5(2)	3.4(1.9)

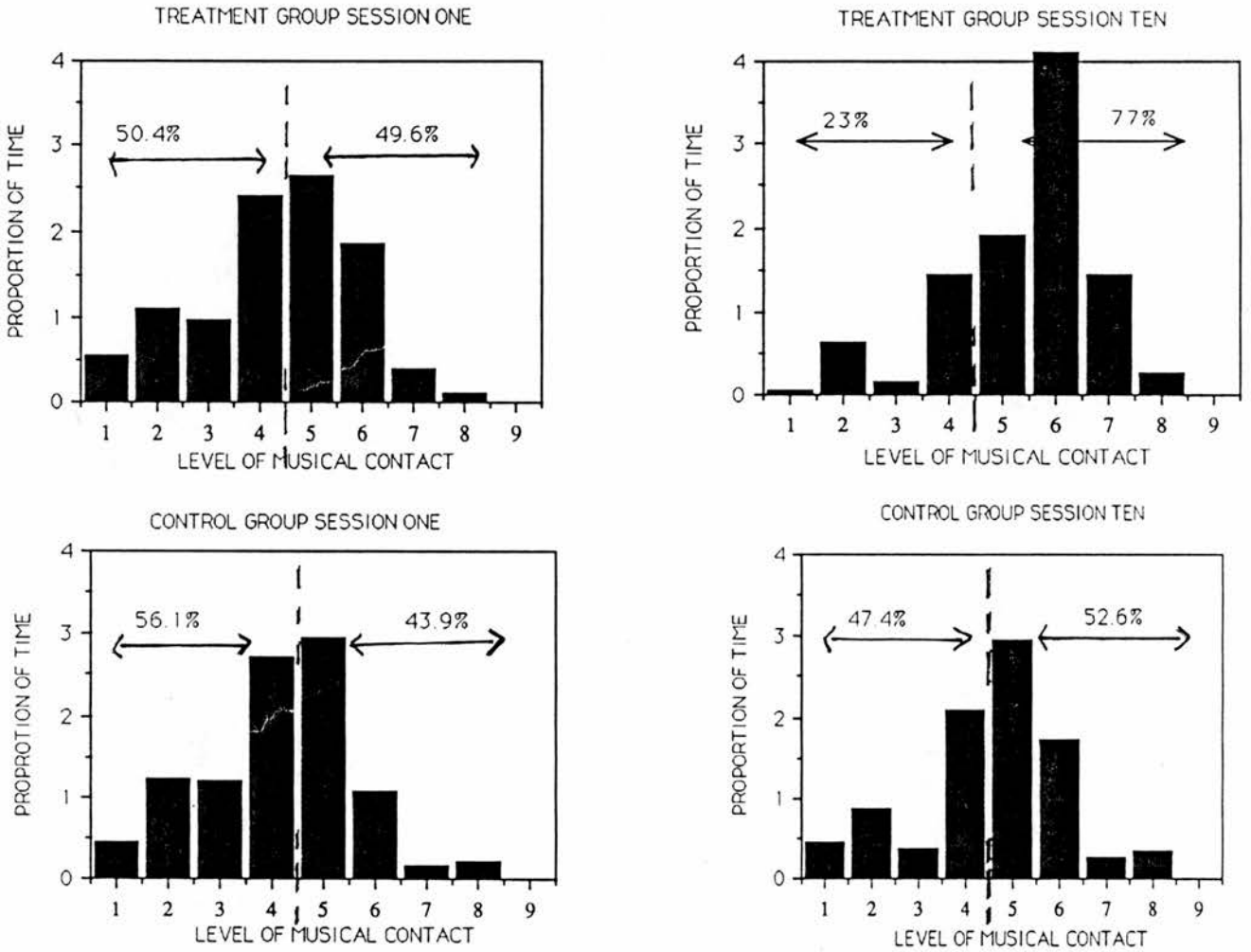
Mann Whitney Test (NS)

7.4.3. Between Group Comparison: Distribution of Time Units over
Nine Levels of Musical Engagement, Sessions 1 and 10.

Figure Seven (below) illustrates the spread of time units for the two groups for the first and last sessions. In session 1, both groups show the highest concentrations at level five (Tenuous Musical Response) and at level four (Self-directed Musical Response). In the first session the Treatment Group spent 50.4% and the Control Group 56.1% of their time below level Four (no musical contact or responses to T) .

In the final session, the Treatment group show a shift, spending the highest proportion of time in level Six, (Sustained Musical Response), followed by levels Five, (Tenuous Musical Response), Four, (Self-Directed Musical Response), and Seven (Tenuous Mutual Musical Contact). In contrast, the Control Group show little change from the first session, with Levels Five and Four still having the biggest proportion of time. In the final session, the Treatment group spent 77% and the Controls 52.6% of time above level Four (i.e. their musical responses were directed towards T) .

FIGURE SEVEN



PROPORTION OF TIME SPENT AT EACH LEVEL OF MUSICAL CONTACT
FIRST AND FINAL SESSION

7.4.5. Distribution of time-units over Nine Levels of Musical Contact, Sessions 2,5 and 8, Treatment Group.

The Treatment Group's improvisations, on tuned and untuned percussion instruments, were analysed using the MIR. Figures Eight to Eleven (below) show the shift in allocation of time units to higher levels of musical contact as the sessions progress. The Untuned and Tuned percussion or Melodic Instrument improvisations are shown on separate figures.

Figure Eight shows the first and final session for the Treatment Group, for the Bongo/Piano improvisation. (It is worth remembering that the format of the first and final sessions was identical: all subjects played the Bongos, in contrast to sessions 2 to 9, where they could choose from a variety of untuned percussion instruments.) Session 10 shows an increase in time spent at level 6, (more sustained musically directed response) and a decrease in time spent at levels 1 (no musical contact) and 3 (one-sided contact: non-musical response).

Figure Nine shows the gradual shifting of MIR scores towards higher level of interaction, during sessions 2, 5 and 8. The similarities between session 8 and 10 (Fig. Eight) suggests that ceiling scores may, in fact, have been reached in Session 8.

Figures Ten and Eleven show lower scores, overall, than Figures Eight and Nine. This may be due to the melodic component of playing the Marimba, which might have complicated subjects' task. Here again, the first and final sessions (Figure Ten) followed an identical format, in that all subjects took part in a

musical exchange on the Marimba. In the other sessions, shown on Figure Eleven, subjects could select other melodic instruments, and the therapist usually played on the piano during these improvisations. The highest proportion of time in Sessions 1,2,5 and 8 was on level 4 (one-sided contact: self-directed response). This may suggest a fascination or absorption with the instrument itself, at the cost of interacting with the Therapist. However, there is a shift towards higher MIR levels, especially in sessions 5 and 8. By the final session, the shift towards level 6 is more established, and this distribution of time units over the nine levels resembles that for the bongo/piano improvisation for the final session.

FIGURE EIGHT

BONGO/PIANO IMPROVISATION
PROPORTION OF TIME UNITS SPENT AT EACH LEVEL

TREATMENT GROUP

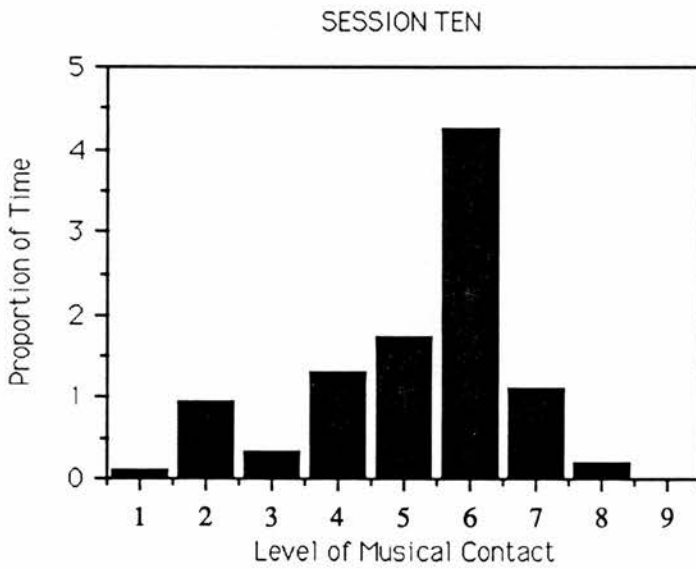
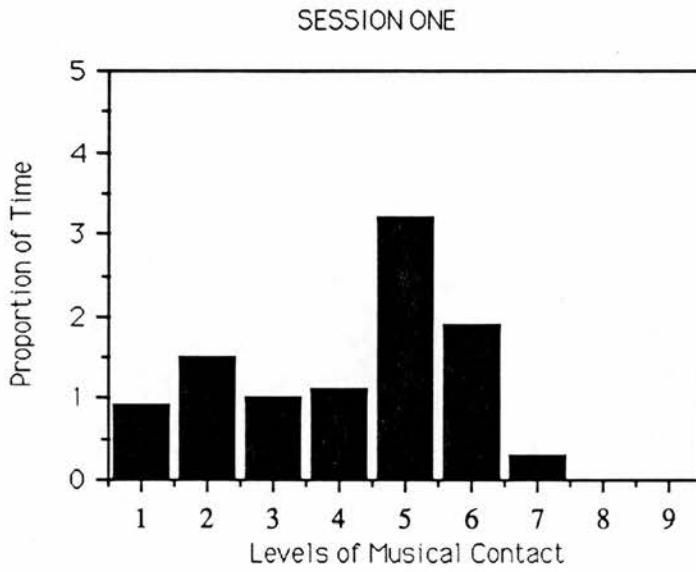


