

MUSIC AND THE EDUCATION OF THE EMOTIONS:

A STUDY OF MUSICAL COGNITION

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Ph.D. DEGREE

LEICESTER UNIVERSITY

OCTOBER 1971

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FOREWORD

This thesis represents an attempt to grapple with certain fundamental problems of musical 'meaning', the relationship of music to human emotions, and the role of music in affective education. The approach has to be inter-disciplinary, drawing on psychology, statistical techniques, musical knowledge and aesthetic philosophy. Consequently, the reader may have to cope, as did the writer, with many switches of focus which are really unavoidable in this situation. Generally speaking, the first chapter is more philosophical, the second more psychological in emphasis. The middle chapters are to some extent concerned with statistical and experimental information and the final chapter draws together some of the threads.

Tables, music examples and charts are not all relegated to an appendix but are usually included in the course of the text, for the reason that it seems easier to skip what appears to be uninteresting than to keep turning to the back of the book for information of this kind.

As usual there are many people to whom the writer must offer warm thanks, but in particular, the stimulation and good sense of Professor Bantock, the very practical help in the earlier stages of Professor Foss, the art work of Olive Gabriel of the London Institute of Education, and the guidance on computer and statistical techniques given by Dr. Brian Baughan must be acknowledged. There are also colleagues and students who, through the stimulation of discussion over several years, have played a part in the formulation and motivation of this work.

CHAPTER ONE

Q: "Tell me, in your opinion, what constitutes a 'graceful' melody?"

A: "Well, that's quite a difficult question, but I suppose I should say one that has elegant proportions, a pleasing shape, is soft in outline and not too loud or fast, those sort of things."

Q: "And how would you distinguish a 'graceful' melody from one that 'flows'?"

A: "It would have less of the 'graceful' qualities and more of those which contribute to movement, though the difference between the two terms is very slight."

Q: "Do you think that a 'graceful' melody could be interpreted as 'flowing' and vice versa by different listeners?"

A: "Certainly, quite easily."

Q: "Could this be so if the melody only contained 'graceful' qualities which everyone recognised as such?"

A: "Not if they were only 'graceful', no."

Q: "Doesn't this suggest that if the melody which you call 'graceful' and I call 'flowing' contains both qualities, we must both be right?"

A: "It seems so, but the distinction is very fine anyway."

Q: "What if a third party thought the melody was 'brutal'?"

A: "I think that is unlikely, but I suppose he is entitled to his opinion."

Q: "Could the melody be given as many constructions as there are people to construe them?"

A: "Theoretically, yes."

Q: "It seems that the melody can therefore contain all these qualities."

A: "Apparently."

Q: "How can this be so? Is it possible that one melody actually has all these interpretations, or had we better look elsewhere for an explanation?"

A: "I think we had better look elsewhere!"

Q: "Agreed. Now either the melody does contain all of these qualities or else it affects people in different ways such that each person sees another aspect of it. This means that it affects you in such a way that the emotional response produced is one to which you give the term 'graceful', just as it is someone else's response to feel 'brutal'. In other words, the melody has produced a response to which you give a name, and then wrongly attribute this name to the melody and not the emotion. In a sense it is correct to say that the melody is 'graceful', but only in so far as it produced a feeling of 'gracefulness' in you, and not as an objective unalterable characteristic of its own. This is obvious, since we agreed it could conceivably produce other responses, which for the individual concerned are correctly interpreted, for who is to say otherwise. The melody does not represent 'gracefulness'; it produces it, just as it produces feelings of 'brutality'. Music can therefore never be described in words, and we ought to abolish any such 'appreciative' descriptions."

This 'Socratic' dialogue was produced by a music graduate as

part of a discussion of music and its effects. It serves as a good introduction to the problem by showing how difficult it is to discuss this kind of thing. It leads us into a complex and difficult area and raises such issues as music's 'expressiveness', the role of emotion in the musical experience and the question of 'meaning' in music. The concern of this thesis is with the slippery and hazy area of aesthetic experience and the contribution of this experience to education, and this dialogue gives us a starting-place.

We might notice two important assertions. One is that music actually 'produces' an emotional response and the other is that music has meaning only in the manner of the response of each individual to it. This latter point would suggest that there are as many different pieces of music with the same title as there are people who listen; thousands of Eroica symphonies, for example. The implications here for those who compose, perform and teach music are far-reaching, for if music can produce so many different responses it can easily be regarded as some rather vague, non-specific stimulus. Musical activity on this view would be something like having a bath or taking a walk: no purpose is served by trying to focus attention on any 'meaning' of such activities. Each individual will allow his mind to engage with his surroundings or ignore them altogether, depending on how he feels at the time. We could never say of such situations that there is a 'cognitive content',¹ in the sense that such an activity is a mode of knowing. Nothing in particular is being offered to the understanding. Of course, useful ideas, even profound thoughts may be formulated

¹ The term is R.S. Peters' in Ethics and Education (Allen & Unwin, 1966) p. 159.

at such times of relaxation but if so we can only say that they are assisted by the activity and not that they are caused by it or result from it. In this way they differ from what Peters calls curriculum activities, such as science, history and literature, all of which would have a 'wide-ranging cognitive content'. Music that is similarly defined to bathing or walking as an activity without cognitive content would certainly be in a strange position educationally. As it happens, we are not obliged to accept the idea that music must necessarily mean different things to different people. The empirical work in the body of the thesis will indicate an alternative.

What we have been considering is very close to the notion of music simply as a pleasurable experience. We are reminded of the famous remark by Dr. Burney (1726-1814) the music historian, that music is an 'Innocent Luxury, unnecessary indeed to our Existence, but a great Improvement and Gratification to our sense of Hearing'. Pleasure is often involved in the musical experience of course, but it is certainly not often aroused in the simple, straightforward way of the hot bath or physical exercise. Susanne Langer is very clear on this point.¹

"But now, since everybody can read, visit museums, and hear great music over the radio, the judgement of the masses on these things has become a reality, and has made it quite obvious that great art is not a direct sensuous pleasure. If it were, it would appeal - like cake or cocktails - to the untutored as well as to the cultured taste. This fact, together with the intrinsic 'unpleasantness' of much

¹

Langer, S., Philosophy in a New Key (New York, Mentor Books, 1951), p. 175.

contemporary art, would naturally weaken any theory that treated art as pure pleasure."

Related to but different from the idea of 'pleasure' is the argument that art in general, and in this case music in particular, is a form of 'play'.

"This is more like it. When it really comes down to it, music is purely and simply a game people play - or watch other people playing. Nobody is going to deny that the pursuit of this particular sport can bring satisfaction, even spiritual experiences. All the same, it is still basically a game."¹

This view of music is very old and can certainly be traced back as far as the Romans, who considered music to be a kind of arena sport, a chance for display and competition. Schiller defines beauty as 'the object of the play impulse' ² and Spencer agrees.³ 'The activities we call play are united with the aesthetic activities.' And as the arts 'occupy the leisure part of life, so should they occupy the leisure part of education'.⁴

In his more detailed account of 'play' in human affairs, Huizinga argues from his observation of different systems of musical 'rules' in various cultures that music is a game and serves no useful purpose: it is a separate little world of activity. ⁵ This view is partly responsible for a distinction that has been proposed between music and other activities such as science and

¹ Geoffrey Brace, Music and the Secondary School Timetable.
(Exeter University, 1970)

² Cited by E.F. Carritt in Philosophies of Beauty (Clarendon Press)

³ Carritt, op. cit.

⁴ Herbert Spencer, Education. (Williams & Norgate, 1911)

⁵ Huizinga, J., Homo Ludens (Routledge, 1949) p. 188.

philosophy. Peters maintains that the latter activities can never be 'hived off' from a broader perspective on life and that they change the way in which we look at the world; they transform our understanding of it.¹ Although he would concede that some games may have considerable 'cognitive content', (chess etc.) he would say that this is internal to them: they have their own rules and values but do not change a man's view of the world. They may to some extent shape his attitude to other activities, politics, for example, may become a kind of game for some people, but games 'will not transform his understanding' of other things. Games and pastimes are thus 'less serious' than science, history, and so on. Leaving aside any doubts we might have about this, we notice that Peters finds a 'special' difficulty over aesthetic activities and he tentatively puts forward the suggestion that the various arts differ 'in respect of their concern for the truth'. Music is thus seen as more like games than it is like poetry.

"It might reasonably be argued that literature and poetry, for instance, are developments of a dimension of awareness of the world, while the other arts, like music, may be creating, as it were, another world to be aware of. The latter would, therefore, be more like games than science or history."

We might notice that 'literature and poetry, for instance,' function through words, whereas the other arts, including music, operate in other ways. This is a matter of some importance which will be taken up later, but for the moment we must confine attention to the notion of music as 'play'.

¹

R.S. Peters, op. cit. p. 160 ff.

If music can be described as a game of some sort then this is clearly a step away from the notion of music as sensuous pleasure. A game has rules and often a well-developed cognitive framework which must be understood by the player and spectator, unlike the hot bath, which makes no demands of this kind and consequently generates no tensions. A try or a goal is a highly significant event with a great deal of meaning, unlike the 'graceful' or 'brutal' melody which seems to mean anything or nothing at all. To see music as a game is to move away from the vague to the exact: it is to presuppose a generally understood set of rules and conventions, styles of play, tactics and so on. Furthermore, certain games may be more exciting or better played than others and we may assume that certain pieces of music and performances may be similarly evaluated. This is certainly much firmer ground than the hedonistic notion of music as pleasure or the idea that music produces different feelings in different listeners.

Although it is possible to see that in some respects music may resemble games, it is dangerous to assume that 'music is purely and simply' a game. We might draw out at least one fundamental distinction between them. Games involve a strong element of chance. In any game there is always doubt about the outcome or the development of the game. A predictable game would be very dull indeed. Luck, mistakes and open-ended encounters between players are all part of the games ethos. Even the 'solitaire' card-player is having a tussle with chance or 'fate'. When it comes to the more complex games it seems to Huizinga that the chance element and the true games spirit is lost.

"Really to play, a man must play like a child. Can we assert that this is so in the case of such an ingenious game as bridge?"

And in the case of chess the 'merry play-mood' has little scope when chance is at a minimum.¹ If this is so with certain games what are we to think of an art where chance is so often eliminated altogether. Chance encounters in music are usually carefully avoided by rehearsal, mistakes are not part of a good performance though they may be acceptable in a good game. Most pieces of music are thought out: most games are played out. We might notice too that music steers us away from 'reality' by presenting a kind of illusion of events. The very stuff of music, tones, rhythms, melodies, is in a sense unreal whereas games are so often to do with the realities of human encounter or images of human encounter like pawns or playing-cards. This is not to say that a game can never be like an aesthetic experience, but merely to point out that most games are unlike most music.

One further obstacle stands in the way of the 'play' theory. The serious purpose of a great deal of childrens' play, when it aids development and assimilation of experience is sometimes overlooked in favour of the 'fun' emphasis. Brace tends to do this when he links play with religion and ritual and says that they were once joyful things.² But Langer has something to say on this.³

"From this standpoint it is hard to understand why savage rites so often involve terrible tortures - branding, flaying, knocking out teeth, cutting off finger-joints, etc. Puberty-rites, for instance, in which boys sometimes die under the

¹ Huizinga, op. cit. pp. 198 and 199.

² Brace, op. cit. p. 9.

³ Langer, op. cit. p. 138.

knife or the whip, can hardly be described as 'enjoyment of life without the latter's liabilities'. Such actions are far removed from play."

Couple this with the fact that many artists and musicians have been driven on to produce work under difficult circumstances rather than to take easier courses of action and it is hard to apply Spencer's dictum that the arts occupy the 'leisure part of life'. Perhaps we should make a distinction between play - a very important and serious activity, and games - a pastime and relaxation? At any rate we are driven ultimately to a distinction between games and art.

Turning now to the second main issue raised by the opening dialogue, we are confronted with the problem of 'emotion' in art and its 'expression'. Both are difficult terms and require some clarification and it would be helpful to deal with 'expression' first. In the dialogue, the view was put that a melody produces an emotional response in the various listeners. In the sense that it arouses certain feelings in the listener we might say that it enables him to express those feelings.¹ The position under fire in the dialogue was that music expresses some concept, for example 'gracefulness', that was presumably intended by the composer to be understood by us. In this case, express means to communicate something. The composer in this latter case is often said to be expressing his 'emotions', getting them into the music in some way so that other people can have experience of them. He might, however, be expressing other things, such as his political ideals or religious beliefs. Plato, for example, when he found the Lydian mode

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This might be so, for instance, if a particular emotion were to be clearly brought out by the music.

'lascivious' and our major scale, the Ionian mode, weak in character, was looking upon music as being able to express moral states. Usually though, in such discussions as this, the word 'emotion' is coupled with 'expression'.

A modification of the 'expression of emotion' conception is that music expresses an abstract or memory of emotional experience. Music, on this view, expresses 'joy, sorrow, pain, horror, delight, merriment, peace of mind themselves to a certain extent in the abstract, their essential nature, without accessories, and therefore without their motives.'¹ 'In musical tones the whole scale of our feelings and passions not yet defined in their object, can echo and reverberate.'² 'The reactions music evokes are not feelings, but they are the images, memories of feelings.'³ Here, Hindemith seems to be more aware of the evocation of emotion in the listener in some way rather than the communication of emotion by the composer. We notice however, that he is concerned to remove 'emotion' as such from the situation. Only the 'shadows, dreams, reproductions of actual feelings' are present.

The most extreme recent statement about emotion and music has been made by Deryck Cooke⁴ who takes up a point by Hindemith that emotions in life cannot follow one another at the speed they would appear in music. Cooke replies that the 'idea that diverse

¹ Schopenhauer, The World As Will and Idea. (See Carritt, op. cit.)

² Hegel, Aesthetics. (Carritt, p. 174)

³ Hindemith, P. The Composer's World. (Harvard, 1952) p. 38 ff.

⁴ Cooke, D. The Language of Music. (O.U.P., 1959) p. 20.

emotions cannot succeed one another swiftly is applicable only to placid temperaments'. (Presumably such temperaments are unable to enjoy music?) Cooke is aware that this will not do, for he postulates two levels of emotion, one changeable, the other more permanent and so wriggles out of the problem.

"When we state that a composer, writing a lengthy piece of music over a long period, expresses his emotions in it, we really ought not to have to explain that we mean his deep, permanent, significant emotions, not the superficial fleeting ones called forth by trivial pleasures and disappointments."

As far as Cooke is concerned, not only are emotions expressed by the composer in his music but they are also felt by the listener in the manner that they were first experienced by the musician. The listener's 'capacity for grief' is aroused by the Funeral March in the Eroica symphony. He feels 'as Beethoven felt'. 'Music conveys the naked feeling direct.'¹ Cooke is clearly trying to find a role for emotion in music in the face of provocation by Stravinsky.

'I consider that music is, by its very nature, powerless to express anything at all, whether a feeling, an attitude of mind, a psychological mood, a phenomenon of nature etc.'² In trying to locate both emotion and its expression in music, Cooke has put himself in a rather difficult position. Deeply moved by an emotion we may be but is it the actual specific emotion of grief or whatever? Are we really numbed and stunned by sorrow in the Eroica? How do we know what a composer felt during the long period of time he may have spent working on a movement? And above all, why should we

¹ Cooke, op. cit. p. 16 ff.

² Cited by Cooke.

choose to listen to music that actually makes us feel 'grief', an affective state we would avoid whenever possible?

Of some importance here is the notion of 'empathy'. Empathy defined in terms of 'feeling oneself into and losing one's identity in a work of art'¹ might offer some support to the sort of views held by Cooke. What we would enjoy about music, sad or otherwise, would be our own physiological activities,

"The sprightliness of music is not in the sounds but in the bright and lively muscle-flutters in the body of the listener. Nor is the melancholy mood of music in the tonal structure but in the drooping structure of the listener."²

It is possible to see how we might enjoy such an activity. We could have the symptoms of emotion without the reality of an unpleasant or demanding situation. We should be able to experience joy or grief at one remove from life-experience, vicariously. Pratt, however, objects to the 'Einfühlung' concept on the grounds that the onus is all on the listener. The greatness of the work seems to depend entirely on the capacity of the listener to respond with empathy. There could be ^{no} consensus of opinion as to the value and nature of a particular work if the theory is held in its simplest form. Pieces of music do seem to have particular qualities apart from our reaction to them. Pratt, for instance, carried out a very simple experiment to show this. Subjects were asked to match four adjectives with four pieces and were able to do this, says Pratt, by describing not their own feelings but the music itself in a more objective manner. 'Empathy' seems to leave out this sort of judgement,

¹ James Drever, A Dictionary of Psychology. (Penguin, 1952)

² Carroll C. Pratt, Music as the Language of the Emotions.

(Library of Congress, 1952) p. 11 ff.

in its account of the aesthetic experience but it does have importance and we must return to it later on in a different way.

Perhaps the strongest case against seeing music as a way of 'expressing emotion' is the one summed up by Pratt when he says that emotions have their locus 'within the body structure. They cannot exist in some medium outside the individual.'¹ and therefore cannot exist in music. A century ago, Hanslick produced his formidable treatise in which he firmly and convincingly denies that music either excites emotions or acts as a vehicle for their communication. Emotions are neither the subject nor the direct effect of music. What we do find in music, according to him, are the 'dynamic properties'.² We do not get the whispering of love or the clamour of war but we do get whispering and clamour in music. Hanslick too would direct our attention to music as an object, a beautiful object offered to our imagination, something for contemplation.