FIGURE NINE

PERCUSSION/PIANO IMPROVISATION
PROPORTION OF TIME UNITS SPENT AT EACH LEVEL

TREATMENT GROUP

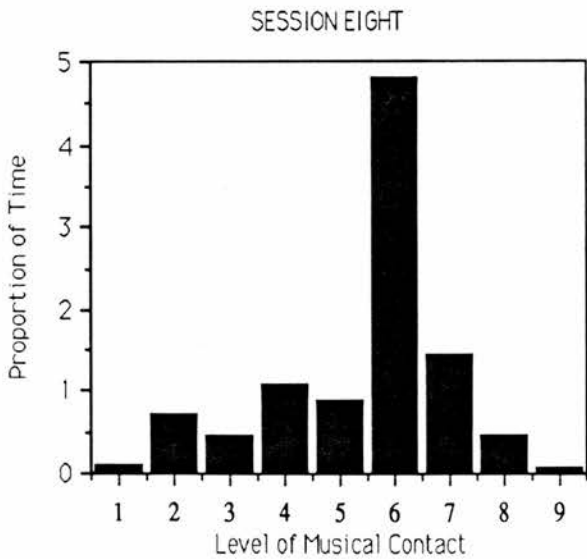
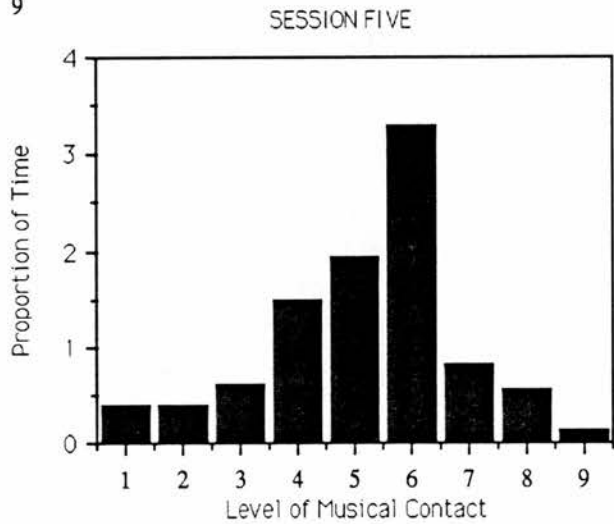
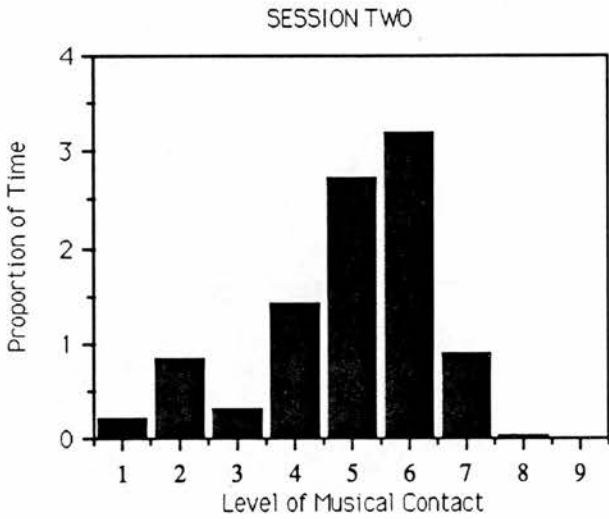


FIGURE TEN

MARIMBA EXCHANGE IMPROVISATION
PROPORTION OF TIME SPENT AT EACH LEVEL

TREATMENT GROUP

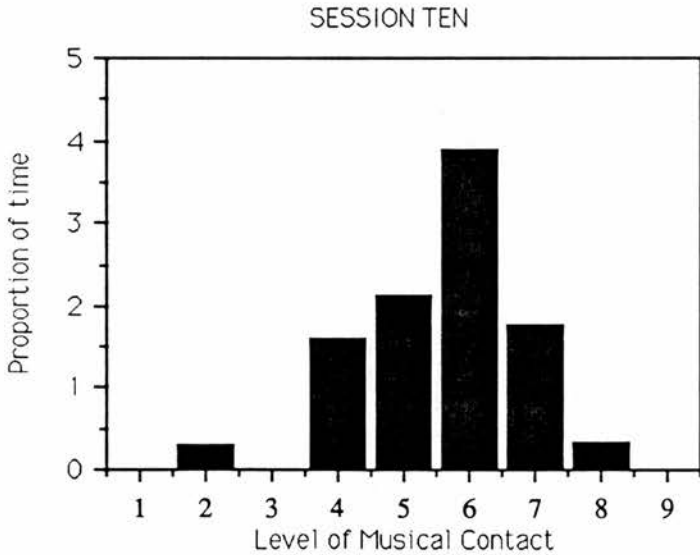
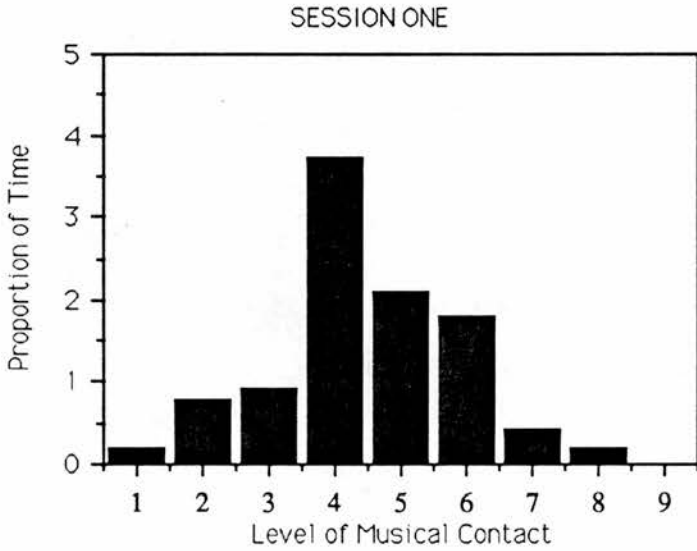
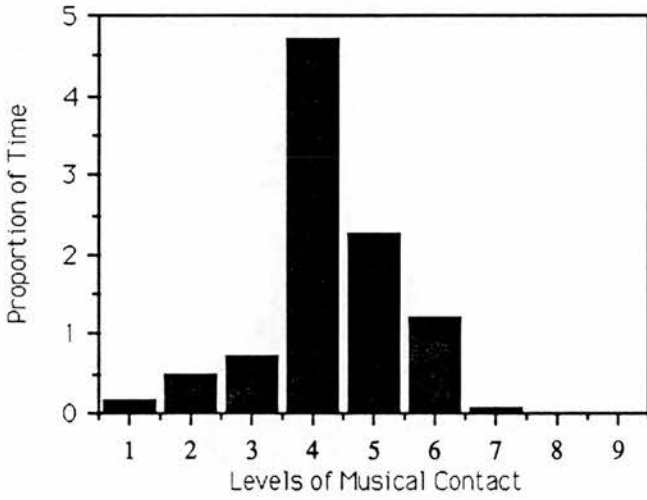


FIGURE ELEVEN

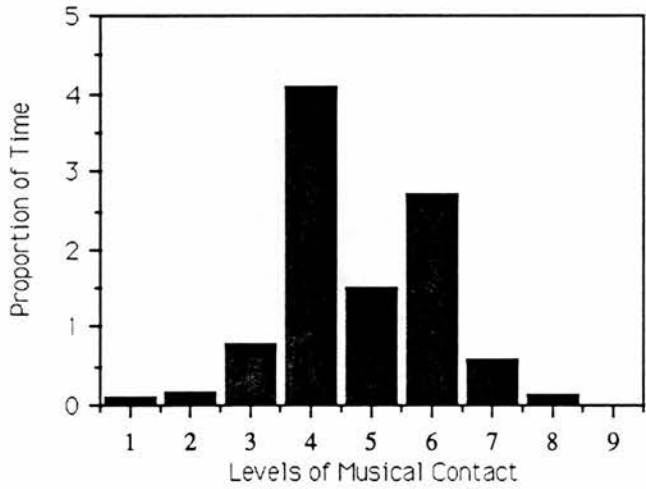
MELODIC INSTRUMENT/PIANO IMPROVISATION
PROPORTION OF TIME SPENT AT EACH LEVEL

TREATMENT GROUP

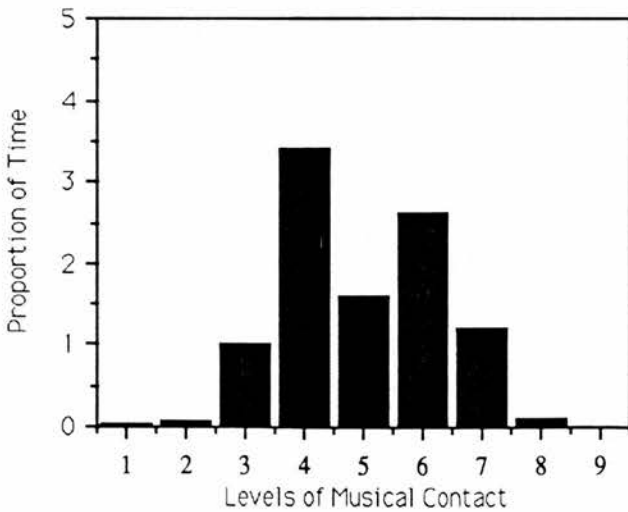
SESSION TWO



SESSION FIVE



SESSION EIGHT



7.5.DISCUSSION.

This study is not a double blind clinical trial and the control subjects, who were matched as closely as possible for such potentially important variables as age, musical background and duration of illness, did not attend a substitute activity. Nevertheless, the results suggest the possibility that music therapy may have improved the clinical state of subjects in the treatment group. Moreover, I was unaware of any changes in activities at the Day Hospital during the time of the sessions which might have interfered with the study.

Those subjects who attended regular, weekly individual sessions showed an improvement in their clinical state, as measured by the BPRS, and in their capacity to be musically responsive to the therapist even though they were unable to take the initiative in the musical interactions. They also showed a significant increase in their length of musical interaction by the end of the ten sessions. The Controls, who were matched as closely as possible for such potentially important variables as age, musical background and duration of illness, showed a smaller (and non-significant) improvement for their BPRS and MIR scores, and no significant change in SANS scores. The difference in their length of improvisation was negligible.

For the Treatment group, the longer musical engagements over the ten sessions reflect the qualitative improvement in the musical interaction: the improvisations could be developed further as the two players had more to say to one another. The sustaining of any communicative interaction, such as a

conversation, depends on variation and fluctuation of its content and of its musical components or prosodic features, that is, the shared 'narrative or message' (Buck,1984). An unvaried musical interaction that becomes perseverative and stereotyped would not be of therapeutic benefit to the patient, and the therapist should not allow this kind of interaction to be sustained.

The Treatment group's shift to level Six in the final session is encouraging: here the patient is able to take the other person's expressions into account by responding in an appropriate and sustained manner within the shared context. Thus, when the therapist introduces musical changes to extend the improvisation, the patient's response supports this development rather than restricting it. However, the patient does not, as yet, initiate aspects of interaction. A longer period of treatment might have resulted in higher levels of interaction being reached, but on the other hand, chronic schizophrenics might generally be unable to reach a higher level of interaction. This remains to be determined in future work.

The results show that clinical improvisation techniques provide an ideal context to illustrate the concept of Dynamic Form, or to illustrate the duality of music and emotion in basic human communication. The MIR, extended for this study, assesses the communicative quality of the improvisation, rather than subjects' cognitive musical capabilities. It provides clues about schizophrenic patients' interactive capacities as these are revealed through sharing in a musical context, giving answers to questions such as: how responsive is the patient to the

therapist's playing; to changes in the musical statements; to the development of a musical theme; to an increase in musical tension (through harmonic structuring, a faster tempo and a louder dynamic level, for example)? How does the patient cope with these changes: does s/he retreat into a repetitive and rigid rhythmic pattern, thus shutting out possibilities of sharing the change? Does the patient become disorganised, thus losing contact with the therapist altogether? Does the patient's incapacity for responding and for taking the musical initiative restrict the musical vocabulary of the interaction? Is the patient at all aware of the limitations of the interaction?

The MIR appears to be a highly sensitive instrument for assessing and discussing the interactive capacities of chronic schizophrenic patients through musical improvisation. Support for the MIR's emphasis on the communicative or interactive role of clinical improvisation rather than on its purely musical aspect is gained from Steinberg and Raith (1985). Their study examined the musical behaviour of normal and mentally ill people who had learned to play musical instruments. They analysed their solo performances of well-known folk tunes and improvisations, and found that the schizophrenic subject group were able to maintain a steady intra-individual tempo. The critical issue for my purposes, however, is NOT whether patients are able to organize their solo utterances, but whether they are able to adapt these in order to communicate with another person, and whether they are able to 'read' the communicative forms of the other's behaviour, as Stern (1985) described in Chapter Two.

Musical experience did not feature as a factor in distinguishing the two groups, and this strengthens the argument that it is the inherent emotional capacity of the subject to interact meaningfully which is elicited in music therapy, irrespective of previous musical knowledge and experience. Such a conclusion is supported by the complex intuitive responses to musical communications of a mother shown by infants younger than 6 months of age (Beebe et al, 1985; Trevarthen, 1986, 1987; Tronick, Als & Adamson, 1977).

Finally, the Treatment Group subjects found the weekly individual music therapy sessions pleasurable and engrossing. The good attendance and the small drop-out rate (2 Treatment Group subjects dropped out and 1 Control) confirm this. Indeed, Treatment group subjects spontaneously commented on their enjoyment of the sessions, and noted their increased confidence and improved concentration - as well as remarking how hard they had worked during the sessions. In addition to the possible effects on the quality of their interpersonal contacts and communicative skills, regular music therapy sessions appear to improve the quality of life of these patients by inviting, encouraging and supporting the development of an intimate, non-verbal interaction. Thus, music therapy may indeed be useful in the rehabilitation of chronic schizophrenic patients.

CHAPTER EIGHT

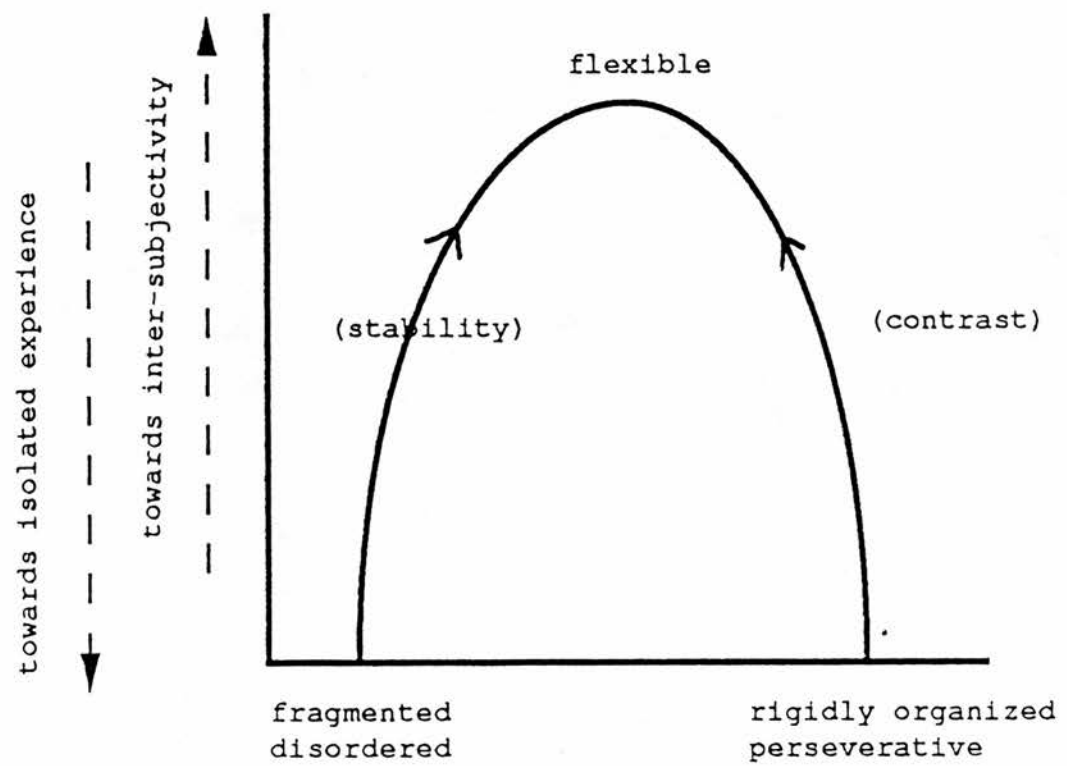
In conclusion, it would appear that the concept of Dynamic Form illustrates systematically the duality of the emotional/musical form revealed in human communication, be it musical or emotional.

The literature of music aesthetics supports this concept, although it does not go far enough: it shows that music and emotion resemble one another, and music reflects patterns of human emotion. Humans recognize these patterns, which shift and fluctuate constantly, embodied in music, because these already exist in our minds.

I propose that their existence in our minds is the result of the inherently musical character of the motivational structures of emotion, revealed in basic human communication, which we all experience as communicating human beings.

The concept of Dynamic Form may be shown diagrammatically, in Figure Twelve, below.

FIGURE TWELVE



THE RELATIONSHIP BETWEEN THE QUALITY OF DYNAMIC FORM AND THE INDIVIDUAL'S INTERACTIVE POTENTIAL

In this diagram, the y-axis represents the spectrum of communication, ranging from isolated, non-interactive experience, to mutually satisfying, intersubjective communication. The x-axis represents the contrasting limitations or restrictions on the interactive emotional processes, ranging from fragmented, disordered patterns to rigidly over-organised processes. The individual's position at the non-interactive end of the communicative spectrum may be the result of either a conscious or intentional desire to remain isolated, or of a 'pathological' incapacity to participate fully into a communicative relationship (Cameron, 1944; Guntrip, 1961, 1977). This incapacity is found, for example, in chronic schizophrenics (Brown and Avstreich, 1989; Condon and Ogston, 1966).

The inverted U-curve may be conceived as two arrows, moving towards the apex of flexibility, which is at the intersubjective end of the communicative spectrum. Here, the individual has the capacity and willingness to enter into a fully mutual communicative interaction, and this is revealed by the flexibility and adaptability of his/her emotional processes (Winnicott, 1971). The use of a curve rather than straight lines symbolizes the constant shifts or the dynamic aspects of these qualities within us (Stern, 1985).

The inverted U-curve represents qualities of Dynamic Form in communicative expression. These qualities can only be revealed within the context of human communication, as shown by the relationship between the curve and the y-axis. They are not to be identified with emotional states *per se*, but with the dynamic features that relate to these categorical emotions in

their communicative functions. For example, a discrete emotional state such as anger can be expressed in a disordered and fragmented manner, or rigidly, coldly and relentlessly. It can also be expressed in a flexible way, in which case, it will have quite a different 'flavour': at this end, also, its expression will be more communicative, in that it will be adaptable to the other person's apprehension of it. Hence, a capacity to communicate in a flexible manner facilitates the 'sharing' of emotions with another person.

The literature on direct human communication, particularly that on mother-infant interaction, demonstrates the 'pure' or 'fundamental' level of communication, without referential or semantic considerations (Murray and Trevarthen, 1985; Stern, 1985; Stern et al, 1985; Trevarthen, 1988, 1984, 1987). This literature demonstrates that the quality of our acts convey, directly, our emotional motivation and capacity to interact with another person, and that the qualities of our communicative and expressive acts are essentially musical, in the fundamental sense of the term. Stern (1985) defines these qualities, which are common to all the senses, as intensity, shape, time, contour, motion and number.