"The course hitherto pursued in musical aesthetics has nearly always been hampered by the false assumption that the object was not so much to inquire into what is beautiful in music as to describe the feelings which music awakens."³

Aesthetic investigations must consider the 'beautiful object and not the perceiving subject'. However, we ought to notice that Hanslick never precluded emotional involvement from the musical experience. His description of the excitement that results from following the composer's thought, of having musical expectations fulfilled or not, shows that he found music to be an intense affective experience. All he says is, in effect, that music does not 'express' emotion.

¹ Pratt, op. cit. p. 6.

² Hanslick, E., The Beautiful in Music. (Liberal Arts Press, N.Y., 1957)

³ Hanslick, op. cit. p. 7.

If we deny that music expresses emotion and take the Hanslick point of view we are still left with two awkward questions. What does music express, if it expresses anything at all? What do we mean by a 'beautiful' object? 'Beauty' is both a difficult and unfashionable word. It is out of place in considering much contemporary art. Long ago, Vaughan Williams said of his dissonant Fourth Symphony, 'I don't know if I like it but it's what I meant'. The implication here seems to be that something of no particular beauty is being expressed in the work, something in this case rather harsh. We might notice also the word 'meant', as though there is some kind of message, a meaning in the music. It is at this level of discussion that the word 'express' tends to give way to notions of 'significance'.

To say with Clive Bell and Roger Fry that art works exhibit 'significant form' is really another way of saying with Reid that 'the true aesthetic form - - - is expressive form'.¹ The change from 'express' to 'signify' still leaves the problem of what kind of thing is being signified. Can music signify anything; can it make statements about other things? Beardsley thinks not.² Music, he says, can say nothing about anything outside of itself. He points out that we ought to be able to discriminate between 'indexes' and 'characterizers', that is to say, subject matter from interpretation, if we are to claim that music is saying anything at all. This, he believes, has never been adequately done. He would agree, however, that there is an air of purposiveness about the arts, as though they were being addressed to a listener or observer. Years ago, Edmond Gurney came to the

¹ Reid, L.A., A Study in Aesthetics. (Macmillan, 1931) pp. 43 & 197.

² Beardsley, M.G., Problems in the Philosophy of Criticism. (N.Y., 1958) p. 376 - 378.

conclusion that great music always seems to express more than the lesser works. It appears to have, he said, import or significance. He could not say what is expressed or signified but only that there is a strong feeling of 'utterance' about music.¹ It seems to speak to us in some way. And so we are back with the problems of the opening dialogue. A melody may appear to have a certain character, yet we can find little agreement about the kind of thing that is being presented in it. We have a product, the work of a composer, that seems to be saying something, yet on examination, we cannot locate any meaning in it beyond the sloppiest sense of the word.

One of the most convincing attempts to come to grips with this has been made by Langer, who has carefully argued that music is a 'creation of forms symbolic of human feeling'.² Many criticisms have been made of this position but often they fail to take account of the use of the singular in the word 'feeling'. Harold Osborne has considered the theory³ and makes the point that 'to be the cause of something is not the same thing as "to be a symbol of that thing"'. No one doubts this, but Mrs. Langer has never said that feelings are caused but that feeling is symbolised. It is possible then to see what the referent might be for a symbolic presentation via an art work. 'Music has import, and this import is the pattern of sentience - - - the pattern of life itself, as it is felt and directly known.'⁴ Art expresses, in other words, not so much

¹ Gurney, E., The Power of Sound. (London, 1880) p. 312.

² Langer, S., Feeling and Form. (Routledge, 1953)

³ Osborne, H., Aesthetics and Criticism. (Routledge, 1955) p. 108.

⁴ op. cit. p. 32.

a series of emotional states but 'the very dynamic process of our inner life'.¹ The subject or referent of art is 'certain fundamental structural elements of our sense experience'.²

The now famous passage from FEELING and Form is always worth giving in full.

"The tonal structures we call music bear a close logical similarity to the forms of human feeling - - - forms of growth and attenuation, flowing and stowing, conflict and resolution, speed and arrest, excitement and calm, or subtle activation and dreamy lapses - not joy or sorrow perhaps, but the poignancy of either and both - - - the greatness and brevity and eternal passing of everything vitally felt. Such is the pattern, or logical form, of sentience; the pattern of music is that same form worked out in pure measured sound and silence. Music is a tonal analogue of emotive life."

From a more scientific point of view, McLaughlin makes a similar statement when he says that 'music can be analysed into patterns of tension and resolution'.

"These patterns have no meaning for us in themselves, but can be perceived to be analogous to patterns of tension and resolution which arise from bodily and mental activities."³

General and somewhat metaphysical as these statements may appear, they do provide some kind of foothold for music as a form of communication. One major difficulty in the way of ascribing import to the arts is essentially bound up with a refusal to consider seriously the possible existence of presentational forms, capable of carrying and

¹ Cassirer, E. An Essay on Man. (Yale, 1944) p. 149.

² op. cit. p. 157.

³ McLaughlin, T., Music and Communication. (Faber, 1970) p. 100.

communicating ideas in a logical form without recourse to discursive language. Peter's division of the arts into what amount to verbal and non-verbal categories is a case in point. It is, of course, very difficult to see how the function of music would correlate to speech. Attempts, like those of Cooke, to furnish us with a kind of dictionary of musical meanings often seem suspect and a little crude. But notwithstanding, every type of symbolic presentation is a kind of logical formulation and offers something to the understanding.¹ Many artists and musicians would be among the first to say that what they do cannot be put into words, but this is not necessarily because their productions and activities have no 'meaning', but because verbal discourse, which is linear in progression from point A through B and C to D, is unable to contain and signify the richness of change and growth presented in the arts. If music is indeed a kind of tonal analogue of emotive life, then something of the complexity of this inner life will attend it. Logical discourse is unable to do more than itemise the elements of such a situation. It cannot present them to the understanding and by the same token it cannot come to grips with and examine the effectiveness of art works. Only those with experience of the particular medium can have the remotest conception of what is involved in it. Clearly though, some indication that music has meaning would help a great deal to sharpen up discussion of these problems. The empirical work in the body of this thesis demonstrates that at a certain level meaning is certainly available in music and can be fairly precisely quantified.

¹ Langer's chapters in Philosophy in a New Key on discursive and presentational forms, and the logic of signs and symbols are of high relevance here.

We now must turn to the second point of departure indicated in the dialogue at the start. The concept of 'emotion' and the role of emotion in the aesthetic situation needs a certain amount of clarification. Whether the arts 'express' emotion or not, the word does keep on turning up, like a bad penny, in discourse on the arts, often without a very clear idea as to its meaning. At the physiological level there appears to be little confusion however.

"An emotion may be defined as a strongly visceralized, affective disturbance, originating within the psychological situation, and revealing itself in bodily changes, in behaviour, and in conscious experience."¹

"Emotions are characterized by patterns of visceral change that are controlled by the autonomic system."²

When we take into account the various chemical and glandular changes in the body we can really begin to appreciate the difficulties of the 'expression of the emotions' theory of music. The viscera cannot possibly respond either directly to the sounds or in empathy with them in the case of such a long and involved piece as, say, a Beethoven symphony. The range of emotional states would surely be too great to be fully stirred up in the listener. Also he would be exhausted after the performance and this is not usually the case. People often talk of being stimulated and refreshed by music not of being drained by a powerful and perhaps harrowing emotional situation. Magda Kalber points out that emotional states and general conditions like tiredness can be a hindrance to attentive

¹ Young, P.T., Motivation and Emotion. (N.Y., 1961) p. 597.

² Young, p. 399.

listening to music.¹ Emotions can sometimes get in the way of what we want to be doing. They involve us in what Peters calls 'passivity', they happen to us.²

McDougall stressed that emotions do not really exist as such but are a mode of experience.³ He also emphasised conation - an experience of striving, or willing as a central part of our experience of emotions. An impulse to action is present in all emotional experience, there is always a situational element, a motive, and an object of emotion. So on this view, an emotion is not only something that happens to us, as it were, but is something that involves us in action.

The problem of how we become conscious of emotions was partly tackled by the famous James-Lange theory.⁴ Briefly, it states that a particular emotion is not the cause but the effect of the total bodily response to the situation we are in. This 'peripheral' concept suggests that an emotion is experienced and identified by the various signals collected in from all areas of the body. Unfortunately for this rather neat idea, a number of experimenters, including Sherrington and Cannon, have noted in animals and humans no loss of emotional response to situations even when severe injury had occurred that deprived the organism of all sensations from the trunk and limbs. Emotional experience seems to arise in the brain 'without the help of sensations from the body and limbs'.⁵ If we were to attempt to explain the emotional operation of music in terms of a mass of sensations taken chiefly by the ear we should run

¹ Kelber, M., The Introspective Listener. (London, 1951) p. 15.

² Peters, R.S., The Logola Symposium on Feelings and Emotions. (1968)

³ McDougall, W., An Outline of Psychology. (Methuen, 1969) (1st ed. 1923.)

⁴ James, W., Principles of Psychology. (N.Y., Holt, 1890)

⁵ Woodworth, R.S. and Marquis, D.G., Psychology. (London, rev. 1949)

into similar difficulties. For instance, what are we to make of a piece of music played on a spinet? There is no great range of sensational qualities there, yet many people are emotionally effected in some way by Bach's Goldberg Variations and similar works of that period. And as McDougall pointed out, sensational qualities themselves can be excited by mental imagery without any help from the senses.¹ We may note the example of a musician who derives great satisfaction from 'reading' a musical score. So it would seem that emotion has a great deal to do with the brain and its activities.

The whole issue is complicated by the so-called rational powers in man. Is reason like Plato's chariot rider, struggling to control the black horses of emotion?

"Something like this may be true: When the cortex dominates, behaviour is relatively calm, practical, and goal-directed; but when the interbrain dominates, behaviour is disturbed, diffuse, and emotional. When the individual 'loses his head', the interbrain takes control; but as long as he keeps his head, the cortex is master."²

Similarly, Arthur Koestler observes that the visceral brain, the older, lower brain, seems to be a physical counterpart to the 'id', which is not so much 'unconscious' as non-communicative. It is 'illiterate'.³

So it appears that emotions are located in the brain rather than elsewhere and that the older brain may be in some sense adrift, with

¹ op. cit. p. 327.

² Woodworth, op. cit., p. 364.

³ Koestler, A., The Ghost in the Machine. (Hutchingson, 1967) p. 322.

a kind of life of its own. Koesler compares the neocortex and limbic brain system and concludes that 'instead of functioning as integral parts in a hierarchic order, they lead a kind of agonised coexistence'. This theory does account for the fact that we experience emotions as 'impact', in the sense that they happen to us.¹ If part of our nervous system is, so to speak, out of control, and the newer, distinctively human brain is aware of this then reason and emotion would seem to pull against each other. One part of ourselves observes and tries to control the other. Thus a psychological division may be seen to have a physiological basis.

The relationship between reason and emotion has exercised educationalists a good deal, since a clearer understanding of the situation would help in curriculum planning and so on. Bantock postulates two ways in which this relationship may be seen.² The first is the one mentioned above, that emotion is a sort of independent force needing either to be kept in check or to be given suitable opportunities for discharge, as in games etc. Moments of catharsis would presumably alternate with longer periods of regulation by reason. The second view of the emotion-intellect relationship is that the life of feeling is the true life of man; reason being a pedestrian thing. In this case we would look for 'refinement' and development of the emotional life rather than repression alternating with violent discharge. The arts, myths, ritual and religion might be seen as contributing to this development and structuring of the emotional aspects of life.

¹ Langer says that we experience feeling as 'impact' and 'action'. See Mind: An Essay on Human Feeling. (John Hopkins, 1970) p. 23.

² Bantock, G.H., Education, Culture and the Emotions. (Faber, 1967) p. 65 - 86.

Now it seems very clear that reason and emotion are by no means segregated from each other in every way. Bantock says that, once the symbolic level of human development is reached, (i.e., any development beyond a grunt or squeal) cognition is bound to be involved. Peters sees that emotions involve 'appraisals' of the situation. The division between these two writers seems to be in the approach to the 'education of the emotions'.

For Peters, education should assist us to develop 'appropriate appraisals'.¹ It is clearly important to have the right beliefs about the situations in which we find ourselves. For example, it would be inappropriate for a husband to be jealous if these feelings were founded on a misunderstanding of his wife's actions. On this view, drama, novels and literature in general may be ways of having our 'capacity for making appraisals' extended.

What seems obvious about this particular account of the education of the emotions is that no such education is taking place. No modification of any emotional state occurs, we merely prevent ourselves from having the wrong emotional reaction to a given situation. This is doubtless very necessary in a person's education in terms of development of powers of judgement, discrimination and observation, but it does nothing for the emotion when it is appropriate. For example: it was once considered appropriate to fear, hate and, consequently, to torture witches. Since we no longer believe in witches we no longer have such powerful emotional responses to them. But we do believe in, say, Jews and communists, and this century has seen plenty of hatred, fear and torture of these people. Our appraisals

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Peters, op. cit. p. 188.

have moved on, been educated perhaps, but our emotional responses seem more or less the same. Now it is possible to argue that we might eventually develop a set of appraisals which made no group of people, ethnic or political, the objects of such emotions. Even so, we shall learn nothing about our emotions, we shall develop no 'cognitive perspective' of the life of feeling but merely have removed the situations which trigger off the feelings. As for the role of the non-verbal arts in education of the emotions, Peters seems to relegate these to the job of 'discharge of passivity', which is an important function 'of symbolic forms'.¹ However, he does suggest that ability to recognise emotions in oneself is important and states that just how 'this imaginative ability is developed is of crucial importance in the education of the emotions'.²

Bantock, on the other hand, suggests how reason may be more closely integrated with emotion. 'Human development proceeds, in part at least, out of an ability to make finer and finer distinctions'.³ An emotion becomes more 'precise' when it is defined in a symbol structure. Affect is also 'communicable', and thus it is possible to teach ways of feeling. Mothers, for example, teach their children ways of responding to being hurt, disappointed, or rewarded etc., and it may be just as possible to structure a learning situation in terms of feeling as it is in maths. So, on this view, refinement and communication of affect are educational objectives rather than catharsis and correct appraisal. Both writers would agree that we are at present dealing with the whole question of educating the emotions in a piecemeal and haphazard way.

¹ op. cit. p. 201.

² op. cit. (Logos Symposium) p. 198

³ op. cit. p. 81

(It should perhaps be made clear at this point that the terms 'emotion' and 'feeling' are being used interchangeably as they tend to be in aesthetic debate. Langer has a somewhat different approach which is developed in Mind. For her the term 'feeling' includes 'human conception, responsible action, rationality, knowledge'.¹ Feeling is really, she would argue, the whole of consciousness in its broadest sense; it is a phase of a physiological process rather than a by-product of it. This is no place to go further into this matter but we may perhaps assume that 'feeling' includes the more striking states we call 'emotion' as well as other less clearly marked affective states such as boredom, tiredness, liveliness and so on. Emotion is a particularly intense state of feeling.)

So far, we have been mainly concerned with 'expression', along with allied concepts of significance and meaning, and 'emotion'. We ought now to look briefly at some of the less general theories of art and music in the light of the previous discussion. Musicians and writers on music have from time to time formulated aesthetic theories and it is helpful to notice some of them.

Many approaches have been given over to classifying different types of response to music which tend to fragment the problem even beyond the reason-emotion dichotomy. Dwyer says that a fourfold pleasure results from musical experience; sensual, kinaesthetic, intellectual and aesthetic.² Kelber indicates that response to music may be more or less rational, emotional, sensational

¹ Langer, Mind, p. 23.

² Dwyer, T., Teaching Musical Appreciation. (O.U.P., 1967) p. 124.

and aesthetic.¹ Alvin lists four similar major responses; physical, sensual, intellectual and emotional.² The last she considers to be very important. Frank Howes accepts four types of listener; sensuous, associational, referential and musical.³ The last of these involves for Howes a special emotion, an emotion sui generis. Many psychologists have made similar distinctions between types of listener.⁴ To make a list of different sorts of response and leave it at that is not really very helpful though. It takes us back to the position at the start of the chapter. If music is as any individual or group happens to take it, and no more than that, then to structure music education or to see how it could have value becomes impossible. It becomes a content-less and therefore an aimless activity. The concept of significance in music or communication, which we have seen to be of some importance, tends to be discredited if we attend to what is different in musical response rather than what similarities there are between listeners.

The emotion sui generis that Howes mentions is of some interest here. The idea that music somehow generates a particular emotion, what has been called the 'emotion of the beautiful', is quite old. Instead of music expressing different feeling states it arouses one powerful type of response, sometimes called the 'aesthetic emotion'.⁵ This could possibly be an area of common

¹ op. cit. p. 27.

² Alvin, J., Music for the Handicapped Child. (O.U.P., 1965) p. 13.

³ Howes, F., Man, Mind and Music. (London, 1948) p. 157 ff.

⁴ cf. Chapter Two

⁵ Clive Bell used the term a good deal.

experience in an aesthetic situation. There is for many people 'a deep, satisfying enjoyableness' in listening to music or looking at paintings and so on.¹

"It underlies the dramatic intensity perceived in Beethoven's Egmont as well as the frivolous gaiety of Richard Strauss's Till Eulenspiegel. It has been a prime concern of aestheticians to give a systematic account of this component of musical experience. But it has proven to be a most difficult task."