A range of studies of mother-infant interaction have demonstrated the infant's alertness and responsiveness to these temporal aspects of gestures and prosodic features of a mother's speech in intersubjective communication (Beebe et al, 1985; Marwick, 1986; Papousek & Papousek, 1981), and the collapse of this fluid, dynamic interchange when the mother is depressed or mentally ill (Murray, 1988). Depressed mothers'

unresponsive or intrusive responses to their babies result in stilted interactions, and in babies becoming withdrawn and less communicative. Moreover, the absence of self- as well as interactional-synchrony has been shown in studies of the interactive gestures and prosodic features of mentally ill, psychotic patients interacting with 'normal' adults (Condon & Ogston, 1966). The critical role of temporal interactive features in human communication (Crystal, 1987) has also been demonstrated by linguistic studies which have shown that speakers with a high level of empathy towards one another show greater sensitivity and adaptability to one another's prosody, timing and duration of phrases, than speakers with less empathy towards one another (Feldstein & Welkowitz, 1978).

In this thesis, I demonstrate the concept of Dynamic Form through the use of clinical improvisation techniques. Clinical Improvisation, with its dual communicative and musical agenda, reveals the nature of these Dynamic Forms instantly, by providing an interactive context between patient and therapist.

The clinical use of music improvisation (Nordoff & Robbins, 1977) enables the sounding of these features not only because, in comparison to other arts, music is a dynamic sonorous medium, i.e., it shares the 'external' characteristics of Dynamic Form, but because basic emotional processes, which are revealed in direct human communication, are musical in nature, and because clinical improvisation seeks to make communication. In this sense and at this level only, music and emotion show a dual aspect: they are two sides of the same coin of communication. This duality is illustrated by the MIR: here the focus is on the interactive quality of the therapist and

patient's musical utterances in clinical improvisation. These musical utterances are the expression of Dynamic Form through music, the ideal medium to illustrate this concept because of the inherently musical nature of our communicative acts in basic human communication. The MIR, developed to support the concept of Dynamic Form, defines and evaluates not the purely musical aspect of the joint improvisation, nor subjects' musical cognition - previous attempts have already shown the limitations of these approaches - but rather, the interactive, emotional features of the communication.

The rigorousness of this concept is demonstrated by the two experimental studies, which use the MIR to evaluate clinical improvisation.

The pilot study, discussed in Chapter ~~six~~ , has shown that clinical improvisation reveals the condition of Dynamic Form in pathology. Severely withdrawn schizophrenic subjects had difficulty in interacting musically with the therapist; less withdrawn depressed patients showed an intact sense of Dynamic Form, but were unable to take initiative in extending it, and non-clinical controls showed the most flexible musical interaction. The main study showed that clinical improvisation extends the patient's use of Dynamic Form: schizophrenic patients' interactive musical capacities improved over ten individual sessions. This therapeutic musical process extends the patient's capacity to enter into communication outwith the session, as was demonstrated by improvements in the treatment group's psychiatric ratings. This improvement in their basic emotional processes further substantiates the concept of the music/emotion interface. On Figure Twelve, the therapeutic extension and activation of Dynamic Form through improvisation

may be represented by moving a rigidly organised musical performance towards an experience of contrast. For example, a patient whose playing is always fast or always loud (i.e. rigid), may need to experience the musical contrasts of playing slowly or quietly, en route to gaining the control to play flexibly. At the other end of this spectrum, a patient whose playing is utterly chaotic, with no clear sense of musical pulse, may need to experience the stability of a regular pulse, which can be offered by the therapist, en route to playing more flexibly.

One interesting, though as yet unsubstantiated observation, is that the road towards communicative flexibility does not simply travel along the curves illustrated in Figure 12. . The patient's performance may leap across to the other end of the spectrum: for example, the clinical intervention of stability may result in the chaotic patient becoming rigid, which is the pathological experience of stability, and the therapist has to allow the patient to familiarise him/herself with both the disordered and the rigid aspects of Dynamic Form, while also offering therapeutic extensions of stability and contrast. It is only by allowing the patient to experience the various aspects of Dynamic Form in his/her playing that the experience of flexibility, which will be the ultimate aim, will be truly authentic: it will incorporate the various polarities that exist within flexible communication.

Many questions remain to be addressed, in future research. I outline some of these.

(i) The difference between clinical and non-clinical improvisation might be examined to clarify the differences

between improvisations whose emphasis is musical rather than communicative, i.e. non-clinical, and those whose emphasis is more communicative than musical, i.e. clinical improvisations. For example, improvisations between (non-therapist) musicians, who have not been trained to 'read' and 'present' Dynamic Form, could be compared to improvisations between therapists (who have been trained to read and present Dynamic Form), and their partners. Clarification of the differences in performance would help to strengthen the recognition of Dynamic Forms in music and emotion. I suspect that although 'non-clinical' improvisation will reveal aspects of Dynamic Form (since music and emotion are, after all, inseparable), the non-therapist musician may not know how to 'read' them, other than intuitively, or how to develop them. This improvisation would then have a more 'musical' than communicative emphasis.

(ii) The relationship between subjects' musical experience or training and their capacity to interact in clinical improvisation also needs closer attention. This would address the 'double' agenda of music and communication in clinical improvisation: subjects whose capacity to communicate is intact should communicate mutually in clinical improvisation (at MIR level nine), whatever their 'musical' abilities or experience. Here, several designs are possible, e.g. the comparison of non-clinical subjects who are musically experienced with those who are not.

(iii) The MIR has shown itself to be a sensitive instrument for measuring change in the performance of chronic schizophrenics. However, their mental condition puts them at the lower end of the communicative spectrum (Only some reached MIR level nine, and only for short periods of time). The MIR, needs extending

in the higher levels, in order to measure more discriminatively the interactive capacities of more communicative patients.

Here, more needs to be understood about 'normal'

musical/emotional interactive processes in improvisation.

(iv) The examination of varieties of mental illness through improvisation offers endless possibilities. One immediate possibility would be to compare the interaction between the depressed mother and her infant, and the same depressed mother and a music therapist improvising, in order to examine the parallels in the non-verbal interactions.

Finally, it appears that the clinical situation of music therapy reveals the Dynamic Forms of emotion and music at their clearest and most vivid. Analysis of clinical improvisation in music therapy demonstrates that any decrease in the capacity to communicate is reflected in interactive musical improvisation. This illustrates systematically, the intuition that Music exists in Human Communication, and Communication exists in Music.

A Musical Assessment of Psychiatric States in Adults

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Abstract. In music therapy, joint musical improvisation of therapist and subject provides the framework for a spontaneous and intimate, non-verbal interaction. This study shows that such an interaction can be used to reveal the subject's capacity for emotional contact with another person, the nature of this contact and how well it is sustained. We examine the musical interaction in first music therapy sessions using a model of analysis specially developed for this study. A comparison between 15 schizophrenics, 15 depressed patients and 15 clinically normal controls revealed significant differences. The findings, which take into account subjects' musical background and perceptual functioning, have implications for the diagnostic use of music therapy in adult psychiatry.

Introduction

The healing powers of music have been known for many centuries [1]. Music conveys feelings and emotions through patterns of sound [2] and it finds expressive forms that are common to many cultures [3]. In the West it is customary to distinguish between musical and non-musical people, but in the Venda and other African cultures, for example, musicality is not perceived as restricted to the chosen few [4].

Universal principles of emotional communication are also demonstrated in cross-cultural studies of mother-infant interactions, which show that babies, from birth, are actively responsive to intuitive inflections of pitch, timbre, dynamic level and

tempo in their mothers' voices [5]. Mothers affirm and facilitate the development of their babies' self-expression by varying their vocalisations and gestures [6]. Both partners adjust and adapt their expressions to one another. Thus, the baby shares emotion and becomes expressive and assertive within an interactive dyad, a communicative context which has an overtly musical character with strong universal features [7, 8].

In adult speech, the mutual attunement of the musical and prosodic components of vocalization provides a framework for verbal communication. Studies show that the more empathic the contact, the higher the adaptation by the two partners of vocal quality, amplitude, conversational pacing and switching pauses [9]. The expression of emo-

tions gains meaning within a communicative setting: expressing emotion has influence only if others can sense the meaning of the expression and this will depend on the felicity of expression and its relation to interpersonal contact [10].

The use of music as therapy can be seen as an extension of this most basic form of emotional communication into a clinical context. The therapist and musical partner use improvisation to establish an interaction by musical sounds [11]. By accommodating to the partner's musical utterances – no matter how idiosyncratic – through clinical music improvisation, the therapist develops an interactive context, or dialogue, which enables the partner to communicate emotions with the therapist. By sharing the beat of the music and by exploring the potential of their joint musical improvisation, the therapist confirms the partner's musical utterances, enabling him or her to explore and expand a range of emotions and their expression [12]. Thus, music therapy aims to facilitate the self-expression of adults suffering from a range of emotional disorders and mental illnesses [13, 14].

Research in music therapy has pursued two trends: one attempts to assess the relationship between music therapy intervention and specific, non-musical outcomes, such as change in reading skills, stereotyped behaviour, etc. The other evaluates the musical processes of communication themselves [15]. For the latter, Bruscia's Improvisation Assessment Profile [16] and the Nordoff-Robbins Evaluation Scales [12] are useful models, although to date, no research using these for individual adult work has been reported. Bruscia's model is primarily devised for group work structured in a particular way, and it does not, in our view, provide

a satisfactory description of the interactive musical process. The Nordoff-Robbins Evaluation Scales were designed for work with children and are also limited for our purposes, since they do not take into account the more complex character of musical interaction between an adult partner and therapist. The diversity of other assessment models [17] is confusing for the professional community and there is clearly a need for standardised methods to evaluate the musical interaction between therapist and adult partner.