Laszlo believes that a solution can be offered in the light of the work of Meyer² and Collingwood.³ Meyer has put forward what Beardsley calls a 'relativistic theory' of music. He accepts the principle given by MacCurdy that^{it is} "when instinctive reactions are stimulated that do not gain expression either in conduct, emotional expression, or fantasy, that affect is most intense".⁴

In Meyer's terms: 'Emotion or affect is aroused when a tendency to respond is arrested or inhibited'.⁵ When some kind of action or drive is impeded, we become aware of an emotion. Meyer's interesting work shows how in the various musical cultures expectancies are produced which are either fulfilled, delayed, or inhibited. Incomplete figures set up a desire for completion, to pass over without sounding a note in an accepted scale series creates a desire to hear that note, and so on. Meyer develops a theory of music

¹ Laszlo, E., Affect and Expression in Music. (Journal of Aesthetics and Art Criticism, Winter, 1968.)

² Meyer, L.B., Emotion and Meaning in Music. (Chicago, 1956)

³ Collingwood, R.G., The Principles of Art. (Oxford, 1938)

⁴ MacCurdy, J.T., The Psychology of Emotion. (N.Y., 1925) p. 475.

⁵ Meyer, op. cit. p. 14.

that places importance on learned norms and deviations. A style is established by the composer(s) and learned by the listeners who begin to expect certain things to happen. These expectations are inhibited to some extent by deviations and surprises. In course of time certain deviants may become norms and the style is said to have changed. Western harmony gives clear examples of this, the chord of the dominant seventh, for instance, is heard as a somewhat violent discord in the sixteenth century and as a comparatively stable chord by the time of Beethoven. The 'relativist' position has been clearly put by Hans Keller.

"The background of a composition is both the sum total of the expectations a composer raises in the course of a piece without fulfilling them, and the sum total of those unborn fulfilments." The foreground is, simply, what he does instead - what is actually in the score."¹

There must be an understood, learned background in the light of which musical events take place. Meyer would not go so far as to say that everything is relative and culturally based, for example, the intervals of octave, fourth and fifth seem common to all musical cultures, but learning is an essential factor in response to music. A similar conclusion is reached by Gombrich in terms of the visual arts. There is not at any time in visual perception an 'innocent eye'.² What we know influences what we see. (Incidentally, we might notice the work of Zipf, who discovered a fixed relationship in various passages of prose between the frequency of word use and the number of different words used. The number of ^{different} words in the sample equals the number of times the most used word occurs.³ This seems to be a demonstration of a

¹ Keller, H., Towards a Theory of Music. (The Listener, 11th June, 1970)

² Gombrich, E.H., Art and Illusion. (Phaidon Press, 1960)

³ Cited in Symbols, Signals and Noise. Pierce, J.R. (Hutchingson, 1962)
p. 238-9.

background-foreground type of operation in language.)

The idea of the arousal of affect by inhibition of tendencies is helpful to the extent that it shows how music may be able to stimulate the listener into an affective state. It runs into difficulties in explaining how the emotional arousal may be so pleasurable. Laszlo believes that Meyer was mistaken to assume that the music itself arouses affective states without reference to a wider context. Man is 'affect laden' anyway and he brings to the music a charge of feeling that has been accumulated by everyday living.

"Through the myriad shifting and coalescing connotations of musical sounds in their manifold musical organisations music acquires a capacity to formulate lucidly and thus express the elements of the intrinsic but inchoate realm of accumulated affect for each musically inclined individual."¹

As Collingwood says: 'Until a man has expressed his emotion, he does not know what emotion it is. The act of expressing it is therefore an exploration of his own emotions'. Once an emotion is identified and expressed in a symbolic form like music, the mind is 'lightened and eased'.² So for Laszlo, the phrase 'music expresses emotion' is another way of saying 'music resolves affect'. The emotional state is part of ordinary human existence and the music relieves us of it. Therein lies the pleasure and that is why music is sought after.

There are certain serious difficulties about all this. Firstly, different listeners will presumably be bringing different affective states to the music and it is conceivable that the particular emotion or emotions that are "expressed" in the music by the composer may have no

¹ Laszlo, op. cit., p. 133.

² Collingwood, op. cit., p. 11.

bearing on the needs of any of the audience. For Collingwood, it is particular emotions that are 'elucidated' and 'discovered' and not a sort of general affective state which can be discharged through any music. There is a conflict here between a notion of emotions as specific and differentiated states and the idea that emotion is a general level of 'charge', rather like a wet battery, which needs releasing from time to time. If it is the latter that Laszlo is thinking of, then it bears no relation to Collingwood's point of view: if it is the former, then it is impossible to see how particular listeners get release of affect from particular pieces except by a very lucky strike.

Secondly, music has been known to arouse affect rather than to reduce it. It is perfectly possible for a person to go to a performance feeling no strong feelings at all but to come away stimulated and excited by the music. Music can disturb as well as sooth. We are reminded of Pepys who tells in his diary (27th February, 1668) of going to a performance of wind music

"which is so sweet that it ravished me and, indeed, in a word, did wrap up my soul so that it made me really sick, just as I have formerly been when in love with my wife - - - and makes me resolve to practice wind musick - - ."

Pepys found himself both disturbed and delighted by the music he heard and clearly wanted to repeat the experience, but it does not seem that affect was released by the experience. On the contrary, it was aroused to the extent of nausea.

Thirdly, those who have experience of music often feel that it does 'speak to us' in some way: it does communicate something. A good night's sleep, a hot bath or a walk in the country can relieve us of emotional tensions, but music is more structured than any of these activities, more informative. Theories of 'relativity' tell us nothing

about the possibilities of import or significance. They do not help us to see how in the aesthetic experience we may be:

"laid asleep

In body, and become a living soul:

While with an eye made quiet by the power

Of harmony, and the deep power of joy,

We see into the life of things".

One further qualification must be made to the relativist position.

It is a psychological point: MacDougall called it a 'curious dogma' to say that emotions are only experienced when natural tendencies to action are obstructed.¹ This is clearly true in the case of anger, but some measure of feeling attends all our experience even if no obstruction is offered to our actions. To say that affect is aroused 'when a tendency to respond is inhibited' is fair enough, but it would be dangerous to assume that this is the only condition under which affect may be aroused. The importance of the theory remains though, in that it points out the learned response to music as crucial to any consideration of aesthetic experience.

With respect to the relationship of the listener to the work we ought finally to take account of one other important concept. Bullough gives us the term 'psychical distance' in his description of this relationship from the point of view particularly of the visual arts.² He describes how we are involved and yet detached in a way during the aesthetic experience. Normal everyday reactions are suspended and a special kind of attitude is adopted to the object. This is what he calls 'distance'. He says that it is very easy to

¹ op. cit. p. 329.

² Bullough, E., Aesthetics. (London, 1957) p. 93, ff.

under-distance by relating and associating life experiences with the art experience. (Bernard Shaw used to say that the slow movement of Eroica reminded him of amusing memories of funerals in Ireland.) Something of this may be seen behind the view of Lambert, who found some of Tchaikovsky 'wearisome because a definite emotional reaction is attached to the different themes as they occur, whereas in Haydn or Mozart ~~our~~ emotional reaction is derived from the movement as a whole'.¹ The artist or musician though would usually tend towards the opposite extreme by becoming obscure, artificial and absurd, thus over-distancing. Difficult as this concept is to substantiate, it does sum up a good deal of truth. We can lose sight of the art work by 'taking it too literally' or by becoming 'too involved' with the characters. And sometimes works do seem to be very 'detached' from our experience. 'Distance' is a concept that emerges again from the empirical work, and it will be reconsidered in later chapters.

To briefly summarise: We have noted certain weaknesses in theories of music based on direct sensual pleasure, on play and on the direct transmission of emotions. Theories that stress catharsis and empathy seem somewhat incomplete. A theory of art as communication, signifying something, is difficult to hold unless it is held that it is the 'forms' or 'patterns' of feeling rather than specific emotions that are the referents. The 'relativist' theory helps to show how affect may be built up and discharged by music, though the modification, that music discharges affect accumulated in life generally, has a number of weaknesses. The role of emotion is very hard to assess, but there is often unnecessary

¹ Lambert, C., Music Ho! (Faber, 1934) p. 314.

confusion between ideas of different specific emotions somehow located or identified in the music and a state of emotion which may attend listening to music etc. Emotion itself is a difficult concept and tends usually to be used in discussions of aesthetics in a loose kind of way. The word 'feelings' has a wider and more flexible connotation.

A number of specific questions seem to arise out of all this, some of which may be amenable to empirical work. Is it possible to find any kind of consensus on the 'meaning' of music? In what terms might this meaning be expressed and brought out? How does music relate to our 'life of feeling' in general and in particular, how does it make its effect upon us? How can feelings be presented in music?

The empirical work described in the body of this thesis will, it is hoped, contribute positive information to these problems. In particular, it is hoped to demonstrate that it is possible to describe musical 'events' in quite precise terms within a given relationship. There are also ways of showing something of the relationship that exists, so to speak, between listener and music. The situation is by no means as hopeless as is implied in the opening dialogue: it is possible to have a consensus on the 'meaning' of music if appropriate instruments of measure are used. The findings will tend to support the 'signification' theory but also demonstrate the importance of learned norms that are a feature of 'relativist' concepts. Further discussion can then take place in the light of the gleaned information.

Any such information has important implications for music education. We need to know what kind of an activity music is when we go beyond a merely technical level and it becomes an aesthetic experience. We need to discover what elements of the music experience may be said to have 'meaning' and to find out how such meaning is understood and what learned background is appropriate to this understanding.

Information about abilities to achieve aesthetic experience is not available to date and it is hoped that the experimental work will show the effect of age and general ability on music understanding. Most important, the question of whether or not music, and by implication the other arts, has bearing on the 'education of the emotions' has to be continually answered. Otherwise the music educator, especially in the schools, is in doubt as to the role of his particular specialism in the lives of his pupils. That there is a need for a theory of music that takes in all that we would recognise as musical experience, is obvious from the previous discussion in this chapter. It is hoped that a clearer picture can be presented with the aid of some empirical evidence that will be of value to the musician and above all to those who teach the peculiar and many-sided thing we call music. We cannot claim that the answers are final but it is to be hoped that they are steps in a forward direction.

CHAPTER TWO

One of the fundamental difficulties attending any empirical investigation into music and its effects is the variety of levels at which it can be taken by the listener, or to be more accurate, the 'auditor'. Accordingly, we shall find a wide range of experimental work in the field covering music therapy, social and cultural factors in music and tests of perceptual ability.¹ Since our concern is with the specifically aesthetic response, we must confine attention to work that has bearing directly on this area. Even so, the field is pretty wide and the level of approach is very variable.

In an attempt to quantify the complex data of musical response, a number of investigators have used standard medical equipment to measure and record the effects of music on the physiology. One of the earlier experiments is described by Ida H. Hyde.

"It has been discovered that cardio-vascular functions are reflexly stimulated concomitantly with psychological effects of music and that, through the use of the Einthoven string galvanometer, and sensitive sphygmomanometers, the physiological reactions that have been excited by different sorts of music can be measured and compared."²

This kind of approach has all the instrumental paraphernalia of scientific method, with dials and meters giving readings of changes in blood-pressure, pulse, respiration, galvanic skin response, and so on. Unfortunately, matters are not quite as straightforward as all that,

¹ For examples:

Alvin, J. Music for the Handicapped Child. op. cit.

Swanwick, K. Popular Music and the Teacher. (Pergamon, 1968)

Bentley, A. Musical Ability in Children and its Measurement. (Harrap, 1966)

² Hyde, I.H., in The Effects of Music. ed. Schoen, (Kegan Paul, 1927)

and certain complications which became apparent to Hyde are still with us. A great deal depends on the state of health of the auditor, on the environment, on the degree of alertness or fatigue of the subject and on the degree to which the music used is familiar.

On this question of familiarity, more recently, Hunter found physiological differences in response in terms of predictable and unpredictable music.¹ She noted changes in sinus arrhythmia. (This being the phenomenon of the heart-beat rate increasing during inspiration and decreasing during exhalation. S.A. tends to disappear as the subject becomes more highly aroused and it is therefore a useful measure of 'mental effort'.) Non-musicians showed less evidence of S.A. during predictable (familiar-sounding) music than during silence or unpredictable music, indicating presumably more mental effort being directed towards the better known styles. Interestingly, and of some significance, is the fact that clear results were not forthcoming from musicians. It would seem that this particular measurement can only be taken from the less experienced listener.

Miss Hunter is clear about the difficulties of getting and interpreting physiological readings. The writer has also had difficulties in attempts to measure slight changes in respiration using a thermal device. The results tend to be easily disturbed and as the people who understand the machines seem to be reluctant to place any great weight on such readings, it seems wiser to offer only well-established evidence in this field. A collection of experimental evidence of this type has been summarised as follows.

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Hunter, H., An Investigation of Physiological and Psychological Changes Apparently Elicited by Musical Stimuli. (unpublished M.Sc. thesis, University of Aston in Birmingham, 1970).

- "1) Music tends to cause changes in breathing, cardiac blood-pressure, and blood supply. The tendency is more to increase the rate of these activities than to decrease it.
- 2) Music that is strong and vigorous and rhythmic has a greater tendency to increase these physiological processes than other kinds of compositions."¹

Beyond these somewhat general statements it is somewhat difficult to go. Clearly, we cannot equate these kinds of response with aesthetic quality or satisfaction, for, if that were the case, 'strong, vigorous and rhythmic' music would be per se, of greater value and significance than other kinds, which is obviously not so.

However little such investigations may have to offer in the realm of understanding and appreciating music as an art form, yet such measures may help to sharpen up the role of music as therapy or an aid to work, though sometimes the conclusions seem fairly obvious.

"It is safe to recommend a lullaby played on a violin as a sedative for all individuals who are sensitive to musical tones."²

However, music has become, as Hyde foresaw, 'a valuable agent to scientifically organised labour'.

A number of investigations relating to industrial efficiency, accident-rate, boredom at work, absenteeism and concentration have been carried out.³ The main requirements of music in an industrial

¹ Lundin, R.W., An Objective Psychology of Music. (N.Y., 1953 & 1967) p. 134.

² Hyde, op. cit. p. 197.

³ Lundin, op. cit. p. 254.

situation seem to be that it should be rhythmically regular, varied in tempo, based on majority preference, not so striking in character as to cause cessation of work, and at a level of intensity to match the sound level in the place of work so that it is clearly audible but not distracting. There should also be spells of time without the music for maximum effect. Firms such as Muzak claim that their programmes of music help to increase productivity and reduce tensions in industry and office work.¹ In some cases there have been reports of greater output of eggs and milk, from hens and cows respectively, when music is used.²

Once again, it seems very clear that to consider music from this angle is to ignore one of the central questions for this thesis, of 'meaning' and affective response. Workers in factories and offices are not supposed to listen to the music to the detriment of work. It is not in these terms that we shall be able to approach the problem, for instance, of how a quiet, timbre-restricted and rhythmically non-vigorous movement like the Lydian movement in Beethoven's string quartet opus 132, can apparently cause a high degree of excitement in some listeners. Such 'understanding' and learned response is very different from the use of music in industry and from the more striking effects described by Sargant.

"It should be more widely known that electrical recordings of the human brain show that it is particularly sensitive to rhythmic stimulation by percussion and bright light among other things and certain rates of rhythm can build up recordable

¹ Article in the Guardian, October 12th, 1970.

abnormalities of brain function and explosive states of tension sufficient even to produce convulsive fits in predisposed subjects. Some people can be persuaded to dance in time with such rhythms until they collapse in exhaustion."¹

Studies of tribal rituals certainly suggest that the brain can be overstimulated by music when it is involved in ceremony of some kind, and something of this can be found in the response to some popular music among young people. But once again, such an account of music's effectiveness cannot begin to make sense of a simple tune that is enjoyed, as it were, for its own sake. Most music does not reach levels of brain stimulation as described above, and some other way has to be found of probing its effects and significance.

From a behavioural point of view, it is possible to map out the boundaries of sound and to determine to some extent the dimensions and limitations of our hearing. The relationship between the physical aspect of sound and its psychological counterpart, the stimulus and response, can then be studied in terms of human behaviour. Studies in this area can certainly be described as 'objective' and thus meet with the approval of Lundin.² They can also be carried out with precision by using electronic equipment with calibrated controls and by asking subjects to make adjustments to the controls to achieve particular effects. A number of experiments of this sort, notably those of Stevens, demonstrate the fact, for example, that the human organism seems, even on the simplest level of sound stimulus, to impose a somewhat slanted interpretation on to the sound material.³ Stevens presented subjects with pairs of

¹ Sargant, W., Battle for the Mind. (Pan, 1957) p. 92.

² Lundin, op. cit. p. 5.

³ Stevens, S.S., The Attributes of Tone. (Washington, 1934) p. 457-459.

alternating tones varying slightly in frequency, and asked them to correct the difference by adjusting the intensity level of one of the tones. It was possible to conclude from the adjustments made, that pitch is by no means identical with frequency, since the pitch of the lower sounds appears to decrease as intensity is increased, and the pitch of higher tones appears to increase with an increase in intensity.

Using similar techniques of paired sounds, two tonal factors emerged in addition to the usually accepted ones of pitch, loudness, timbre and rhythm. They are 'volume', a spacial quality which increases with intensity and decreases with higher frequency, and 'density', or possibly 'brightness', which increases with increases of both frequency and intensity. There may well be other such secondary factors that can be located in the sounds. However, the main physical-psychological relationships are as follows, though not of course in a simple one-for-one correspondence.

PHYSICAL	PSYCHOLOGICAL
(the sound-wave)	(as it is perceived)
a) frequency	pitch
b) intensity	loudness
c) form	timbre
d) duration	rhythm (in a wide sense)

It seems reasonable to add one other sound factor to the existing four, namely 'simultaneity'. In a sense, timbre is a manifestation of this factor since it depends a good deal on the selection and number of overtones present with the fundamental sound. The distribution of energy amongst the overtones also plays a part in determining timbre, but basically, it is possible to say that timbre depends on the number and nature of simultaneous sounds. The concept of simultaneity must however stand apart from timbre, since it accounts for the perceivable combination of

tonal qualities of consonance and dissonance, which, although dependent on learning to a large extent, do seem to be fundamental to all musical performance and listening that involves more than a single clang.¹ Simultaneity might also justify for itself a place among the basic sound factors by virtue of its having aural boundaries similar to intensity and frequency. At one extreme, a great deal of simultaneous tonal activity may become confusing and uncomfortable, while at the other extreme, a prolonged clang or set of single clangs may become wearisome. The boundaries of intensity and frequency are well-known, from the pain threshold at high intensity to inaudibility at the lower end and the extremes of frequency. Pitch and timbre cannot be perceived at all on very short sounds, and sounds of long duration tend to become boring.

We may in fact, put forward a concept of comfortableness, which can be strained when musical materials approach the extremes from the psychological point of view. Ortmann found that sounds in the middle of the pitch, loudness and durational range were preferred by his subjects.² This was the case even when no more than the very limited range of the piano was used. Sounds in fact can seem aggressive, or may fatigue us if great concentration is needed to perceive them clearly. Feeling states can obviously be aroused by sounds when they depart from the 'comfortable' middle band, but is this a fundamental way in which music makes an effect upon us? Clearly not, for music on the radio is carefully controlled to take out the extremes of intensity, and the equipment itself usually filters away a good deal of the frequency and wave-form extremes. And yet most people are fairly happy listening to radio or records and are liable to get

¹ A clang being a musical note of any timbre.

² Ortmann in The Effects of Music. op. cit., Chapter 3.

aesthetic pleasure from them.

The prime difficulty about attempting to map out musical response in terms of acoustical phenomena is similar to that inherent in many investigations relying on physical measures. Both the physical and behavioural approach tend to deal with musical materials rather than with musical elements. This is a very important distinction and separates sounds that are not seen in a musical framework from sounds that are located in a specifically musical perspective.¹ To consider the duration or pitch of a tone is not necessarily to see that tone as a musical thing. A tune, which would be a musical element, is more than a series of clangs of different pitches and duration. It assumes a certain character and sense of movement and shape. (A student of the writer's once complained that his sense of pitch was so strong that he tended to hear separate, nameable notes instead of a melodic line.) Even a single sound can be seen as a musical element, depending on the circumstances. The note "A" that is sounded in a particular concert-hall to indicate that the performance is due to start or that the interval is over, is likely to be treated as a signal for us to return to our places. On the other hand, a single note of the same frequency, without any rhythmic impetus, the note "A" that is heard on the trumpet at the start and later on in Wagner's Rienzi Overture is more likely to be heard as a musical element. Any sound can be in itself a part of music if it is seen to have the potential of growth and relationship with other sounds and if someone, composer, performer or listener intends that a musical statement shall be made. Alternatively, no sound is, just by virtue of being a sound, a musical

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The distinction is made by Langer in Problems of Art. (Routledge, 1957)

element. The sound of an organ pipe, for example, is often just a piece of raw material to the organ tuner.

The distinction between materials and elements is a vital one and unfortunately tends to become a bit blurred when psychological or behavioural techniques are used. The concern with objectivity makes materials much easier to handle than elements, since the latter depend more on 'attitude of mind' than anything else - a very un-behavioural notion. Some psychologists go so far as to doubt the ability of psychology to test in aesthetic areas. Westland says that tests have to measure responses that are right or wrong rather than those dependent on some kind of aesthetic judgement.¹ He could find no such tests in 1957 and concludes that psychology cannot tackle the 'genuine problems' of aesthetics but should merely measure what it is able to measure.

As it happens, a whole group of tests were then in existence which attempted to measure right and wrong responses. Schoen, Kwalwasser, Seashore and others had included 'appreciation' judgements in tests of musical ability. The best known example in this country is the Wing test-battery.² Unfortunately for these tests, and this is perhaps what Westland means, a value-judgement is required of subjects that is very closely linked with particular ideas of style and repertoire. These ideas have changed of course, but one may doubt whether the particular musical culture implicit in Wing's tests was ever really widespread enough to make them fair. Music students of the present time can give the 'right' answers because they know what is expected, but the performances they actually prefer are not always the correct answers. Wing certainly avoids using mere materials by having little parts of classical pieces, but he runs into the

¹ Westland, G. , British Journal of Aesthetics. October, 1967, p.354, ff.

² Wing, H., Tests of Musical Ability and Appreciation. (Cambridge, 1968 ed.)

problem of the learned cultural response.

A number of other studies ought to be mentioned at this point as typifying to some extent the range of work in the field.

Myers and Valentine in 1914 reported on their work with single tones and bichords.¹ There were several interesting conclusions to be drawn, including the grouping of the response of various subjects into 'aspects', or types of listening and response. Much of the work at about this time reinforced the concept of 'types' of listener or appreciation. In this case, the terms 'intra-subjective' (physiological reaction), 'objective' (paying attention to the behaviour of the sounds), 'character' (absorption in the tones), and 'associative' were coined. This work was based to some extent on the methods of Bullough with single colours.² He found four groups of 'colour aspects' among the subjects which correspond to those mentioned by Valentine. Other information includes the fact that lower tones seem to depend more on their physical effect than on other 'aspects'. Bichords and single tones produce different distributions of 'intra-subjective' and 'character' aspects. Association with extra-musical things occurs more usually with the less musical subjects.

Ortmann divided up his listeners into types.³ Auditory and non-auditory is a basic division for him, and both types divide up into 'sensorial' (an unsystematic acceptance of sensory material), 'perceptual' (an organising of sensory material, presumably into musical or other types of elements?), and 'imaginal' (recreation of the material through memory or re-use). Later on, Valentine came to

¹ Study of Individual Differences in Attitudes Towards Tones. (B.J.Psyc., VII, 1914)

² The 'Perceptive Problem' in the Aesthetic Appreciation of Single Colours. (B.J.P., II, 1906) pp. 406-463.

³ op. cit. (Schoen, chap.3)

divide his associational group into 'fused' (related with the music), and 'non-fused' (a freer play of fantasy). This may presumably correspond with Ortmann's auditory and non-auditory types.

Herbert Read was concerned to equate the four main types identified by Bullough with the four function-types of Jung.¹ (thinking, feeling, sensation and intuition) Philip Vernon, in a much more straightforward way, lists seven categories of musical experience in a very thoughtful paper.²

- 1) Physical (the actual sensation of the sound)
- 2) Free trains of thought (like a hot bath)
- 3) Emotional reaction (in terms of dramatic or visual associations)
- 4) Muscular reaction (the delicate and complex adjustments we make with every perception)
- 5) Synaesthesia (particularly the link of musical key and visual colour)
- 6) Auditory images and intellectual processes (musico-technical)
- 7) Social and temperamental factors

Such a listing of modes of responding to music is helpful to the extent that we can recognise that from an aesthetic point of view some reactions are more relevant than others. As Valentine found, the least musical people will tend to form extra-musical associations. Most reactions are almost certainly a mixture of various types of response but clearly one gets more out of the music by attending to it rather than wandering off in other associations.

¹ Read, H., Education Through Art. (Faber, 1956) p. 92, ff.

² Vernon, P.E., The Apprehension and Cognition of Music. (Proceedings of the Musical Association, February, 1933).

It seems reasonable to see some of these responses as 'distractions' or at least as not central to the aesthetic experience, in terms of contemplation of the music for its own sake. A rough model may help to show how we might see the levels and 'hazards' on the way to musical understanding, or the grasping of 'significance.'

LEVELS

DISTRACTIONS

ATTENTION TO SOUND SOURCE

NOISE (other sounds, discomfort, social pressures, fatigue etc.)

PERCEPTION OF MUSICAL MATERIALS

ASSOCIATION (with other sounds, synaesthesia, day-dreaming)

PERCEPTION OF MUSICAL ELEMENTS

ASSOCIATION (dramatic or visual, technical analysis, historical or biographical background etc.)

CONCEPTION OF THE WORK

INADEQUATE SCHEMATA (wrong mental 'set', poor grip of style, false expectations)

To, in any real sense of the term, 'understand' music, this process, roughly mapped out as it is, has to be continually activated. It is perfectly possible for individuals never to get to the 'conceptual' stage, which may account for the fact that some philosophers and psychologists are unable to see music as being anything else than a game, a day-dream, or a set of sound stimuli. Even for experienced listeners, it is sometimes not possible to gain the ultimate aesthetic satisfaction from the encounter with music, any more than it is possible to always enjoy, poetry, philosophy or

scientific reading.¹

Most empirical testing of musical response seems to have confined itself to musical materials. The field of musical experimentation is littered with 'ability' tests and their evaluation. Some, as we have seen in the case of Wing, attempt to include an 'appreciation' component, but many choose the safer ground of testing pitch and chord perception and melodic or rhythmic perception and memory.² In a recent English publication, a very brief section on aesthetic response or 'aesthetic education', included a discussion of a mescaline experiment and a description of a class being calmed by a teacher's performance of Jesu, Joy of Man's Desiring but very little else.³ American and Australian literature reveals a similar avoidance of aesthetic response to music. Yet it is clear that there are other 'abilities' besides the perceptual and memory abilities as applied to musical materials. Many children and adults have these abilities yet still do not like or cannot 'understand' music. We cannot assume that ability with and interest in music go hand in hand. Wing found only a small correlation between interest and ability.⁴ He also found in his 'appreciation' tests a 'negligible' score up to eleven years of age.⁵ It is hoped to show later in this thesis that there are a set of appreciation abilities and that they are well established in children as a rule well before the age of eleven.

¹ Kelber makes the point with respect to music. op. cit. p. 15

² For example, Bentley, op. cit.

³ Shuter, R. The Psychology of Musical Ability. (Methuen, 1968)

⁴ Wing, H., Some Applications of Test Results to Education in Music. (Brit. Journal of Ed. Psychology, Vol. XXIV, 1954) p. 161-170.

⁵ Wing, H., Tests of Musical Ability and Appreciation. p. 79.

There are instances of experiments in the field which do attempt to measure aesthetic response. One of the earlier attempts was made by Esther Gatewood.¹ She compiled a list of possible effects of music on the listener, such as sad, serious, amused, rested, longing, patriotic and irritated, and constructed a form of questionnaire, the words to be checked off when short, fairly popular pieces were played.

"The results of such experiments add very little to the well-known fact that most people connect feelings with music, and (unless they have thought about the precise nature of that connection) believe that they have the feelings while they are under the influence of the music, especially if you ask them which of several feelings the music is giving them."²

The problem of consistency of description is a feature of many experiments where adjectives have to be applied to music. Valentine found that he could not get subjects to describe consistently a single interval.³ (Which is not really surprising, since raw musical material is often what each individual chooses to make of it.)

The 'sad' minor third, for example, was in one experiment described as 'sad' or 'plaintive' by eleven people as against twenty-six who thought that the major third had that character. Heinlein could find no fixity of feeling-tone to any particular chord or composition.⁴

Valentine gives his opinion that there is little in common between results based on single notes or intervals and those based on actual

¹ Gatewood, E., See The Effects of Music. op. cit. pp. 79 ff.

² Langer, S. Philosophy in a New Key. p. 181-182.

³ Valentine, C.W., The Experimental Psychology of Beauty. (Methuen, 1962)

⁴ Heinlein, C.P., Journal of Comp. Psy. (Vol. IIX, 1928) p. 101.

compositions; (another indication of the distinction between materials and elements). He cites a number of experimental situations in which there was no evidence at all of a unified type of response to music and concludes: 'One cannot rely on many compositions providing similar feelings in everybody, or even in the majority of listeners'.¹

It is, however, possible to find some instances of a consensus of opinion about music, but generally such descriptions or reactions are in very broad terms. The work of Henkin is of some interest here.²

"Variations in personal opinion have resulted in a complicated mass of fact and fantasy concerning the nature of music. Thus, in order to understand musical thought a special form of communication must be learned. The difficulty with this is in the attempt to base musical thought on the subjective feelings of groups of people who describe music in terms of a changing esoteric set of experiences which have different meanings for different groups or individuals. A real understanding of music can be achieved only in terms of information which can be communicated from generation to generation. That is, relationships must be established between objective musical terms and identifiable characteristics within music."³

Because of his success in isolating melodic and rhythmic factors in terms of factor analysis and galvanic skin response, he concludes that such techniques can be used to determine objectively 'the characteristics of musical sound and also the effects of music on the listener'. We might notice, however, that in these experiments only very general

¹ Valentine, op. cit. p. 308

² Henkin, R.I., A Factorial Study of the Components of Music. (J. of Psy., 1955, 39) p. 161-181.

³ Henkin, The Prediction of Behaviour Response Patterns to Music. (J. of Psy., 1957, 44) p. 111-127.

categories of components have been established; those of melody and rhythm. No differentiation takes place within a framework of melodic or rhythmic change. Henkin has certainly been able in some measure to cut through the 'verbal jungle around the aesthetic' that may in part be represented by 'intersense modalities' and the awkwardness of language in this area.¹ His statistical and psychological techniques are of value here. He has also used music rather than materials; pieces by Bach, Honegger and Stravinsky and so on. But a much more sensitive control of the musical elements is required. To collect responses to a whole movement by Vivaldi, Schubert or Varèse is to be out of control of the stimulus aspect, no matter how acute the measurement of response may be. This is to be borne in mind when the experimental work appertaining to this thesis is devised.

The greatest divergence of opinion about the 'meaning' of any particular bit of music seems to occur when subjects are asked, 'how does the music make you feel?'. More clear-cut answers and greater agreement is found if the question, 'what is the music like?' is asked. This highlights an important aspect of procedure, since opinion and reaction to the music as a kind of object and response to music in a more subjective way need not necessarily be the same thing. The behavioural approach and physiological measure tend to recognise only the response and do not care to analyse the exact nature of the stimulus and how it appears to the listener. Thus, we should not know from Pepys's description of his physical state whether he was at the time in love with his wife, feeling mal de mer, or enjoying wind music. Yet the difference in actual experience is striking.²

¹Merriam, A.P., The Anthropology of Music. (Northwestern University Press, 1964) p. 99.

² Cf. chapter one, page 29.

It seems a bit like asking for accuracy in determining what a person had recently been doing from the mere fact that he had tears in his eyes. The relationship between the work and an appropriate response is certainly not simple. Bullough observed that, particularly in the case of the temporal arts - music and poetry etc., the work tends to 'compel aesthetic adaptation'.¹ This adaptation 'is exposed to the fluctuation, deviations and apparently especially to the oscillation between the object and the subject's self and his reactive feelings'. Greater clarification of the implications of this sort of statement is obviously required and this will be part of the task later on in chapter six. For the moment we must observe that if an art work is, as our working hypothesis would suggest, a detailed and highly articulated presentation which somehow relates to life 'as it is felt', then clearly the sorts of measures considered so far are as limited in information potential as they would be in attempting to diagnose the state of mind or feeling of a person playing chess or reading philosophy. This is perhaps why many musicians are suspicious of any form of testing in the event that it seems to reduce their art to crude basic formulæ and may rob it of the 'magic' it appears to have. Certainly, piecemeal work without locating it within a framework of wider issues than the testing of this and that is liable to give this impression.

"It is probably time that scientific researchers turned their attention to more basic problems, searching our basic theories, constructing fundamental hypotheses, and in general attempting to establish an intellectual foundation for the research being carried on."²

Detailed and circumscribed work must certainly go on, but it must

¹ Bullough, E., Recent Work in Experimental Aesthetics. (Brit. J. Psy. 1921-22) p. 78-79.

² Britton, A.P., See over.

be in a context of wider issues. This is why some help is required from the more speculative and philosophical positions. The goal at least seems a little clearer now. We have to find sensitive, well-controlled measures to probe well-controlled music experience and then utilise the results inside a framework of reasonable theory which takes into account all the chief characteristics of the aesthetic experience.

It is necessary now to consider the psychological problem of the manner in which feelings, or the 'form' of feelings, may be presented to the understanding of the listener. That affective states are somehow involved in the musical experience is beyond doubt, though how this may be so is difficult to describe. What is the relationship between 'feeling' in music and 'feeling' in 'everyday life'? How is music 'charged' with feeling?

There does seem to be, what we might call, a pre-artistic use of music where the emotional elements are fairly easy to identify. We have noted the effects of rhythmic drumming on the brain and we ought also to take note of Brown's qualification to this.

"People are deeply excited by drumming and chanting, not by the mechanical effect alone but because they believe in the particular creed that they signify and permit themselves to pass into a state of frenzy."¹

In primitive communities, music is rarely attended to for its own sake but nearly always functions as part of an affective situation of ritual and ceremony, taking on the role of defining a mood and reinforcing belief along with enactment and dance and decoration.² The writer has argued elsewhere that something of this function attends

cont. from p. 50: Britton, A.P.; Journal of Research in Music Ed.

¹ Brown, J.A.C.; Techniques of Persuasion. (Penguin, 1963) p. 305.