The evaluative model developed for this study measures the interactive musical engagement in joint musical improvisation, ranging from 'no musical-emotional contact', at level 1, to 'mutual responsive contact', at level 6. We examined the musical contact between subjects and therapist in individual sessions. Chronic schizophrenics, unipolar depressed patients and clinically normal controls were compared. Then an assessment was made of the relationship between clinical states and musical contact, and between musical contact and the subjects' musical background and musical perception.

Methods

Fifteen adult psychiatric patients with a clinical diagnosis of chronic schizophrenia: 15 with unipolar depression and 15 controls took part in the study. Subjects were aged between 17 and 55 years of age, had no history of head injury or other neurological impairment, and no drug- or alcohol-related problems. All patients were on therapeutic doses of major tranquilizers and details of medication within the last 3 months and at the time of the session were recorded.

Subjects in different groups were matched as closely as possible for age. They were not matched for

gender and social class, which followed the common differences in clinical populations (table 1). Each subject took part in an individual music therapy session, which was recorded on audio and video tape. There was no attempt to match groups for musical experience or musical perception – rather, these details were recorded to examine the relationship between these and other variables.

Patient subjects were independently screened and given a research diagnosis by a consultant psychiatrist, using a standard diagnostic instrument ('Schedule for Affective Disorders and Schizophrenia according to Research Diagnostic Criteria', SADS) [18]. Clinical states were also assessed by an independent rater, using the Brief Psychiatric Rating Scale [19], the Hamilton Rating Scale for Depression [20] and the Scale for the Assessment of Negative Symptoms [21]. Wherever possible, psychiatric ratings were undertaken on the same day as the music therapy session. Where this was not possible, ratings for the depressed group were undertaken within 2 days, and for the chronic schizophrenic group, within a week of the session.

The music therapy session took place in a room furnished with a piano, untuned and tuned percussion instruments (i.e. bongo drums, side drum and cymbal; and a marimba, chromatic xylophone and chromatic metallophone) and an audio cassette recorder. Two video cameras were positioned to obtain a split screen image of the therapist and subject playing on separate instruments. The session included a 'Musical Experience Interview' to examine the subjects' musical background, and a musical improvisation in which subjects were asked to play freely on an untuned percussion instrument (usually bongo drums), while the therapist joined in on the piano. Subjects were told they could play 'anything they liked', and that the therapist would 'join in once they had begun'. A second musical improvisation followed, on the marimba. Therapist and subject were seated opposite one another with the marimba between them. A turn-taking improvisation was proposed, in contrast to the concurrent improvisation created in the first improvisation. Instructions were that therapist and subjects would 'take it in turns to play'. When one person had finished the other would answer them, 'just like in a conversation'.

After the improvisations, subjects were asked how they found playing the instrument: for example, did the piano music fit their bongo music: were they able

Table 1. Subjects' characteristics (n = 15)

	Schizo- phrenics	Depressed	Controls
n	15	15	15
Age			
Mean	36.7	38.3	40.5
Range	18-55	17-52	24-55
SD	10.3	12.2	9.8
Sex			
Men	10	5	9
Women	5	10	6
Social class			
1	-	2	4
2	-	6	5
3	11	4	3
4	1	3	3
5	3	-	-

There is a discrepancy in matching of gender and social class, due to a high proportion of male schizophrenics, and a high proportion of female depressed patients, which is representative of the hospital population. The mismatch in social class is due to a high proportion of chronic schizophrenics coming from lower socioeconomic backgrounds.

to play with the therapist or did they find that they were playing alone, 'doing their own thing': did they notice any changes in the therapist's music and if so did they follow these changes or did they go on with their own playing. Similar questions followed the marimba turn-taking improvisation, and the subjects' responses were noted. Finally, a musical perception test was administered to confirm that there was no gross neuropsychological dysfunction. This measured the subjects' perception and reproduction of pitch relationships and of rhythmic patterns, and items were selected from Luria's Neuropsychological Investigations [22]. The subjects reported their mood both before and after the musical improvisations. The results of these reports, as well as the relationship between the musical and the psychiatric measures will be discussed in a forthcoming paper. Recordings of the improvisations were assessed using the 'Music Improvisation Rating'.

Methods Developed for This Study

Index of Musical Experience (IME)

This ascertained each subject's past musical experience and interests. A score was calculated for each subject in two parts, as follows:

(a) *Playing index:* Subjects were closely questioned on their musical background: for example, were they from a musical family; had they wanted to play music as children; had they ever played an instrument; were they self taught or had they had lessons; did they improvise, play by ear, or only play precomposed music.

(b) *Listening index:* Subjects were questioned on their listening habits: for example, did they listen to music without doing anything else; what kind of music did they listen to; how frequently did they listen; was it when they were in any particular mood; did they select music according to their mood and did they use music to effect a change in their mood.

Subjects with minimal musical experience (i.e. no more than group singing at school), would score 1. A professional, full-time musician would score 20.

Music Improvisation Rating (MIR)

For 2 players to achieve musical contact, they must find a common musical pulse. Musical pulse is defined as a series of regular beats. Metre is the regular alternation of strong beats with one or more weaker beats, and rhythm refers to the grouped organisation of beats around the pulse. Tempo refers to the rate at which music is performed [3, 23, 24].

The MIR developed for this study defines 6 levels of musical-emotional contact between therapist (T) and partner (P), each with specific musical criteria. A summary of each level follows. (These are discussed fully in a paper currently being prepared.)

Level 1, No contact: P's musical utterances are irregular and unpredictable: the pulse is erratic, the metre is not established, rhythmic patterns are absent or unformed. T is unable to match or meet P's musical utterances and there is no shared musical pulse between the 2 players.

Level 2, One-sided contact: T is able to match P's musical statements either by mirroring P's rhythmic patterns if these are formed; or by reproducing the pulse in P's music, so that the 2 players have a common beat. However, when T intervenes by, for example altering the tempo (speeding up or slowing down), rhythmic patterns (e.g. changing from ♩ ♩ ♩ to ♩ ♩ ♩ ♩) or metre (e.g. accenting every second beat changed to accenting every third beat), P's performance shows no response to this alteration. The musical contact between the two players is one-sided in that the common pulse and mirrored patterns are the result of T's adjustments to P. P's performance shows no apparent awareness of the other's music.

Level 3, Tenuous responsive contact: When T intervenes musically, as described above, P's response shows some alteration in response to T's performance, e.g. an attempt to match tempo, rhythm or melodic alteration. This response is limited or unsustained.

Level 4, Established responsive contact: P's responses to T's interventions are more sustained and musically less limited than in level 3. Musical initiative and intervention still very much with T.

Level 5, Tenuous mutual contact: The beginnings of an interchange; P may extend T's musical ideas and begins to initiate musical changes. P is becoming musically assertive and not imitating everything that T does.

Level 6, Established mutual contact: Mutual musical partnership, i.e. musical initiative and modelling shared by T and P. Improvisation shows a flexible use of musical components, i.e. tempo, melody and rhythm: T and P are musically interdependent within a highly dynamic, interactive musical context.

Two excerpts, lasting approximately 1 min 20 s each, were analyzed for each subject, one from the bongo improvisation and one from the marimba. Each musical excerpt was divided into 10 time units. These were distributed in the 6 levels of musical contact. Each level number (1-6) was multiplied by

its allocated time unit. These products were summed to give a global MIR score. Inter-rater reliability between three music therapists who rated five excerpts each, was satisfactory (the mean correlation coefficient between the four raters was 0.94, and the range was 0.87-0.99).

Musical Perception Test (MPT)

Two items were selected from Luria's neuropsychological investigation.

(i) *Pitch discrimination*: Subjects were asked whether 2 notes played on the piano were the same note repeated, or 2 different notes; which of 2 different notes was higher or lower in pitch; whether a group of 4 notes was repeated the same way or with any pitch alterations; to reproduce, by humming or whistling, 2 sets of notes comprising 2 and 3 pitches, respectively.

(ii) *Rhythm discrimination*: Subjects were asked to reproduce a series of rhythmic patterns executed by the tester, some in duple and some in triple time; a series of rhythmic patterns with accents; and a series of 2-7 taps and reporting the number of taps. A point was scored for every correct response. The test was intended to detect any gross neuropsychological dysfunction and to measure musical perception at a basic level.

Results

Index of Musical Experience

Table 2 shows that the 3 groups did not differ significantly in musical background, although a reliable rating could not be obtained for one schizophrenic subject who gave a florid and exaggerated account of his musical experience.

Musical Perception Test

The three groups differed significantly in MPT scores (Kruskal-Wallis test: $h = 8.99$, $p = 0.01$) and the Mann-Whitney scores re-

Table 2. Summary of musical scores for all groups

	Schizo- phrenics	Depressed	Controls
Musical Playing Index, %			
Mean	21.4	13.7	24.8
Range	0-57	0-36	0-59
SD	24.8	10.2	22.4
Musical Listening Index, %			
Mean	44.3	55	59.6
Range	5-90	10-80	5-85
SD	21	20	24.8
MPT, %			
Mean	75.5	88.4	89.5
Range	56-100	69-100	66-100
SD	14.2	11.4	12.7
MIR (bongos)			
Mean	2.3	3.3	3.6
Range	1.8-4.3	2.4-4.9	2.2-5.8
SD	0.77	0.75	1.16
MIR (marimba)			
Mean	2.4	3.5	4.3
Range	1.5-4.9	2-5	2-6
SD	0.96	0.83	1.2

vealed the significant differences to be between the schizophrenics and the depressed group ($U = 52.5$; $p = 0.01$) and between the schizophrenics and the control group ($U = 48.5$; $p = 0.008$). Scores for the depressed group were not significantly different from those for the control group.

The Musical Improvisation Rating

The three groups were significantly different in MIR for both bongo and marimba improvisations (Kruskal-Wallis test: $h = 18.29$, $p = 0.0001$).

For the bongo improvisation scores differed significantly between the schizophrenics and the depressed group (Mann-Whitney test: $U = 32.5$; $p = 0.001$) and between the

Table 3. Mean percent time spent at each level of musical contact

	Schizo- phrenics	Depressed	Controls
Level 1 (no contact)			
Mean	12.1	1.2	0.8
Range	0-35	0-10	0-7.5
SD	10.3	2.25	2.8
Level 2 (one-sided contact)			
Mean	58.3	13	14
Range	0-90	0-60	0-52.5
SD	27.8	15.5	18.97
Level 3 (tenuous response)			
Mean	15.8	37.7	28
Range	0-40	0-80	5-70
SD	13.3	22.4	22
Level 4 (established response)			
Mean	8.5	32.5	22.5
Range	0-68	0-63	0-50
SD	19.8	21.9	15.8
Level 5 (tenuous mutuality)			
Mean	5.4	14	18.7
Range	0-60	0-55	0-43
SD	16.2	17	16
Level 6 (established mutuality)			
Mean	0	1.7	16
Range	-	0-10	0-90
SD	-	3.6	24.4

schizophrenics and the control groups ($U = 25.5$; $p = 0.0003$) but there was no significant difference between the depressed and the control groups.

For the marimba improvisation, MIR scores were closely similar to the above: significant differences were obtained between the schizophrenics and the depressed group ($U = 37$, $p = 0.002$); and between the schizophrenics and the control group ($U = 21.5$, $p = 0.0002$); and there was no difference between the depressed and the control groups.

In order to examine the differences in more detail, each of the six levels of musical

contact in the three groups were compared. Since there was no significant difference between the bongo and the marimba improvisation scores within any of the groups, computations and discussions were based on the mean scores for both improvisations combined (table 3). Kruskal-Wallis tests revealed significant differences between the three groups for each level of musical contact. Figure 1 shows the mean proportion of total time spent by each group on each level during the improvisations and figure 2 summarises the relationships between the three groups for each level.

Relationship between MIR and Other Scores

Spearman's rank correlation coefficient was calculated to examine the correlation between MIR and the MPT and IME, respectively, for all subjects. Only in the control group was a significant positive correlation found between the IME and the MIR (Spearman's $Rho = 0.5009$; $p = 0.029$), which suggests that subjects with more playing experience fared better in establishing musical contact with the therapist than did those with less experience. In examining the relationship between musical perception and musical improvisation, a significant relationship was again found only in the control group (Spearman's $Rho = 0.4719$; $p = 0.038$).

Discussion and Conclusions

In *schizophrenia*, the capacity for organising spontaneous or improvised musical utterances appears to prevent the therapist from establishing musical contact with the patient. The schizophrenics spent 12% of the time at level 1, that is, with no musical con-

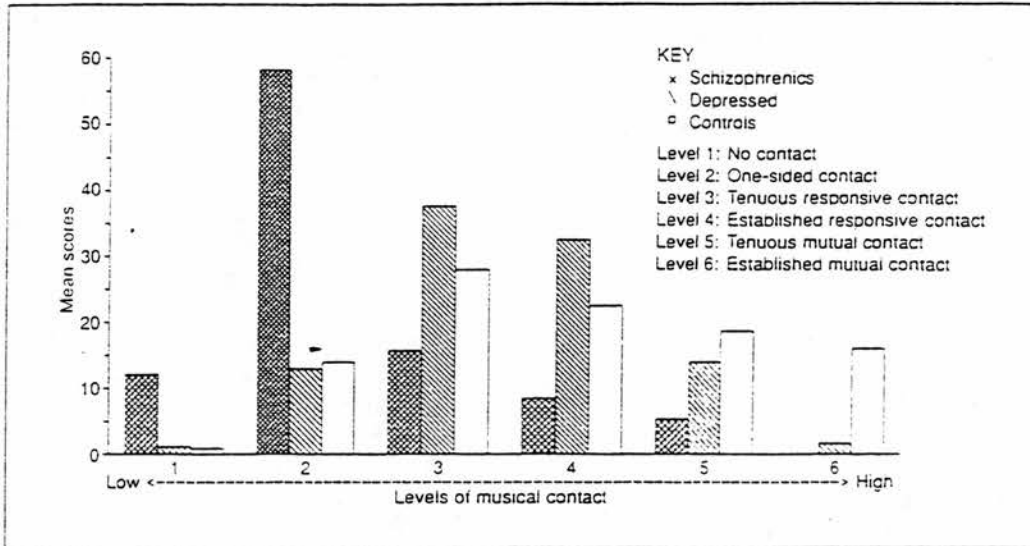


Fig. 1. Mean proportion of time spent by each group in each level of musical communication.

tact. The schizophrenics were also unable to be musically responsive to the therapist in a first music therapy session, spending the highest proportion of time, 58.3%, at level 2: their musical activity tended to remain separate and two-way communication with the therapist was not established. Such behaviour is consistent with other communication deficits found in schizophrenic patients, whose mode of expression is often idiosyncratic and unresponsive to others [25-27]. They spent a smaller proportion of time, 15.8%, at level 3, where the partner's musically directed response is limited and unsustainable. Two subjects who had substantial musical experience spent a small proportion of time at levels 4 and 5, and no schizophrenic attained a fully mutual musical partnership at level 6.

We are currently examining the musical engagements of schizophrenic patients over

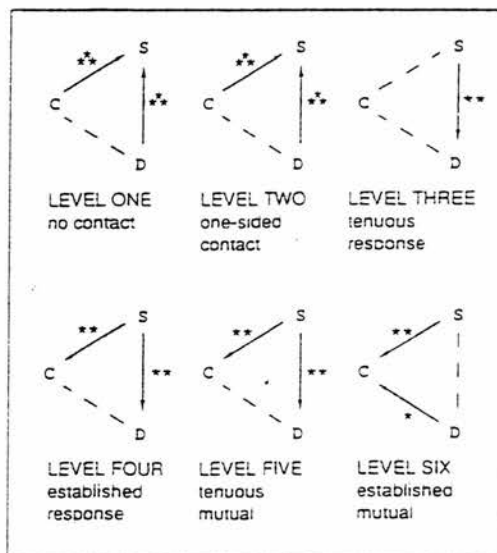


Fig. 2. Summary of relationships between groups for each level of musical contact. Mann-Whitney test: *** p < 0.001; ** p < 0.01; * p = 0.027. S = Schizophrenic; D = depressed; C = control.

ten sessions to determine the efficacy of music therapy with them.

In considering the musical improvisation ratings for the *depressed* group, the results suggest that a mood disorder itself does not interfere with the capacity for organised musical functioning as such – this group spent only 1.2% of time at level 1 –, nor does it result in the extreme lack of reciprocity shown by the schizophrenic group: this group spent only 13% of their time at level 2 (one-sided contact), which was significantly different from the schizophrenics. The depressed patients *were* able to enter into responsive musical communication with the therapist, spending the highest proportion of time (37%) at level 3, where their responses to the therapist's improvisation were musically directed but limited and/or unsustainable, and at level 4 (32.5%) where these responses were more sustained. This shows that, in contrast to the schizophrenics, the depressed group were able to reciprocate musically with T. They were, however, unable to take a musical initiative or to enter into a fully mutual relationship with the therapist, spending only 14% of the time at level 5 (tenuous mutual contact) and 1.7% at level 6 (established mutual contact).

Here, again, the quality of musical engagement reflects the clinical picture: the depressed patient is not cut off from the world to the same extent as the schizophrenic patient, unless she/he is severely depressed, which none of these patients were, so these patients were responsive to the therapist. However, they were unable to take the initiative within the musical relationship: the capacity to initiate musical statements is a gesture of self-expression and communication which requires assertiveness and a sense of self-worth. This is lacking in the depressed state.

It is interesting to note that many of the depressed patients were able to play loudly and fast when the therapist's music invited them to do so. This loud fast playing (especially in a first session and an unfamiliar setting) may seem to indicate that they had a capacity for a highly charged emotional interaction and musical assertiveness, but this proved not to be the case. The loud fast playing was more in the nature of an emotional release or catharsis over which the patients had little control and which in fact threatened the continuation of the musical relationship with the therapist. This is different from an assertion within the context of a musical relationship as, for example, in an *accelerando* and *crescendo* which is a jointly created musical climax followed by a resolution. When the intensity rose too rapidly it was the therapist's clinical responsibility to reduce the energy of the improvisation to prevent the patient's playing from becoming disorganised. A loss of musical contact resulting from such disorganization can be extremely distressing for the patient, especially in his or her first session.

In attempting to pinpoint the reasons for the differences in musical engagements between the two clinical groups, the duration as well as the nature of symptoms need consideration as potential variables. The schizophrenic subjects suffered from chronic schizophrenia, which is a long-term illness requiring continuous medication. In contrast, the depressed subjects suffered from an acute illness with relatively short-term episodes.

Score allocation for the *control* group was not unlike that of the depressed group for levels 3 and 4. They also spent the highest proportion of time at levels 3 (28%) and 4 (22.5%) but, in contrast to the two clinical

groups, they reached levels 5 (18.6%) and 6 (16%) for a higher proportion of time. Thus, the controls took more musical initiative than the depressed subjects and were able to enter into a fully mutual musical partnership with the therapist. Subjects with more musical experience were clearly at an advantage, as shown by their higher MIR scores.