² Nettl, Bruno, Music in Primitive Cultures. (Harvard, 1956)
also Merriam, op. cit. p. 71-72.

the 'pop' music phenomenon among adolescents.¹ But beyond this state, when music no longer has the framework of dance or ballad story or ritual enactment, when it even gives up words and titles, that is where our difficulties begin. How can feelings be signified in 'pure music'? How can music 'mean' anything on this level? It has been argued that words are able to represent things for us because 'they produce in us some replica of the actual behaviour'.² In music, how is any such 'replica' mediated to us? Langer says that many people still find it difficult to distinguish between 'an emotion directly felt and one that is contemplated and imaginatively grasped': just how is an emotion presented in music to be contemplated and apprehended?³

A possible line of solution to these problems is to be found in the work of Vernon Lee.⁴ She places a good deal of weight on introspective techniques and her observations are very personal, but she has thoroughly documented the ideas and reactions to music of a number of articulate subjects. She too has indicated a division of types among listeners: she defines two main categories, 'listeners' and 'hearers'. 'Listening' is 'taking stock of something which is moving and changing and in so far as it is accompanied in him who listens by a sense of high and complex activity'. 'Hearers', on the other hand, tend to day-dream and allow attention to wander away from the music. She makes it quite clear that the division into types is not just a matter of how people listen, but of their attitude towards the activity.

¹ Swanwick, op. cit.

² Osgood, Suci & Tannenbaum, The Measurement of Meaning. (Illinois, 1957) p. 7.

³ Langer, Mind. p. 89.

⁴ Lee, Vernon, Music and its Lovers. (Unwin, 1932) p. 44, ff.

'Listeners' know that they are inattentive from time to time, but 'hearers' 'rarely admit that they have lapses of attention'. When they do so they are likely to say that music is for dreaming to. As an example here, we might notice the views of a well-known film director, who recently claimed that when he went to the theatre he attended to every word and detail but that at music concerts he listened for a bit, then went into a reverie, then listened to a bit more, and so on. He gave as his opinion that this was one of the chief differences between the theatre and music. Clearly we have here a 'listener' in the theatre and a 'hearer' of music. He is not able to get to grips with any concepts that might be located in the work but simply requires a 'state of music' to allow thought to wander.¹ Another interesting example of the hearer/listener dichotomy in the same person is of the music student, a singer by training, who listened 'intently' to lieder and vocal music but found herself able to do housework and even read during classical symphonies. The difference between 'listener' and 'hearer' depends largely on what the individual thinks music is.

What does the 'listener' find so enthralling about music? We noted earlier Hanslick's excitement that came from following the musical ideas of the composer. Vernon Lee found similar views among her 'listeners', who spoke of music 'chasing away fatigue', bringing the 'keenest inner excitement or exaltation', a 'strong element of pleasure', a 'special profound emotion'. Once again we stumble into the 'aesthetic emotion' which seems fairly characteristic amongst those who are able to attend to music fully.

As for those 'replicas' of life situations which language mediates to us and music may, indeed must if we are to consider it as a vehicle of significance, Vernon Lee is able to offer an operational

¹ Merriam, op. cit. pp. 71, 72. The 'state of music' that is required for tribal ritual etc.

model. She draws particularly upon the work of Henry Head and his concept of 'postural schemata'. To quote Head directly:

"Every recognisable (postural) change enters into consciousness already charged with its relation to something that has gone before, just as on a taximeter the distance is presented to us already transformed into shillings and pence. So the final product of the tests of the appreciation of posture, or of passive movement, rises into consciousness as a measured postural change.

For this combined standard, against which all subsequent changes of posture are measured before they enter consciousness, we propose the word 'schema'. By means of perpetual alterations in position we are always building up a postural model of ourselves which constantly changes."¹

So it appears that we may carry with us a plastic, always changing set of memories of all past activities, the schema, or 'ghosts' of past movements. Lee suggests that the sounding entities we call music could be analogous models of such schematic activity. In music we can, it is suggested, discern an extraordinary range of manner of movement; reaching out, retraction, coalescence, extrusion, integration, disintegration, and, of course, the rhythms of development and growth which are fundamental to all sentience.² Music can then be said to take up the attitude of human situations, in that the schemata of a reaction, a stance, a muscular set or a gesture can be presented in its 'sounding forms'.³ We might interpret the term 'postural schemata'

¹ Head, H., Studies in Neurology. (Oxford, 1920) pp. 665, 606.

² Vernon Lee, op. cit. p. 79, ff.

³ The term is Hanslick's.

in a very wide sense, remembering that every perception causes some adjustment of kinaesthetic position, no matter how slight. Any physical or 'mental' activity, it can be argued, must leave a residual schema. It is in this wide sense that the term 'postural schemata' will be used in what follows.

It is possible to develop a little further the distinction between 'hearer' and 'listener' with reference to postural schemata. Assuming that a hearer attends closely enough to recognise at a certain point in the music a particular 'attitude' or 'gesture', he is likely to be reminded of a situation in his own life or of some biographical detail of the composer's or performer's and so on. This recall of a specific situation, brought to mind by a schematic presentation, will tend to distract him from the music if he allows the association of ideas full play. Thus, Shaw may think of Irish funerals during Eroica or someone else may get involved with memories of a watery picnic during the 'storm' part of the 'Sixth' symphony. This is why one piece of music may suggest different things to different people. The differences are in the reading-in of life experiences into the presented schemata. The point of unity, the work, has led them to a variety of referents. The 'listener', on the other hand, whilst recognising the postural implications of a particular passage, will tend to hang on to see what happens in the music rather than what happened in his own past history. The point is that both 'types' of listener recognise the presented schemata, but one will treat it as an abstraction and follow its dynamic evolution while the other will accept it as a kind of snap-shot, reminding him of other things. Speculative as such thinking may be it is an attempt to answer the question of what the 'subject' of music may be, namely, the schema or dynamic properties

of past experience. If experimental evidence could be brought to bear on this area we should then be further forward in investigating the aesthetic experience.

It is possible, in a limited and more certain way, to probe a little further into the question of body posture. Work has been carried out on posture, gesture, body and self-image, and this seems relevant here.

The role of posture and gesture as an important aspect of both human and animal communication has long been recognised. On the simplest and most obvious level, everyone sends out 'an incessant stream of signals about his social standing, wealth and background'.¹ This information is expressed in our gestures and postures and in clothes and houses, cars and so on. It has the same biological origins as the animals' 'territorial' claims.

"In this way the polished speaker can be 'betrayed' by television, and we can gauge the sincerity and significance of what people say by what we read in non-verbal communication."

These sorts of signals seem fairly superficial but they are all superimposed on more fundamental patterns of posture which are directly and closely related to feelings and the more intense experience of emotion. The relationship between posture and feeling has been analysed to some extent by Charlotte Wolff.² Each gesture is, for Wolff, a 'synthesis of many movements', the fundamental gestures being those of forward drive and inhibition, reaching out and withdrawal. A posture is a 'platform' for gestures. (On these terms Head's 'postural schemata' clearly includes gestures.)

¹ Burns, T., Discovery magazine. (October, 1964) p. 31 ff.

² Wolff, C., (trans. Tennant) A Psychology of Gesture. (Methuen, 1945)

In general affective terms, the posture of a 'happy' person, says Wolff, is characterised by 'roundness'. The 'flexor muscles become rounder through animated circulation and reinforced tone'.¹

As an aid to diagnosis, she believes the analysis of isolated psycho-motor traits to be of little value but that overall patterns are established which are helpful in this way. Because of the striking, and unintentional resemblance between her descriptions of such patterns of postural behaviour and descriptions often applied to music, it seems worth citing a few examples here.

The state of extreme inhibition is often characterised by extensor movements, withdrawal, stereotyped and arrhythmical movements, motor unrest, slow motor speed and unnecessary movements. Depression may display itself in slow motor speed, non-emphatic gesture, hesitating, tightness of posture and very few unnecessary movements. Elation is shown in a wealth of unnecessary movement, fast motor speeds, exhibitionist behaviour, spontaneous, emphatic and rhythmical gesture and self-assertiveness. Anxiety is revealed often in unnecessary movement with perseverance, interlocking of hands, ambivalent motor speed, fidgeting, variable forward impulse and so on.

Using such terms of description it would not be difficult to identify certain musical ideas under appropriate headings. To give a general example, the music of both Chopin and Tchaikovsky has been interpreted often as being 'anxious'. Both composers tend to demand of the performer rubato, (variable forward impulse) and display abrupt changes of tempo (ambivalent motor speed), fidgeting and perseverance (in the form of repeated figures) and so on.²

¹ Wolff, op. cit. p. 9.

² The first movement of Symphony No. 5 by Tchaikovsky for example.

Certainly, we would be unlikely to describe music without a fast motor speed, devoid of unnecessary movements and lacking emphatic and rhythmic qualities, as 'elated'.

Edmund Gurney was aware of the relationship between music and physical movement.¹ He recognised that body motion is a way of expressing feelings but also that music is much more varied and delicate in its movements than the body and therefore is not limited to signifying observable gestures. Whilst this may be true, the actual range of overt body movement is probably much greater than Gurney realised. The 'human body is capable of assuming about one thousand different steady postures'.² ('steady' meaning a static position that can be held for some time) This would represent only the 'platform' for the variety and combination of gestures. When we add to these positions the long list of 'expressive movements' and gait given by Allport we have an incredible range of physical expressiveness.³ Of relevance here are the three group factors isolated by Allport using a battery of tests based on particular tasks.⁴

He located an 'areal' factor (expansiveness, size of movement etc.); a 'centrifugal' factor (distance from self, the outward movements); and an 'emphasis' factor (pressure, weight and energy of movement). The experiments described later in the thesis will show the relevance of the concepts of size, outgoingness and weight to musical elements.⁵ With respect to 'gait', the relationship of movement to music

¹ Gurney, The Power of Sound. p. 341.

² Allport, G.W., Pattern and Growth in Personality. (London, 1937 & 1961) p. 486-7

³ Allport and Vernon, Studies in Expressive Movement. (N.Y., 1933) p. 26 ff.

⁴ op. cit., p. 109, ff.

⁵ Note also: Laban, R., Modern Educational Dance and Effort (1948 & 47) and the identification in movement of the factors of weight, space, time and flow.

is evident. It has been suggested that there are seven measurable attributes in gait: ¹ 'regularity, speed, pressure, length of stride, elasticity, definiteness of direction, and variability'. Musical terms like giusto, ritmico, a tempo, pesante, and rubato serve to point a few parallels.

We are not however limited to finding similarities between music and observable obvious movements. Apart from the fact of small changes in muscle tonus that accompany every perception, ² recent work by various people has shown the importance of schemata in terms of 'body image' and 'self image'. A stable self image is lacking often in adolescence and is related to the ability to sustain an identity. ³ There is also the notion of body 'boundaries'.

"There has been excellent corroboration of the fact that resiliency in the face of stress is likely to be greatest in those with well-articulated boundaries." ⁴

The body image is bound up with all our personal relationships and activities: it is a means of holding a sense of identity and 'is based not merely on association, memory and experience, but also on intentions, will, aims and tendencies'. ⁵ The image we hold of our bodies in terms of weight, size and boundaries etc. is clearly of great importance to us. The point that concerns us here is that 'postural schemata' is a term covering the schematic residue of overt physical

¹ Allport and Vernon, p. 437.

² Allport and Vernon, p. 61.

³ Argyle, M. & Kendon, A., in Advances in Experimental Social Psychology. EDIT. Berkowitz. (N.Y., 1967) p. 81, ff.

⁴ Fisher, S. & Cleveland, S., Body Image and Personality. (N.Y., 1968) p. 392.

⁵ Schilder, P., The Image and Appearance of the Human Body. (N.Y., 1950) p. 298.

activity but may also reasonably be extended to include ideas of body-image and patterns of affectivity and conation. There also seems no reason why we should not include cognitive schemata under Head's original postural concept. Presumably it is the same kind of schematic operation that allows us to remember information.¹ We all know the experience of trying to think ourselves into a previous 'frame of mind' to get to grips with a problem of some kind: what we are doing is to replicate the schematic structure in which the appropriate cognitive operation can be located, and 'frame of mind' is a good term, provided that we remember that such a frame is never rigid but is always changing as new experience is accommodated.

In the light of this extension of the notion of 'postural schemata' we can try to formulate a general hypothesis from which to work. Pasto tries to do it for visual art,²

"Meaning" in visual art is a total perceptual-motor awareness whereby experienced material is, through visually triggered physio-neural processes, related to one's own body schema'.

Our theory with respect to music rests upon the belief that all our previous sentient experience is represented, without conscious definition normally, through the schemata of the particular activities that make up that experience, whether those activities were perceptions, physical actions, emotions or thoughts. It is these schemata that constitute the 'replica' of past experience and are the 'referents' for the symbol-structures of the musician. This is how we can see that Langer's 'form of feeling' is a reasonable, if cryptic summary of what the 'subject' of music might be. If it can be shown that music is indeed 'forms symbolic of human feeling', then

¹ Bartlett, F.C., Remembering. (Cambridge, 1932) p. 198 ff.

² Pasto, T.A., Notes on the Space-Frame Experience in Art. cont.

the central problem of 'significance' is solved. (Part of the empirical work that follows will show how affective states can be recognised in music and distinguished by their 'schemata'.)

This is the hypothetical framework within which more detailed and careful observation may be carried out. Alongside this speculative and non-scientific edifice, we have also unearthed several practical and useful criteria which take us with a better sense of purpose into the empirical section of this thesis.

cont.) Pato, (Journal of Aesthetics and Art Criticism. no. 24)

p. 303 - 305.

CHAPTER THREE

In the light of issues discussed in Chapter One and the research examined in Chapter Two it becomes possible to formulate a group of questions that allow experimental work to provide answers.

Is it possible to find any consensus of opinion as to the meaning or significance of particular musical elements? Can this opinion be expressed in terms of posture and gesture (size, weight, movement, flexibility etc.)? Of what value are affective descriptions of music?

The first objective is to establish certain safeguards in terms of control of both the manner of description and the music being used. We know that to ask the question 'how does the music make you feel?' is likely to produce a set of incompatible answers; attention has to be focused on the behaviour of the music rather than the subject, so the question 'what is the music like?' is likely to be more fruitful. It seems clear also that the fragmentation of musical material down to single or paired tones, without rhythmic direction and musical purpose, will hold the experimentation down to a level of mere materials and never really probe response to musical elements. On the other hand, to take whole pieces of music, or even a complete tune of any complexity, would introduce so many uncontrollable factors into the situation as to make only the most general conclusions possible.

The importance of establishing a norm against which deviations may take place has been indicated. It is clearly important to establish a musical sub-culture inside which judgements may be made by the various subjects. Consistent acts of judgement about music by

the subjects would indicate the value and importance of the relativistic norm/deviation concept.

Strong associations with extra-musical experience should be avoided. There would be obvious difficulties about getting an objective description of the latest 'pop' song, or The Red Flag, or even God Save the Queen. Reference to distinct and highly culture-bound musical styles, to well-known tunes and rhythmic clichés, should be avoided. Variables like tone-colour, harmony and words to music are best eliminated altogether until judgements are required on them specifically. The separation of melodic and rhythmic factors, on the other hand, does not seem to be desirable. Henkin has shown them to be pretty basic to music.¹ Melody cannot exist without awareness of some sort of rhythmic direction and pace. Human ability to organise sounds into rhythmic groupings is well-known and the sound of train wheels and ticking clocks are examples of this. Rhythmic elements without pitch, on the other hand, are rarely found even in very simple music. In primitive cultures, rhythmic patterns tend to act as a basic for melodic presentation.

Bearing in mind Zuckerkandl's statement that repetition is the 'natural state of music' and that all change is a kind of break in the wave, it seems reasonable to take the simplest melodic/rhythmic device of alternating intervals in a metric scheme as a sort of basic, repeated pattern against which deviations can be measured.²

¹ Henkin, op. cit. *The Prediction of Behaviour Response Patterns to Music*.

² Zuckerkandl, V., Sound and Symbol. trans. Trask, W.R. (London, 1956) p. 219.

Throughout all the experiments this form of musical element has been used, and it seems to offer a simple, controlled and yet musical experience. The terminology of 'basic unit', indicating the repeating figure, and 'event', indicating the particular deviation, has been adopted.

Ex. 1



Different basic units and various events have been used during the course of the investigation. Taken over a long term with various groups of subjects, this manner of controlling the musical element has been found very satisfactory. It provides a focus for attention: subjects can be asked 'what happens to the music just before it ends?'. This pin-points a very specific musical happening but in a clearly defined context, or norm.

Altogether, 323 different subjects were used over nearly 5 years, some of them more than once. A preliminary test and nine other test situations were constructed and, inevitably, modifications in design and presentation took place.

The method of description of this work will be to take each test and results in the order of occurrence, thus showing the development of thought and process as well as the side-tracking and mistakes involved. Most details are given in the text rather than in an appendix, since it seems easier to skip tables etc. than to turn on to information that is stored at the end of the thesis.

Preliminary Test (Applecroft School, Welwyn Garden City)

The purpose of this test was to explore the possibility of finding a consensus as to the significance of the musical elements that were presented, and to determine something of the way in which music is understood or 'taken' by observation of the manner of description employed by the subjects. For these reasons, and in the absence at the time of a proven instrument of measure, the situation was kept fairly open-ended. Nine children were selected as representing the age-range 6 to 10 years on the basis that they were all linguistically articulate and might therefore be able to describe the music fairly fully. The deviations B, C, and D were heard on three separate occasions, different days. In each case the basic unit A, preceded the particular event to establish very clearly a norm-context. After the children had written what they thought the music was like, discussion took place (between each event) and this appeared to have the effect of stimulating those who needed stimulation.