The relationship between musical background and the level of musical contact in a first session needs clarifying. Our results show that only in the control group was there a significant positive correlation between these two measures, which suggests that benefits of musical experience on the level of musical contact may be lost in clinical states. Nevertheless, 2 schizophrenics with more musical experience *did* establish higher levels of musical contact. A future study could clarify this question by recruiting more subjects, half with experience of playing music and half with very little.

It might be argued that measured musical perception determines the level of musical contact. The ability to discern and reproduce musical patterns may enter into the organization of a subject's utterances in spontaneously improvised music, making it possible for the therapist to establish contact. However, it is clearly responsiveness to the therapist which determines the level of contact, rather than the sophistication of the subject's musical utterances. In this study, schizophrenics spent most of their time engaged at level 2, which suggests that despite their capacity to produce clear musical utterances which the therapist could meet, it was their lack of reciprocity which prevented them establishing a higher level of musical contact.

These various explanations gain support from findings in mother-infant research and

from studies of the effects of emotional illness in the mother on the emotions of the infant [28, 29]. A human being, infant or adult, with an intact emotional system will be able to enter into and maintain a mutual and flexible communication with another. An individual who is emotionally damaged will have difficulty in establishing mutually responsive contact with another; and one who is extremely withdrawn will be unable to do so. Our investigation shows that emotional states are reflected in the quality and level of musical contact which a therapist is able to establish with an adult in music therapy, and demonstrates that clinical music improvisation is a reliable and sensitive diagnostic tool.

Acknowledgements

This study was funded by a Research Grant from the Biomedical Research Committee of the Scottish Home and Health Department.

Drs. Janice Duncan and Douglas Blackwood, of the Royal Edinburgh Hospital, carried out psychiatric screenings of subjects; Dr. Sheena Dykes and Charge Nurse Harry Taylor, of Cambridge Street Day Hospital, undertook independent psychiatric ratings; Frances Proven and Dr. Raymond Monelle of Edinburgh University, gave statistical and musical advice, respectively; Sarah Caird, Julianne Cartwright and Rachel Verney, music therapists, undertook blind, independent music improvisation ratings.

Helpful advice was received from Drs. David Lee, Douglas Blackwood and Prof. Norman Kreitman in preparation of the paper.

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MUSIC THERAPY MAIN STUDY - 1988/1989 : DETAILS OF PARTICIPANTS

FAMILY MUSICAL BACKGROUND (Warm up question)

Does anyone in your family play music ? Grandparents / parents/ uncles/aunts/siblings/ etc...

.....
.....
.....
.....

YOUR OWN MUSICAL EXPERIENCE

PAST

1)

Did you want to play music, when you were little ? []

Did anyone help you or stop you ? []

2) WHEN YOU WERE AT SCHOOL:

Did you sing in the school choir ? []
Did you learn to play a musical instrument ? []
which ?.....

Did you take part in any other musical activities ? []

3) OUTWITH SCHOOL ACTIVITIES.

Did you play any music outside schooltime ? []
.....
.....

PRESENT

LISTENING TO MUSIC

4)

Do you ever listen to music without doing anything else (NB not background music) ? []

IF YES :

a) How often?..... []

5)

What kind of music do you listen to ?
(Tick where appropriate)

Pop.....	Jazz.....	Rock.....
Folk.....	Country & Western.....	Church Music.....
Classical.....	Opera.....	
Turn on the radio.....		
other		
.....		

[] [] [] [] [] [] [] [] [] [] []

6)

Do you listen when you are in a particular mood ? []
IF YES :

a) What mood do you tend to be in when you listen to music?
.....
.....

b)

Does listening affect your mood in any way ? []
IF SO : In what way ?

.....
.....

d)

Do you use music with the hope that it will have certain effect(s) on you ? []

.....

7)

Do you ever go to live music concerts ? []
IF YES :

a) how often do you go ?..... []
b) what sort of concerts do you go to ?
.....

8)

Does music ever come into your mind ? []

9)

After you hear a tune for the first or second time, can you remember it ? []

PLAYING AN INSTRUMENT

- 10) Since leaving school :
Have you played a musical instrument ? []
(IF NO : PROCEED TO 'SINGING' IF YES : CONTINUE)
- a)
What instrument have you played ?
(TICK AS APPROPRIATE)
the fiddle..... mouth organ..... the piano.....
guitar..... the pipes..... the drums..... []
other.....
- 11) Have you played regularly or
intermittently ? []
- 12) Did/do you play for fun on your own
or with amateur group/ orchestra / band
or professionally ?
- 13) For how long have you played ?
..... []
- 14) Have you had any lessons ? []
IF YES
a) For how long ? []
.....
- 15) How often did/do you play
..... []
- 16) Do you ever improvise ? []

SINGING

- 17) Do you ever sing when you're alone, say in the bath ? []
- 18) Since leaving school :
Have you done any singing ? []
(IF NO : END OF QUESTIONNAIRE; IF YES : CONTINUE)
- a)
(Prompt and TICK AS APPROPRIATE)
- alone with guitar/records/with baby []
- with others []
Church choir ... Folk singing Country & Western
Pop / Rock Men's Club Amateur Opera
other.....
- 19) For how long have you sung ? []
.....
- 20) Do/Did you have any lessons ? []
IF YES :
a) For how long ? []
- 21) Do you ever make up your own songs ? []

END OF QUESTIONNAIRE

INFORMATION ABOUT MUSIC PROJECT AT CAMBRIDGE STREET DAY HOSPITAL

In Cambridge street Day Hospital we are setting up a music room so that music can become part of the activities for people attending the centre. In order to get this started we are planning to examine how different people respond to music and what aspects of the session they enjoy the most.

I am asking you to co-operate in this project by taking part in one 30-minute session with me. During this session we will play music together on various instruments such as bongo-drums, xylophones, marimba and piano. I will also ask you a few questions about the session.

To help us in this study we intend to video the whole session and record the music onto tape. Any records will be treated in a completely confidential manner.

The sessions are great fun and many people who have never played music before are surprised at how pleasurable they are. I do hope that you will be willing to participate in the session.

Didi Pavlicevic
May 1987.

MUSIC THERAPY PROJECT AT CAMBRIDGE STREET DAY HOSPITAL

I,....., give my consent to take part in a music improvisation session at Cambridge street Day Hospital. The purpose of this study has been explained to me and I understand that the session will be recorded onto video tape .

Signed

Date

Staff member

Designation

SCALE FOR THE ASSESSMENT OF NEGATIVE SYMPTOMS (SANS)

SHORT FORM

Name: _____ Card No.: 1 2 ID No.: 3 4 5 6 7 8 9 10
 Date: 11 / 12 / 13 / 14 / 15 / 16 Age: 17 18 Sex: 19 Diagnosis: 5 Medication: 21

0 = None; 1 = Questionable; 2 = Mild; 3 = Moderate; 4 = Marked; 5 = Severe

AFFECTIVE FLATTENING OR BLUNTING

- | | | | | | | | |
|---|---|---|---|---|---|---|------|
| 1. <u>Unchanging Facial Expression</u> | 0 | 1 | 2 | 3 | 4 | 5 | (27) |
| The patient's face appears wooden, changes less than expected as emotional content of discourse changes. | | | | | | | |
| 2. <u>Decreased Spontaneous Movements</u> | 0 | 1 | 2 | 3 | 4 | 5 | (28) |
| The patient shows few or no spontaneous movements, does not shift position, move extremities, etc. | | | | | | | |
| 3. <u>Paucity of Expressive Gestures</u> | 0 | 1 | 2 | 3 | 4 | 5 | (29) |
| The patient does not use hand gestures, body position, etc., as an aid to expressing his ideas. | | | | | | | |
| 4. <u>Poor Eye Contact</u> | 0 | 1 | 2 | 3 | 4 | 5 | (30) |
| The patient avoids eye contact or "stares through" interviewer even when speaking. | | | | | | | |
| 5. <u>Affective Nonresponsivity</u> | 0 | 1 | 2 | 3 | 4 | 5 | (31) |
| The patient fails to smile or laugh when prompted. | | | | | | | |
| 6. <u>Inappropriate Affect</u> | 0 | 1 | 2 | 3 | 4 | 5 | (32) |
| The patient's affect is inappropriate or incongruous, not simply flat or blunted. | | | | | | | |
| 7. <u>Lack of Vocal Inflections</u> | 0 | 1 | 2 | 3 | 4 | 5 | (33) |
| The patient fails to show normal vocal emphasis patterns, is often monotonic. | | | | | | | |
| 8. <u>Global Rating of Affective Flattening</u> | 0 | 1 | 2 | 3 | 4 | 5 | (34) |
| This rating should focus on overall severity of symptoms, especially unresponsiveness, eye contact, facial expression, and vocal inflections. | | | | | | | |

ALOGIA

- | | | | | | | | |
|---|---|---|---|---|---|---|------|
| 9. <u>Poverty of Speech</u> | 0 | 1 | 2 | 3 | 4 | 5 | (35) |
| The patient's replies to questions are restricted in <u>amount</u> , tend to be brief, concrete, and unelaborated. | | | | | | | |
| 10. <u>Poverty of Content of Speech</u> | 0 | 1 | 2 | 3 | 4 | 5 | (36) |
| The patient's replies are adequate in amount but tend to be vague, overconcrete, or overgeneralized, and convey little information. | | | | | | | |
| 11. <u>Blocking</u> | 0 | 1 | 2 | 3 | 4 | 5 | (37) |
| The patient indicates, either spontaneously or with prompting, that his train of thought was interrupted. | | | | | | | |
| 12. <u>Increased Latency of Response</u> | 0 | 1 | 2 | 3 | 4 | 5 | (38) |
| The patient takes a long time to reply to questions; prompting indicates the patient is aware of the question. | | | | | | | |
| 13. <u>Global Rating of Alogia</u> | 0 | 1 | 2 | 3 | 4 | 5 | (39) |
| The core features of alogia are poverty of speech and poverty of content. | | | | | | | |

AVOLITION - APATHY

14. Grooming and Hygiene 0 1 2 3 4 5 (40)
 The patient's clothes may be sloppy or soiled, and he may have greasy hair, body odor, etc.
15. Impersistence at Work or School 0 1 2 3 4 5 (41)
 The patient has difficulty seeking or maintaining employment, completing school work, keeping house, etc. If an inpatient, cannot persist at ward activities, such as OT, playing cards, etc.
16. Physical Anergia 0 1 2 3 4 5 (42)
 The patient tends to be physically inert. He may sit for hours and not initiate spontaneous activity.
17. Global Rating of Avolition-Apathy 0 1 2 3 4 5 (43)
 Strong weight may be given to one or two prominent symptoms if particularly striking.