The instructions given were as simple as possible: 'Listen to this.' (basic unit) 'What is happening in this music?' 'What is the music doing?' 'What pictures or stories does it make you think of?' 'When it has finished, write down your ideas?'. This was then repeated with the event taking place and they were asked to fit the event into their descriptions. Since there appeared to be some difficulty with this during example B, a specially prepared set of papers were given out for C and D, with a red box drawn in to take the description of the event. This seemed to clarify the situation, although some children said that 'you get more ideas when you hear it altogether', that is to say, the event in its context from the start. Several of them asked to change their medium of description, the analogy as it were, when the event took place. Clearly, the

manner of ending makes a great difference to the impression of the whole. The event, to some extent, makes sense of the basic unit. The actual order of playing was randomised as follows: B - 3,1,4,2; C - 2,1,4,3; D - 4,2,1,3.

In each case the music was played on a piano. It is worth mentioning here that some consideration was given later to what would be an appropriate sound-source. In nearly every test, the piano, pre-recorded on tape, was used because of its very wide range of cultural associations. The sound is familiar enough to cause no surprise and it is not strongly identified with particular styles of music, unlike the guitar, or electronic tone-generators. It is also easily available. For these reasons this instrument was used throughout testing except when fine control of intensity was required. In this particular instance, the music was not pre-recorded, nor was the speed of playing controlled to a fine degree by the use of a metronome. This latter control along with the use of taped examples were seen to be desirable and were incorporated into later experiments.

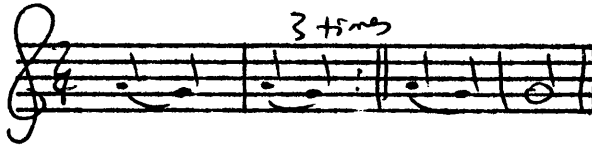
What follows is the complete written response of the children arranged in order of events derived from each basic unit. There are some gaps in description in the case of B, largely because of the difficulties described above. In each case the words in brackets are the descriptions of the event (the last two measures of the music example) and the words outside of brackets are accounts of the unaltered basic unit.

Ex. 3



- Timothy Tortoise walks along with head down then (looks around).
- Lesley A maid with her milk (and it slopped).
- Elizabeth It sounds like the word goodbye, goodbye.
 It sounds like a man walking forward past a lady,
 (then goes back).
- Alastair Thunder and lightening. (Thunder and lightening
 stopping and the rain stopping.)
- William A clock ticking. (A boy falls over and gets up again.)
- Mark Pendulum of a clock swaying. Clock chiming time.
 (The pendulum goes out of beat, the chiming stops
 and goes rough.)
- Wendy Calm, soft and gentle, a mother rocking her baby in the
 pram and the baby is crying. (Mother stops rocking
 her baby.)
- Michael It reminded me of an old house, very strange and eerie.
 (It sounded as if something had been turned right round.)
- Penelope A grandfather clock ticking. A cuckoo saying cuckoo.
 (The clock says tick tock back to front. Same with
 the cuckoo.)

Ex. 4

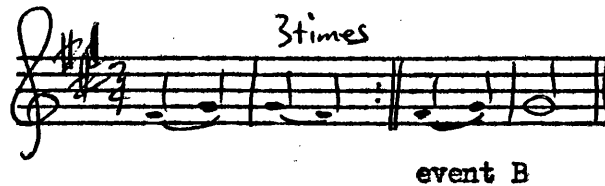


Event D

Timothy	(Stopped on one leg)
Kenneth	Hearning to count. (murdered)
(a substitute)	
Elizabeth	A heart beating. (It stops and the man dies.)
Alastair	Some people go on a bus then they go through a door. (And then fell out of the bus.)
William	Running along on a pavement (and you go down a slope).
Mark	Heart beats - man knocking nails in wood. (Heart stops beating suddenly - man knocks his fingers.)
Wendy	Person walking along. Heart beat. (Person stops. Heart misses a beat.)
Michael	It reminded me of two men having an argument (and at the end the quieter one wins).
Penelope	A person hopping and walking (stops because he hears a queer noise).

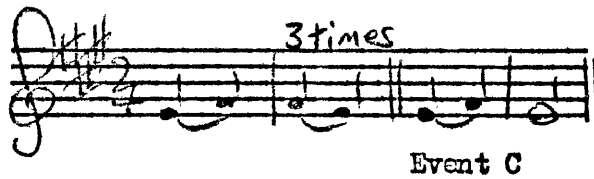
Second Basic Unit and its Events

Ex. 5



- Timothy Like a dark night, music going slow. (Jumps; louder at the end.)
- Lesley It is like a heart. (no comment)
- Elizabeth It sounds like a man who talks softly. It sounds like jumping (and you jump and stay there).
- Alastair The river splashed a boy. A baby crying. (no comment)
- William Running up a mound and down again. (Jumping onto a wall.)
- Mark People sing alleluia . (A choirboy goes out and finishes on the wrong note.)
- Wendy A horse clipping along (then stops).
- Michael Somebody was picking flowers (then had second thoughts).
- Penelope A cow's tail swaying (then it stops).

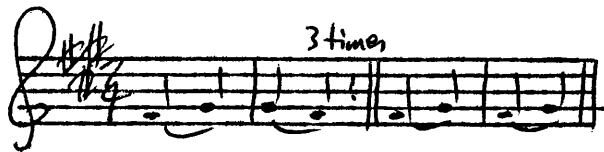
Ex. 6



Event C

- Timothy They turn their heads (until they stop).
- Lesley A man working (and he fell over).
- Elizabeth It feels like a sleepy tune at night: (at the end it stops and misses a note).
- Alastair Walking: (Boy fell over and then sat up).
- William A boy walking along (hears a snake and stops).
- Mark A boy walking slowly over rocks. Your pulse when you feel it. (The boy slips on a rock. Your pulse stops suddenly.)
- Wendy Trees swaying and river going along and a cows tail swinging. (River goes down a waterfall and the trees stop swaying.)
- Michael It sounded as if it was warning of a great disaster. (It sounded as if it had been cut short.)
- Penelope A pony walking slowly along a cobbled lane. (It stops walking slowly.)

Ex. 7



Third Basic Unit and its Events

Ex. 8



Event B

- Timothy A siren out of tune. The cat was still (but moved forward at the end and stopped.)
- Lesley A cow in the field and a bell on its neck: (a maid with her milk comes in at the end).
- Elizabeth It feels like the trees blowing in the wind. (It sounds like a bird singing in the morning.)
- Alastair There's two notes that go up and down. Walking.
Rivers on the rocks. (no comment)
- William Rocking, gentle, soothing. (Baby crying and its mother coming.)
- Mark Stepping, flowing, up down. (River going over rocks.)
- Wendy Calm and soft and gentle (then higher).
- Michael It sounded like a heart beat - the tick of a clock.
(It sounds as if a heart was beating and went rather funny.)
- Penelope I think it is going up and down softly and smoothly on two notes. (It goes more loudly and at the end is a sharp. It is still smooth and soft. It reminds me of the duet that Val Doonican did last ~~Saturday~~.) As well it sounds like a baby doll saying ma-ma, (then at the end goes queer and then stops).

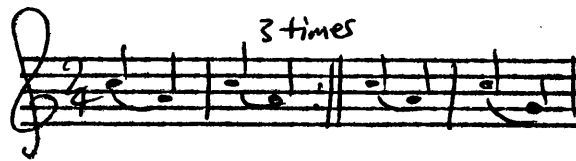
Ex. 9



Event C

- Timothy Skipping. (Higher at the end and stops.)
- Lesley A clock struck 5 O'clock and (then it struck six O'clock).
- Elizabeth It sounds like the school bell ringing, like the word dinner, like skipping in a beautiful meadow. (It sounds like a mother rocks a baby and then the baby goes to sleep.)
- Alastair It said Hello. (A boy going up some steps and then going through a door.)
- William A lady singing (and sings a very high note).
- Mark Music flowing. Jumping off a trampoline. (Music goes uphill, your jump gets higher.)
- Wendy Someone playing an instrument with two notes going back and forth. (She plays a different (?) with three notes going higher, much higher.)
- Michael It seemed to me as if it was pricking me and trying to tell me something. (As if a train in a dream had been going all right and then had gone off the track.)
- Penelope A smaller clock ticking. A man running slowly. (The man's foot stays up in the air.)

Ex. 10

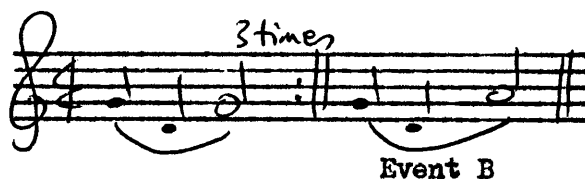


Event D

Timothy	Walking along eating sweets. (Then he finds no more left and stops.)
Kenneth	Run over. Plane. (Comes off. Run out)
Elizabeth	A clock ticking. (The clock stops and goes lower.)
Alastair	Going through some doors (and then slip).
William	Counting one two, one two (then one three).
Mark	A stone being thrown and landing. (Then he throws the stone and it lands on a man's head.)
Wendy	Someone swimming (and they do a different stroke).
Michael	It reminded me of a car going from side to side in a dangerous manner (and then the car begins to get steady again).
Penelope	A cow's tail swaying (then stops swaying as he is eating some grass).

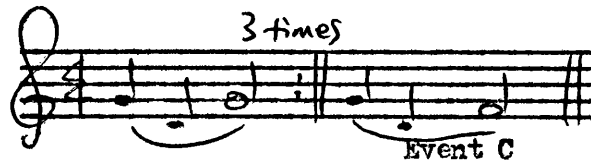
Fourth Basic Unit and its Events

Ex. 11



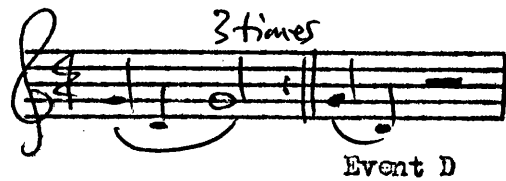
- Timothy Caterpillar going along slowly (suddenly jumps).
- Lesley The wind in the trees. (It makes me feel soft.)
- Elizabeth Like a bell ringing in a church. It sounds like
walking, (then they jump).
- Alastair There's a pussy cat in the well. Cutting down the
wood. (No comment.)
- William Running down a dell and up again. (Running up a hill
the other side.)
- Mark Bells ringing three tones. (Bells ringing. One
bell out of tune.)
- Wendy Hopping and skipping and hopping again. (Then running.)
- Michael It sounded as if someone was very pleased with
himself. (It sounded as if a regular routine had
been broken.)
- Penelope The mice who are blind in the song are scurrying about.
(Lying still in bed with a cat purring, the cat stops.)

Ex. 12



- Timothy (Goes slower and sadder at the end.)
- Lesley A cow and its tail (got caught in a fence).
A spider spinning a web and (the spider got tired).
- Elizabeth It sounds like the first two notes of Ding Dong Bell.
(A man in a church ringing the bell and then plays
a different note.)
- Alastair Noise of the rain. (Goes out of true.)
- William A boy running very fast (but then falls into a trap.).
- Mark Bells ringing, (bells go sharp).
Flowing heart beat, (heart stops suddenly).
People running.
- Wendy An army marching and trumpets blowing. (The army
stops. The trumpets blow a higher note.)
- Michael Three Blind Mice. (The music seemed to have stopped
as if it didn't know which way to go.)
- Penelope A camel walks three paces then turns round his
head and stops. He keeps on doing it.
(Instead of turning round his head he moves his foot.)

Ex. 13



Timothy Playing a pipe (but it goes out of tune and he stops suddenly).

Kenneth Bells of a church. (The rope broke.)

Elizabeth A lady tiptoeing into a room. A word like ding dong bell, pussy in the well. (The lady reaches the room and stops.)

Alastair A man walking to a well. (The high note does not finish at the end.)

William The song of ding dong bell. (Stopping suddenly in the middle of it.)

Mark Your pulse. Rain dropping. Flowing. A man bending down and coming up exercises. (The pulse stops suddenly. The rain stops and the clouds go over. The man falls over suddenly.)

Wendy Trees sway to, fro and to. It is like the beginning of the nursery song called Three Blind Mice. (Trees stop swaying to fro and to when it gets to fro.)

Michael It reminded me of mice going through a cornfield. It also sounded of a rag and bone man's call. (It reminded me of a man being murdered. He was just going to scream and then was killed.)

Penelope Reminds me of part of a song I've heard before. A piece of chalk writing on the blackboard. This piece of chalk is writing an N. (The piece of chalk stops as he has worn out so much after writing so many N's.)

We notice first of all the great variety of response. Some of the children hear the musical material as such, the names of notes, the going up and down etc. Others hear singing, bells, water or sirens. Some are able to provide several descriptions in different terms for the same unit and event. Naturally, the visual images and little stories that are made up to describe and provide analogies for the music tend to be about what interests the individual. Even so, we should notice the large number of words to do with the manner of movement. Suddenly, sharply, calmly, walking, running, rocking, going down and up, jumping, swaying, beating, clipping along, cut short, bouncing, swimming, skipping, flowing, scurrying, tiptoeing and hopping: all of these terms and many more are to do with the quality or style of movement. Hearts beat, people walk, run, skip and fall. A few find what we might call musical onomatopoeia: sirens, someone calling 'dinner', bells and wind blowing. There are the associations, musical and otherwise and now and then a hint that a child somehow feels 'soft' herself as a result of the music.

To test the degree of unanimity of the comments as they stand, a card-sorting technique was used. Each comment was typed on to a separate card with no identification of the unit heard except in a code on the back. A number of 'judges', post graduate music students, tried to sort out into two separate piles the cards carrying comments on events B and C for all four basic units. There was no clear indication of a distinctive difference here. However, there were signs in the pairing of cards for units C and D that the descriptions of the music were tending to form a distinctive pattern that could be discerned by the judges. The results were as follows, each judge being responsible for one basic unit and its derived events.

<u>Comments on</u> <u>units</u>	<u>Cards correctly grouped</u>	<u>Misplaced</u>
1C and 1D	12	6
2C and 2D	10	8
3C and 3D	14	4
4C and 4D	12	6
	<hr/> 48	<hr/> 24

The judges at this stage had no idea of the kind of musical elements involved. The following table shows the results when the musical events were heard beforehand by a different group of card-sorters.

<u>Comments on</u> <u>units</u>	<u>Cards correctly grouped</u>	<u>Misplaced</u>
1C and 1D	14	4
2C and 2D	14	4
3C and 3D	12	6
4C and 4D	14	4
	<hr/> 54	<hr/> 18

There seems to be some improvement when the judges know what they are looking for, which may indicate that the musical elements were 'meaningful' to them too. At this stage no statistical checks were used.

The easiest cards to group were those which carried 'technical' information ('the tune goes higher at the end'), and the most difficult were those which dealt with the music in a dramatic way ('an army marching and trumpets blowing').

At this stage the need for greater control over the manner of collecting response became apparent .

An interesting additional piece of information was gained by forcing the children to apply terms with emotional connotations to the musical events. Eight of the children (excluding the youngest, Timothy) were given the terms 'sad', 'happy', 'brave', 'pleased', 'frightened' and 'sorry'. They had to respond to four of the units, chosen for their apparent differences in character, using one of the given terms. Once again the brackets indicate the description of the event at the end of each unit, though the distinction was not made quite so often as before. Here are the eight chosen terms against the unit heard.

brave

happy

sad

frightened

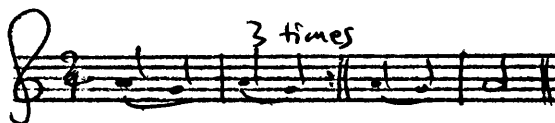
frightened (sad)

happy (brave)

happy

frightened

18



sad

brave

brave (happy)

brave (happy)

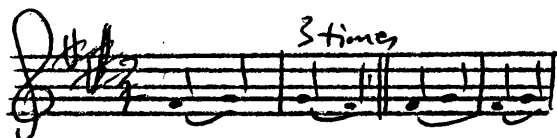
brave (pleased)

sorry (sad)

sorry (sad)

sad

21)



happy

sad

happy (sorry)

happy (pleased)

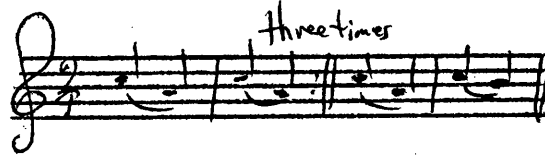
happy (pleased)

frightened

pleased

pleased

3B



sad

happy

frightened

brave

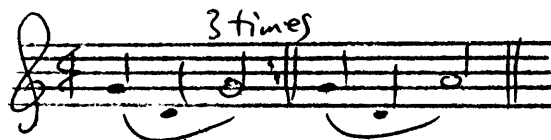
sorry (sad)

happy (pleased)

brave (frightened)

sorry (brave)

4B



The attempt to get a forced response in affective terms seems to result in nothing but confusion. We seem able to read any kind of feeling into even such epigrammatic musical events. And yet there does seem to be a pattern of response when the music is described in terms of quality of movement. It seems from this that that is the direction of travel if sense is to be made of the response of groups or individuals to music.

The next stage in the development of testing was to establish a way of getting information from subjects about musical events so that the results could be handled statistically and yet still allow a certain freedom of response. Extensions of the simple techniques so far

employed were considered along with more sophisticated instruments. Devices like the 'repertory grid' were thought to be not suitable because of the difficulty of the transitory nature of music.¹ It is hard for subjects to hold on to a musical concept and match it or contrast it with others without recording some judgement about each bit of music very soon after it takes place. Recall of music seems altogether more difficult than recall of verbal concepts. The most appropriate tool of measurement seemed to be the by now well-known 'semantic differential'.²

Osgood's work is familiar enough not to require a lengthy description here. It is based on bipolar qualifiers (opposite adjectives). Between the verbal opposites is assumed to be a graduated 'semantic space'. Osgood proposed and tested in great detail a seven-point scale, though other divisions, into five for example, could also have a use. Using a large number of scales on a large sample of concepts like 'father', 'your country', 'fear' and so on, and a factor analysis technique, three main factors were identified. 'Evaluation' includes such scales as good/bad and positive/negative; 'Potency' includes terms indicative of pressure and weight etc.; 'Activity' is self-explanatory. A great deal of work has since been carried out using these 'factors' (or variables?), and the semantic tool has been employed in many diagnostic and assessment situations.

Osgood cites the work of Tucker with paintings.³ Subjects were given one minute to look at a picture on a slide and then were asked to

¹ See Bannister, D. in New Horizons in Psychology. edit. Brian Foss, (Pelican, 1966) p. 361, ff.

² Osgood, Suci and Tannenbaum, The Measurement of Meaning. op. cit.

³ Osgood, op. cit.

describe it using a number of semantic scales. Accepting the three-factor idea, Tucker found that 'activity' accounted for 46% of the variance, 'evaluation' for 17% , and 'potency' for 10%. Non-artists gave more equal weight to each factor. At this stage of our experimental work it was decided to adopt the semantic differential and, for the time being, the three factors. One of the obvious problems was the transitory nature of musical experience which meant a limitation on the number of scales employed.

First Test

Nine semantic scales were used, three with high weightings for each factor. (Subjects are asked to check with a cross a position somewhere between the extremes that best described the musical event.)

E = evaluative; P = potency; and A = activity.

Item Number _____	Name _____
optimistic _____ : _____ : _____ : _____ : _____ : _____ : _____	pessimistic (E)
weak _____ : _____ : _____ : _____ : _____ : _____ : _____	strong (P)
light _____ : _____ : _____ : _____ : _____ : _____ : _____	heavy (P)
tense _____ : _____ : _____ : _____ : _____ : _____ : _____	relaxed (A)
positive _____ : _____ : _____ : _____ : _____ : _____ : _____	negative (E)
calm _____ : _____ : _____ : _____ : _____ : _____ : _____	excitable (A)
hard _____ : _____ : _____ : _____ : _____ : _____ : _____	soft (P)
active _____ : _____ : _____ : _____ : _____ : _____ : _____	passive (A)
good _____ : _____ : _____ : _____ : _____ : _____ : _____	bad (E)

(Subjects were not of course given any indication of the possible 'factors' involved.)

There were 25 different musical units in all, made up of five basic units and four events derived from each one. (The basic units were themselves included for description.) The order of presentation was randomised and the whole battery was recorded of tape at a speed of 66 pulses to the minute. In an attempt to present the units as wholes, which seemed desirable after the comments of the children during the preliminary test, the events were located in the last half of each unit and the whole thing was played three times. (This differs from the preliminary test when the event occurred only once, right at the end.) Melodic, rhythmic and intensity events were included along with a change of timbre, from piano to flute. The following are four examples.¹

The image contains four musical examples, each on a single staff with a treble clef and a key signature of one sharp (F#).
 Ex. 14: A melodic unit consisting of a sequence of eighth notes, marked 'mp' and '3 times'.
 Ex. 15: A rhythmic unit consisting of a sequence of eighth notes, marked 'mp' and '3 times'.
 Ex. 16: A timbre change unit, labeled 'FLUTE 3 times', marked 'mp'.
 Ex. 17: An intensity unit consisting of a sequence of eighth notes, marked 'mp' and 'f' (forte) with a crescendo hairpin, and '3 times'.

Altogether 40 music graduates were used as subjects, but since this was very much a pilot test, only samples of the scores were used.

First Sample

The scores of 5 subjects were taken and the mean difference from the 'neutral' position on the scale (i.e., the fourth place) was calculated for each 'factor' on each unit. The basic unit mean score was found to be lower than the rest and particularly so in comparison

¹

The music units are given in full in Appendix I.

with the mean scores for the events on the combined 'activity' scales, the largest difference here being between the basic unit and the melody event. (1.15 points of the scale)

Second Sample

A further sample of 10 subjects was examined with regard to scores in response to melody changes on the three 'activity' scales. This time no attention was paid to the 'neutral' fourth point on the scale but instead comparisons of a more relative kind were made between the basic units and their derived melody events. (Really the comparison is between an event and a 'non-event'.) Some statistical check is obviously necessary from this point onwards, to estimate the probability of results occurring by chance, and the mean difference from the basic unit/standard deviation/'t' test sequence seemed to offer the simplest way of doing this.

Table 1

	<u>mean difference</u>	<u>stan. dev.</u>	<u>'t'</u>	<u>prob.</u>
Tense/relaxed	0.56 to tense	1.73	2.29	< 5%
Active/passive	0.66 to active	1.68	2.78	< 1%
Excitable/calm	0.16 to excitable	1.89	0.6	N.S.

It seems very unlikely then, that the differences between the basic unit and the melody change on the first two scales could be a chance product.

In the case of excitable/calm, the difference was recalculated ignoring the direction of movement (ignoring the 'sign') and taking all the differences in any direction on the scales. The results indicated that the melody event was seen as being significantly different from the basic unit, though it is not possible to say in what way it is different.

	difference	stan. dev.	't'	prob.
Excitable/calm	1.38	1.89	7.6	practically nil.

Bearing in mind the very tiny musical changes involved, the results were seen as fairly encouraging. Certain elements of the test situation were felt to be in need of improvement. For example, there was doubt about the slow basic tempo (M.M. 66) and it was felt that a more average, 'everyday' kind of speed, Handel's tempo ordinaire, would be a better context in which to make judgements of this sort. A speed of M.M. 100 was decided upon and it was thought that a metronome should be in action throughout the recording to control the speed factor. Also it was felt that the repeating of the events along with the basic units might be responsible for a failure at times on the part of the subjects to differentiate them. Playing the event just once after establishing the basic unit, or norm, does seem to emphasise it more. With these amendments the second test was constructed.

Second Test

The musical elements of the first test were reduced to basic units, melody and rhythm events,¹ since these seemed to offer the most likely points of difference. The events were introduced once only, in the final measure of the unit. For example:

Ex. 18



The same 10 subjects whose scores were analysed previously were re-tested after a six-month interval under the same conditions as before. The material was recorded on tape using a piano, but rhythmic stability was ensured by a very faint metronome tick throughout at M.M. 100.

¹ With some changes. See Appendix I.

The same semantic form was used again and it was thought that by locating the musical event once only in the twelfth measure a clearer and more differentiated response would be more forthcoming.

During the test session, subjects were asked whether they found any of the scales difficult to use as descriptions of the music. The following scales were mentioned as being harder than the others.

<u>Scale</u>	<u>Number of subjects finding it difficult</u>
Good/bad	7
Hard/soft	5
Calm/excitable	2
Positive/negative	1
Active/passive	1
Optimistic/pessimistic	1

Thus there are 9 cases of 'evaluative scales' being found difficult, 5 cases of 'potency scales', and only 3 cases of 'activity scales'. The scales not mentioned at all were weak/strong, light/heavy, and tense/relaxed. Calm/excitable was found to be somewhat ambiguous. Subjects were not sure whether it implied that the music itself might be excitable or that it would excite the listener. It is perhaps interesting to notice that this confusion between the music and the response to it should tend to be felt on the most affectively charged scale.

In analysis, the mean difference between the basic units and the associated events was calculated. In every case there was a slight movement towards the 'positive' end of the scales when events were compared with the basic unit in this way. The average difference of all five units taken together was as follows.

	<u>Melody events</u>	<u>Rhythm events</u>
<u>Activity</u>	0.73	0.9
<u>Potency</u>	0.26	0.44
<u>Evaluative</u>	0.58	0.50

There were some very erratic scores however, particularly on the 'evaluative' scales and it was observed that two of the basic units had large and significant differences between them, largely due to Example 19 having a very high positive rating of its own.

Ex. 19



It became clear that, owing to the diverse nature of the basic units, any overall comparison between events and basic units was impossible. Likewise, the assumption that all 'activity' scales and so on could be taken together for analysis seemed not justified. There was good reason to treat each scale separately in order to see which scales were picking up differences of judgement and which were not. One fairly clear fact emerged however, from the use of the three-factor concept: 'activity' scales played the greatest part in separating out the events, as Table 2 shows. The 5 different basic units, A; B; C; D; E, are here treated individually. Only the probabilities of chance occurrence are given and N.S. indicates a statistically non-significant result.¹

¹ 'Significant' in these middle chapters is used in a statistical sense, signifying some cause beyond mere chance, and not in the way it has been employed in the earlier chapters.

Table 2

	<u>Activity</u>	<u>Potency</u>	<u>Evaluative</u>
<u>Unit A</u>			
Melody	5%	N.S.	N.S.
Rhythm	5%	N.S.	5%
<u>Unit B</u>			
Melody	5%	N.S.	N.S.
Rhythm	1%	N.S.	10%
<u>Unit C</u>			
Melody	2%	N.S.	10%
Rhythm	1%	N.S.	N.S.
<u>Unit D</u>			
Melody	N.S.	N.S.	N.S.
Rhythm	1%	N.S.	N.S.
<u>Unit E</u>			
Melody	N.S.	N.S.	N.S.
Rhythm	1%	2%	N.S.

Taken en bloc it does seem as though only the 'activity' terms manage to achieve usefulness, though at this stage the statistical techniques are relatively crude and concerned only with differences between basic units and their derived events. (The events are, in each case, seen as more 'positive' on all scales than the basic units.)

Table 3 shows the ultimate breakdown of results for the separate semantic scales. 25% of the results may be considered significant below the 5% level of probability. Means and probability are given when probability is 5% or less.

Table 3

	O/P	W/S	L/H	T/R	P/N	C/E	H/S	A/P	G/B
<u>Unit A</u>									
Melody	N.S.	N.S.	N.S.	N.S.	1.3	1.6	N.S.	1.2	N.S.
					5%	2%		5%	
Rhythm	N.S.	1.3	N.S.	N.S.	1.5	2.0	N.S.	2.8	N.S.
		5%			1%	1%		3%	
<u>Unit B</u>									
Melody	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rhythm	N.S.	N.S.	N.S.	N.S.	1.3	1.7	N.S.	1.6	N.S.
					5%	2%		1%	
<u>Unit C</u>									
Melody	2.2	N.S.	-1.4	N.S.	1.6	2.1	N.S.	2.2	N.S.
	1%		5%		2%	1%		.1%	
Rhythm	N.S.	N.S.	N.S.	N.S.	N.S.	1.5	N.S.	1.5	N.S.
						5%		1%	
<u>Unit D</u>									
Melody	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rhythm	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	2.0	N.S.
								.01%	
<u>Unit E</u>									
Melody	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rhythm	N.S.	N.S.	1.1	N.S.	N.S.	1.5	1.1	1.5	N.S.
			5%			5%	5%	5%	

Several guidelines may be found in the results of these pilot experiments. It seems that if we establish a basic context, or norm, what we have called the 'basic unit', it might be possible to get clear descriptions from groups of subjects using the semantic differential. There are strong enough indications that it is possible to discriminate one musical event from another, and to probe more carefully into this possibility would offer some help with the basic question of 'meaning' in music, for what can be seen as distinctive and different from other events in the same context can be said to have a conceptual quality.

The measurement of difference from the basic unit to events is a useful procedure, though later on we would want to look at differences between events as well. Clearly, better statistical tools are needed and of course, larger samples.

Certain semantic scales have been seen to be of particular value in picking up the differences, in particular 'active/passive', 'calm/excitable' and 'positive/negative'. Other scales, like 'tense/relaxed', and 'good/bad', seem to be of limited use. Activity and potency factors seem to be the most useful areas to concentrate on rather than evaluative descriptions.

In general, the subjects did not find the task so very difficult, and it does become easier with a little practice. Individual differences of performance are marked out for some attention later on, though the main objective is to establish the role of cognitive and conceptual activity in musical experience.

Certain un-looked-for phenomena were noted that became important later on in the experiments. In the melodic units there was more than a suggestion of the influence of tonal framework implied by the intervals

used. (Further information became available on this later.)

There were, however, still too many uncontrolled musical factors, particularly in the number of basic units employed, and it was felt that it would be better in the future to have only one or two units at the most with more derived events.

Another observation made on the results of this experiment was that the melody events that fall in pitch or stand still, produce no significant results at all. (See B, D, and E, on Table 3.) But the events that rise in pitch produced significant results in nearly 50% of the cases. Later on the same pattern was seen to apply to rhythm events. The slower events did not produce clear differences against the basic units though the quicker ones did. This caused a good deal of wasted time and thought and eventually led to the development of a theory that music provides listeners with a mixture of events that vary in distinctiveness and clarity. In the case of the more 'negative' events, the lower, slower bits of music, it was assumed that they somehow carried less precise 'meaning' and therefore produced a kind of 'free-for-all' among the subjects, each one having his own individual interpretation. This in turn led to the idea that music varied the conceptual load it carried, so that at one moment the listener was assimilating musical ideas of a very definite kind and the next instance, during the negative events, he was given opportunity to accommodate the import of the music 'to his schemata' (to use Piaget's term). This seemed to tie in quite well also with Bullough's 'aesthetic adaptation' and the 'oscillation between the object and the subject's self and his reactive feelings'.¹ Was the listener forced,

¹ Cf. Chapter Two.

as it were, into this kind of see-saw activity by the alternating positive/negative qualities of the music?

A closer look at standard deviations however, indicated that the 'scatter' of scoring for these 'negative' events was no greater than for the others. The explanation seems to be much simpler: namely that the basic units are, in effect, negative events themselves and therefore little difference would be recorded between them and the lower, slower events. However, although the elaborate theory came into existence for the wrong reasons, it does have a certain attractiveness about it and it does provide a starting-point for a slightly different kind of experiment, which is described as the theory is developed in Chapter Six. In a sense it was a stroke of luck to misunderstand the implications of these results: good fortune founded on muddle!

CHAPTER FOUR

The next stage in the development of the series of tests was to eliminate as far as possible the elements which to some degree had confounded the previous results. A more detailed and searching method of analysis was clearly required and samples of subjects would have to be taken from a wider population group. The use of tonal musical elements still seemed appropriate, and the intervals of tones, minor thirds and fourths were seen as basic materials because of their wide cultural contexts. Accordingly, the third test was constructed.

Third Test

Two basic units were used over a twelve-bar period.

Basic unit A (Ex. 20)




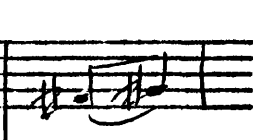

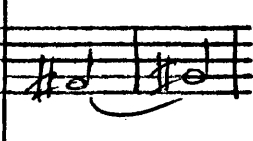
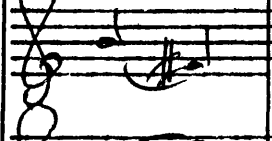

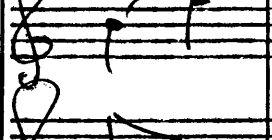



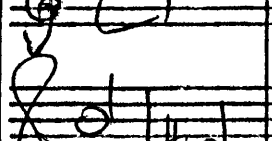
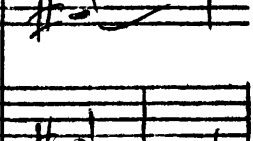

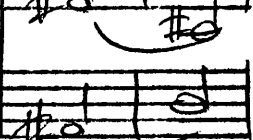


Basic unit B (Ex. 21)



Each basic unit was presented once without any event as part of the random sequence. The events were pre-recorded at M.M. 80, and it was hoped that the reduced speed might help to focus the slower events a little better and make more of them. (Later experiments show the basic speed not to matter a great deal, certainly not between M.M. 60 and M.M. 100.) The question of tempo is interesting, and Curt Sachs found that
in various

music cultures in different ethnic groups 'the regular stride of a man walking leisurely has provided the psychological basis.'. ¹ This implies, as Sachs says, a time unit, or beat of 76-80 M.M.

The musical events, which took place in the twelfth bars of each unit were as follows:

			<u>Unit A</u>	<u>Unit B</u>
1)	Quicker	Ex. 22		
2)	Slower	Ex. 23		
3)	Falling	Ex. 24		
4)	Rising	Ex. 25		
5)	Quicker & Falling	Ex. 26		
6)	Quicker & Rising	Ex. 27		
7)	Slower & Falling	Ex. 28		
8)	Slower & Rising	Ex. 29		

1

Sachs, C. Rhythm and Tempo. (Dent, 1953) p. 32.

A tempo fairly near to this universal 'norm' seems appropriate for this test material.

The terms used on the semantic differential form were those showing the greatest number of significant results in the previous tests, with the addition of other terms carrying, it was felt, fairly strong gestural and postural implications, terms that might be used to get people to take up certain attitudes or make a certain kind of movement. In addition to these, one outright and common pair of affective terms was used with the intention of seeing how the use of such a scale related to the others. (Happy/sad)

Item Number _____ Name _____ (Initials)

active _____ : _____ : _____ : _____ : _____ : _____ : _____ passive
 large _____ : _____ : _____ : _____ : _____ : _____ : _____ small
 happy _____ : _____ : _____ : _____ : _____ : _____ : _____ sad
 light _____ : _____ : _____ : _____ : _____ : _____ : _____ heavy
 positive _____ : _____ : _____ : _____ : _____ : _____ : _____ negative
 stiff _____ : _____ : _____ : _____ : _____ : _____ : _____ flexible
 calm _____ : _____ : _____ : _____ : _____ : _____ : _____ excited
 rounded _____ : _____ : _____ : _____ : _____ : _____ : _____ angular
 hard _____ : _____ : _____ : _____ : _____ : _____ : _____ soft
 outgoing _____ : _____ : _____ : _____ : _____ : _____ : _____ inward-looking

The test was carried out using 15 music graduates, none of whom had taken part in previous tests. In Table 4 only the statistically significant results are given, all of them below the 2% level of probability, except where 5% is indicated. The figure given is the mean difference score in terms of points on the scale between the basic units and their related events. To give an idea of ^{the} perceived quality of each event, the adjective is indicated towards which the score inclines.