ANHEDONIA - ASOCIALITY

18. Recreational Interests and Activities 0 1 2 3 4 5 (44)
 The patient may have few or no interests. Both the quality and quantity of interests should be taken into account.
19. Sexual Activity 0 1 2 3 4 5 (45)
 The patient may show a decrease in sexual interest and activity, or enjoyment when active.
20. Ability to Feel Intimacy and Closeness 0 1 2 3 4 5 (46)
 The patient may display an inability to form close or intimate relationships, especially with the opposite sex and family.
21. Relationships with Friends and Peers 0 1 2 3 4 5 (47)
 The patient may have few or no friends and may prefer to spend all his time isolated.
22. Global Rating of Anhedonia-Asociality 0 1 2 3 4 5 (48)
 This rating should reflect overall severity, taking into account the patient's age, family status, etc.

ATTENTION

23. Social Inattentiveness 0 1 2 3 4 5 (49)
 The patient appears uninvolved or unengaged. He may seem "spacey."
24. Inattentiveness During Mental Status Testing 0 1 2 3 4 5 (50)
 Tests of "serial 7s" (at least five subtractions) and spelling "world" backwards:
 Score 2 = 1 error, score 3 = 2 errors, score 4 = 3 errors
25. Global Rating of Attention 0 1 2 3 4 5 (51)
 This rating should assess the patient's overall concentration, clinically and on tests.

Sources: Interview: 73 Staff: 74 Family: 75 Friends: 76 Other: 77

Reliability: 1 2 3 4 5 78 Form No.: 79 80

BRIEF PSYCHIATRIC RATING SCALE

NAME

DATE

	0	1	2	3	4	5	6
1. Somatic concern—preoccupation with physical health, fear of physical illness hypochondriasis							
2. Anxiety - worry, fear, over-concern for present or future							
3. Emotional withdrawal - lack of spontaneous interaction, isolation, deficiency in relating to others							
4. Conceptual disorganisation - thought processes confused, disconnected, disorganised, disrupted							
5. Guilt feelings - self-blame, shame, remorse for past behaviour							
6. Tension - physical and motor manifestations or nervousness over-activation, tension							
7. Mannerisms and posturing - peculiar bizarre unnatural motor behaviour (not including tic)							
8. Grandiosity - exaggerated self-opinion, arrogance, conviction of unusual power or abilities							
9. Depressive mood - sorrow, sadness, despondency, pessimism							
10. Hostility - animosity, contempt, belligerence, disdain for others							
11. Suspiciousness - mistrust, belief others harbour malicious or discriminatory intent							
12. Hallucinatory behaviour - perceptions without normal external stimulus correspondence							
13. Motor retardation - slowed, weakened movements or speech, reduced body tone							
14. Unco-operativeness - resistance, guardedness, rejection of authority							
15. Unusual thought content - usual odd, strange, bizarre thought content							
16. Blunted affect - reduced emotional tone, reduction in normal intensity of feelings, flatness							
17. Elation - euphoria - increased sense of well-being, euphoria, hypomania, manic and ecstatic states							
18. Excitation - increased rate and amount of speech and movements, excitement, delirium							
19. Disorientation - confusion or lack of proper association for person, place or time							

HAMILTON DEPRESSION SCALE

Name

Date

1. DEPRESSED MOOD (sadness, hopelessness, helplessness, worthlessness)

- 0 Absent
- 1 these feeling states indicated only on questioning
- 2 these feeling states spontaneously reported verbally
- 3 communicates feeling states non-verbally, i.e. through facial expression, posture, voice, and tendency to weep
- 4 patient reports virtually only these feeling states in his spontaneous verbal and non-verbal communication

Score range

0-4

2. FEELINGS OF GUILT

- 0 Absent
- 1 Self reproach, feels he has let people down
- 2 Ideas of guilt or rumination over past errors or sinful deeds
- 3 Present illness is a punishment. Delusions of guilt
- 4 Hears accusatory or denunciatory voices and/or experiences threatening visual hallucinations

0-4

3. SUICIDE

- 0 Absent
- 1 Feels life is not worth living
- 2 Wishes he were dead or any thoughts of possible death to self
- 3 Suicide ideas or gesture
- 4 Attempts at suicide (any serious attempt rates 4)

0-4

4. INSOMNIA EARLY

- 0 No difficulty falling asleep
- 1 Complains of occasional difficulty falling asleep, i.e. more than half an hour
- 2 Complains of nightly difficulty falling asleep

0-2

5. INSOMNIA MIDDLE

- 0 No difficulty
- 1 Patient complains of being restless and disturbed during the night
- 2 Waking during the night - any getting out of bed rates 2 (except for purposes of voiding)

0-2

6. INSOMNIA LATE

- 0 No difficulty
- 1 Waking in early hours of the morning but goes back to sleep
- 2 Unable to fall asleep again if he gets out of bed

0-2

7. WORKS AND ACTIVITIES

- 0 No difficulty
- 1 Thoughts and feelings of incapacity, fatigue or weakness related to activities; work or hobbies
- 2 Loss of interest in activity; hobbies or work - either directly reported by patient, or indirect in listlessness, indecision and vacillation (feels he has to push self to work or activities)
- 3 Decrease in actual time spent in activities or decrease in productivity. In hospital, rate 3 if patient does not spend at least three hours a day in activities (hospital job or hobbies) exclusive of ward chores
- 4 Stopped working because of present illness. In hospital, rate 4 if patient engages in no activities except ward chores or if patient fails to perform ward chores unassisted

0-4

8. RETARDATION (slowness of thought and speech; impaired ability to concentrate; decreased motor activity)

- 0 Normal speech and thought
- 1 Slight retardation at interview
- 2 Obvious retardation at interview
- 3 Interview difficult
- 4 Complete stupor

0-4

9. AGITATION

- 0 None
- 1 Forgetfulness
- 2 'Playing with' hands, hair, etc.
- 3 Moving about, can't sit still
- 4 Hand wringing, nail-biting, hair-pulling, biting of lips

0-2

10. ANXIETY PSYCHIC

- 0 No difficulty
- 1 Subjective tension and irritability
- 2 Worrying about minor matters
- 3 Apprehensive attitude apparent in face or speech
- 4 Fears expressed without questioning

0-4

11. ANXIETY SOMATIC (psychological concomitants of anxiety, such as gastro-intestinal; dry mouth, wind, indigestion, diarrhoea, cramps, belching. Cardiovascular: palpitations, headaches. Respiratory: hyperventilation, sighing. Urinary frequency. Sweating.

0-4

- 0 Absent
- 1 Mild
- 2 moderate
- 3 Severe
- 4 Incapacitating

12. SOMATIC SYMPTOMS GASTROINTESTINAL

- 0 None
- 1 Loss of appetite but eating without staff encouragement. Heavy feelings in abdomen
- 2 Difficulty eating without staff urging. Requests or requires laxatives or medication for bowels or medication for GI symptoms.

0-2

13. SOMATIC SYMPTOMS GENERAL

- 0 None
- 1 Heaviness in limbs, back of head. Backaches, headache, muscle aches, loss of energy and fatigueability
- 2 Any clear-cut symptom rates 2

0-2

14. GENITAL SYMPTOMS (such as: loss of libido and menstrual disturbances)

- 0 Absent
- 1 Mild
- 2 Severe

0-2

15. HYPOCHONDRIASIS

- 0 Not present
- 1 Self-absorption (bodily)
- 2 Preoccupation with health
- 3 Frequent complaints, requests for help, etc.
- 4 Hypochondriacal delusions

0-4

16 LOSS OF WEIGHT (rate either A and B)

A When rating by history:

- 0 No weight loss
- 1 Probable weight loss associated with present illness
- 2 Definite (according to patient) weight loss
- 3 Not assessed

0-2

B On weekly ratings by ward psychiatrist, when actual weight changes are measured

- 0 Less than 0.5 kg weight loss in week
- 1 Greater than 0.5 kg weight loss in week
- 2 Greater than 1.0 kg weight loss in week
- 3 Not assessed

17. INSIGHT

- 0 Acknowledges being depressed and ill
- 1 Acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.
- 2 Denies being ill at all

0-2

MEDICAL DETAILS: MAIN STUDY '88/89

P.No. []
Record [2]

Age at onset of illness..... []

Date of First Admission to a Psychiatric Hospital
(if this differs from above)..... []

No. of Admissions since onset []

No. of years since onset of illness and this project []

Date and duration of subsequent admissions
..... []
.....
.....
.....

Psychiatric Diagnosis :
schizophrenic []
chronic / paranoid / other

MEDICATION CURRENT AND IN THE LAST 3 MONTHS

(1) Major Tranquilizer..... []
.....
.....

(2) Anti depressant (State whether tricyclic or M.A.O.I.)
..... []
.....

(3) Minor Tranquilizer..... []
.....
.....

(4) Lithium..... []
.....
.....

Depot Medecine in the last 6 months ? yes / no
If yes : please specify []
.....
.....

ECT in the last 6 months ? yes / no
If yes, please give details

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