Table 4

<u>Basic Unit A</u> (falling)		<u>Basic Unit B</u> (rising)	
<u>Event No. 1. Quicker</u>			
Active	(5%) 1.2		2.8
Happy			1.7
Light	1.4		2.0
Positive			3.0
Flexible	2.2		1.6
Excited			2.5
Soft	2.0		
Outgoing			2.0
<u>Event No. 2. Slower</u>			
Positive			2.2
Flexible	1.6		
Soft	1.2		0.7
<u>Event No. 3. Falling</u>			
Active		(5%) 1.2	
Large			2.0
Happy		(5%) 0.9	
Positive			2.1
Flexible	(5%) 1.1		
Calm	(5%) 0.9	Excited	(5%) 0.8
Angular	1.8		
<u>Event No. 4. Rising</u>			
Active	2.2		3.0
Large	(5%) 1.2		2.2
Happy	1.0		2.6
Light	2.8		1.6

Positive		3.5
Flexible	2.2	1.5
Excited		1.5
Outgoing	1.6	1.9

Event No. 5. Quicker & Falling

Active	2.6	3.4
Happy	(5%) 1.2	1.7
Light	1.9	1.1
Positive	0.9	3.2
Flexible	1.9	2.0
Excited	2.4	3.2
Hard		1.2
Outgoing	2.0	

Event No. 6. Quicker & Rising

Active	3.1	3.2
Large	3.4	1.4
Happy	1.5	2.4
Light		2.2
Positive	2.6	3.0
Flexible		1.7
Excited	2.3	3.0
Angular	2.2	
Hard	1.9	
Outgoing	2.5	2.0

Event No. 7. Slower & Falling

Large	1.6	2.2
Happy		(5%) 0.9
Heavy		(5%) 0.6
Positive		2.5
Calm	(5%) 1.2	

Event No. 8. Slower & Rising

Active		1.4
Large	1.9	2.4
Happy	1.3	2.0
Light	1.3	
Positive	2.1	3.1
Flexible		1.4
Outgoing	1.6	

Number of times (out of 16) scales produced significant differences

Active/passive	10
Large/small	9
Happy/sad	11
Light/heavy	9
Positive/negative	11
Stiff/flexible	10
Calm/excited	9
Rounded/angular	4
Hard/soft	5
Outgoing/inward-looking	7

Overall percentage scale productivity = 52%.

These results confirm the fact that small differences in music can be seen and understood, at least in terms of the most productive scales. There is a clear indication of negative and positive musical events, the quicker and rising elements belonging to the latter category. The 'semantic space' of Osgood, can be imagined as being dotted about with musical events identified by concepts of weight, size, flexibility, activity and so on. The affective scale, happy/sad, appeared to be of value too.

What is missing at this stage is a more precise statistical map to show the relationship between all events and not just between each event and the basic unit. This measurement has been a useful touchstone so far, but it is necessary to establish more information about the whole matrix of events in order to demonstrate the possibility of music being seen as a highly organised, articulated, meaningful symbol-structure. More sophisticated techniques of analysis become essential for this.

Because of the misconception mentioned at the end of the previous chapter, it seemed important at this stage to try to assess not only how the music is observed to be, but also how its effect upon the listener is seen. It was assumed (wrongly as it happened) that the negative events caused more random scoring owing to a degree of ambiguity. In this situation it would be expected that the listener's assessment of his own state of feeling would differ at times from his assessment of the character or behaviour of the music. At times, for example, both music and listener might share the same tendency towards 'active', but at other times, when the events were less positive, the music might be seen as 'passive' and the listener as 'active'. To test this idea out a little, the same 15 subjects were

asked, two months after the third test, to take part in another experiment.

Fourth Test

They were asked to listen to the same musical elements, under the same conditions as before. The same semantic differential forms were used. The difference in the situation was that instead of being asked to describe 'what the music does, or is like', they were invited to assess how it made them feel. (It might have been, for example, that such tiny bits of music would make music graduates feel only mild irritation!)

The results showed that they assessed their own feelings in exactly the same way that they previously described the music. The 'listeners' scoring was just a little more conservative than the more objective earlier descriptions. No significant difference could be found anywhere between 'what the music is like' and 'how it makes you feel'. Listeners, apparently, do seem to assume that a direct affective or empathetic relationship exists between themselves and music. While this result was pleasing in that it confirmed the previous work and eliminated finally the possibility of chance playing a very large part in the results, it shed no light on the problem of the music/listener relationship, except to show how easily feelings can be 'experienced' when presented in music, particularly feelings of weight, size, activity and so on.

In order to check further on the situation, a further stage in this experiment was devised. Nine quite different subjects, using the previously indicated check-forms and musical events, were asked to double-check on each semantic scale. This technique was used by Der Werff, who worked

on the concepts of 'self' and 'ideal self'.¹ He used the semantic differential but permitted subjects to check any scale twice if they so wished. Both checks were made at the same time and he took the distance between them as a divergency score. Werff found that making the checks together helped to focus the task better than separate scoring. Only 12% of the subjects used the single check alone. (His conclusion was that it is unhealthy people who do not manage to face up to the internal stress situation, with respect to self-image, by accepting the ~~ambigu~~ traits.)

This double-check technique was adapted for use in the music response situation. Subjects were asked to check each scale with an 'M' for 'what the music is like', and an 'L' for 'how it makes the listener feel'. It was, of course, possible to put both checks in the same space of the scale, thus indicating no difference at all. One subject, in fact, did this on every occasion, but the others thought that the distinction was valid though the task was hard to do.

The results may be briefly summarised as follows.

The combined differences over all units on each separate scale in terms of 'M' were all significant at below 1% level of probability.

The same was true of the 'L' scores, with the exception of stiff/flexible and hard/soft. All 'L' differences were somewhat smaller than the 'M' differences, as was the case previously. Once again, none of the differences between 'M' and 'L' scores were significant overall, and there seemed little point in separating the different units for closer analysis.²

¹ Van Der Werff, The Self and Ideal-Self Conflict. (Acta Psychologica, XXVI, 3) p. 249 - 256.

² Further details are shown in Appendix II.

It appeared then, that the situation in which 'M' and 'L' scores are made together simply replicated the situation in which they were made separately. However, a calculation was made of the number of times 'M' and 'L' were given separate ratings and this gave results indicating three groups of music events apparently depending on the degree of positiveness. Taking the combined basic unit scores as naught, the number of times subjects additionally separated 'M' from 'L' was as follows.

Table 5

Quicker and Rising	4	<u>Group 1</u>
Quicker	8	
Rising	16	<u>Group 2</u>
Quicker and Falling	20	
Slower and Rising	20	
Slower and Falling	27	<u>Group 3</u>
Slower	31	
Falling	33	

Although this pattern of scores appears to suggest very strongly that the negative type of events cause the listener to become, as it were, separated from the music, yet there is only slight statistical evidence for this view. The difference between Group 1 and Group 3 has a probability level of 5%. No great weight can then be placed on this feature, although it does indicate the possibility of further experimental work, which is described in chapter six.

It had become apparent by this stage that any analysis of response to musical events would have to take into account each semantic scale as a separate entity. This conclusion was reinforced by Warr and Knapper, who, in an assessment of the use of the semantic differential, inclined to the view that separate analysis of scales was preferable to assuming 'potency', 'evaluation' and 'activity' factors to be the ultimate analysis.¹ They found the semantic differential technique to be well supported by various research but also that correlations of various scales vary according to the concepts being evaluated or described. This indicates that an all-purpose form is not appropriate but that the scales to be used should be selected for the task in hand. They also came to the conclusion that rapid response to the offered concept (in this case the musical event) produced more consistent results than more carefully considered response.

Fortunately, the need to probe further into the use of the scales and the relationships between all events was made resolvable by the availability of a computer programme. It was then possible to carry out a much more rigorous analysis of the data.

The first stage was a stepwise discriminant function analysis. In this, the semantic scales (the scores on them) are evaluated via means, standard deviations and 'F' values to get them into a kind of ranking order of effectiveness. Then the scale with the highest 'F' value and lowest probability figure is analysed in detail for significant differences between any pair of music events. The next most effective scale is then combined with the first and all differences

¹ Warr, P.B., and Knapper, C., The Perception of People and Events.
(London, 1968) p. 60.

are again checked for significance level. This process continues until all scales are combined in the model. This cumulative approach makes it possible to assess the distinctive function of each scale and gives, when all scales are combined, an overall indication of significance.

The first analysis of this kind was carried out with the 'M' scores only of the previously described experiment, using only the 'falling' basic unit (Unit A) and its derived events. Table 6 shows the 'F' values of each scale where 2.80 indicates a 1% level of probability and 2.10 a 5% level. The second column shows the cumulative proportion of the total dispersion, the percentage of the difference achieved by each successive scale combination. The scales are listed in order of incorporation into the model.

<u>Table 6</u>	'F'	
Active/passive	18.77	66.949%
Outgoing/inward-looking	12.93	84.99%
Calm/excited	13.66	91.687%
Large/small	8.88	96.737%
Light/heavy	8.40	98.921%
Positive/negative	8.46	99.70%
Stiff/flexible	2.40	99.988%
Happy/sad	7.68	100%
Hard/soft	1.99 N.S.	
Rounded/angular	3.64	

Thus, active/passive takes nearly 67% of the dispersion of difference and a high degree of correlation of scales is indicated.

We might notice that the order in which the scales are presented to subjects on the check-form does not seem to influence their use. The first five scales in terms of high levels of significance are, on the check form, 1, 10, 7, 2 and 4.

All ten stages of combination in the analysis have indications of highly significant differences between the various pairs of units, but since the final combination is the most conservative in this respect, only this 'F' matrix is given in Table 7. In virtually every case, a significant difference at this stage is even more significant at an earlier level, before the 'weaker' scales have been added in. In Table 7 the 'F' values matrix is given, where a value of 2.6 has a probability of below 1% and 2.0 of 5%. Non-significant values are in brackets. (Q = Quicker, F = Falling etc.)

Table 7

	BU	Q	S	F	QF	QR	SF	SR
Q	5.92							
S	2.67	4.62						
F	3.52	3.47	2.08					
R	10.27	2.42	8.33	5.54				
QF	9.54	(1.85)	8.97	4.73	2.10			
QR	14.40	3.45	11.22	6.98	(0.97)	2.17		
SF	3.30	4.55	(0.68)	(0.71)	6.75	7.54	8.91	
SR	10.24	4.11	5.76	3.90	(1.77)	4.58	2.92	4.10

It is clear from this that the differences between the musical events are practically all validated, and that it is possible to have a consensus of opinion in description of even tiny musical events provided that a norm is established and the events can be heard in a stylistic framework.

All of the separate scales have a part to play in describing the events, with the exception of hard/soft. Table 8 shows the nine events on the nine significant scales as they were described and placed in order of degree of 'activity', 'largeness' and so on. Thus it is possible to see a rough ranking order of events from a positive to a more negative position on each scale.

Table 8

active	QR	QF	R	SR	Q	F	SF	S	BU	passive
large	QR	SR	R	F	SF	QF	S	Q	BU	small
happy	QR	R	SR	QF	Q	F	SF	BU	S	sad
light	R	QF	QR	SR	Q	BU	F	SF	S	heavy
positive	SR	QR	R	QF	SF	F	S	Q	BU	negative
flexible	SR	R	QR	QF	S	SF	F	Q	BU	stiff
excited	QR	QF	R	Q	SR	F	BU	SF	S	calm
outgoing	QR	R	SR	Q	QF	SF	S	F	BU	inward-looking
angular	QR	QF	R	SR	Q	F	BU	S	SF	rounded

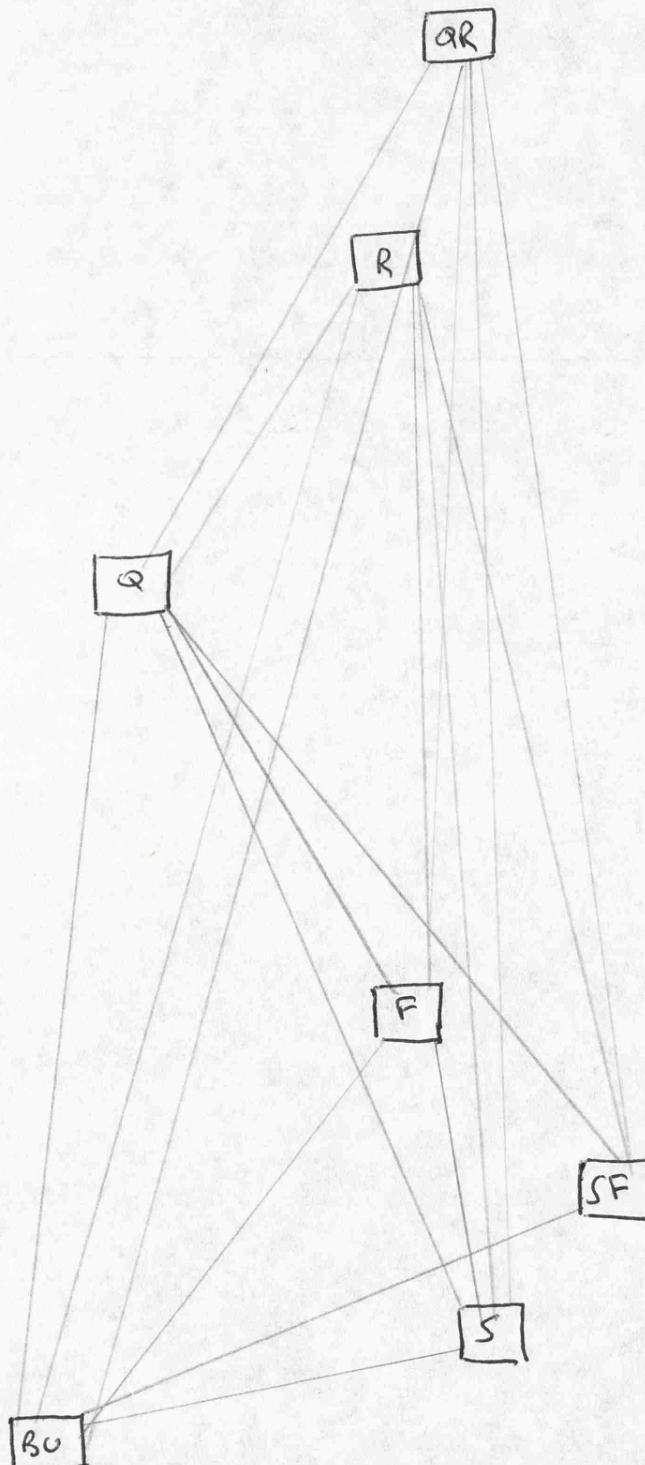
So, for example, the three most 'active' events are Quicker and Rising, Quicker and Falling, and Rising, while the three least 'active', or most 'passive' events are Slower and Falling, Slower, and the Basic Unit. This sort of pattern of description is present throughout the experimental work yet to be described and it does not seem necessary to replicate such information again unless it differs from the above in a radical way. It is more important to know that music events are seen as different entities and that concepts of movement, weight and size etc. can be employed to make the differentiation.

A second feature of the analysis was to estimate posterior probability. This is, in effect, a prediction of which out of the nine events was most likely to have been heard, based on the scoring of the subjects. This is quite a searching analysis, the results of which provide an indication of the sensitivity, not only of the instrument of measure, but also of the subjects, especially when the smallness of the musical variation is taken into account. In this case, the prediction from the scores as to which of the musical events was heard was correct 73% of the time, a very high figure indeed.

The same total analysis was then carried out on the 'M' scores for the second of the basic units and its attendant events. (Unit B) The results were identical except for a slight drop in 'F' values and marginally less significant differences. A 60% level of posterior probability was achieved. All scales were once again found to be productive of differences except hard/soft, which might possibly indicate the inappropriate nature of tactile concepts to musical description. The order of scale combination was different, the first five being 3,2,1,4,8, on the check-form. The slightly less striking result may be explained in terms of a more positive Basic Unit. The rising unit (Unit B) is less able to represent the negative qualities against which the other events are seen.

One further step of analysis was taken with the first set of results. To enable a visual model to be constructed, a two-dimensional graph was calculated from canonical variables. In effect, the scales are combined in the two ways that maximise differences and the result is a picture of the relative position of the various events in two dimensions. The scales thus cease to exist individually and become

fused together to give a global description of the events in 'semantic space'. (Lines joining events indicate significant differences.) To avoid confusion, QF and SR are not plotted.



The model shows the clustering into two main groups of what we have called the positive (at the top) and negative events. The basic unit is slightly detached from the other negative events and at the furthest extremity from the positive group. It also shows the relative distances between the events and that, with the exception of Slower to Slower/Falling, Falling to Slower/Falling and Rising to Quicker/Rising, all differences are significant. Later experiments will use larger and different samples of subjects to reinforce these results, and it is beyond question that with music we are dealing with a highly articulated medium of communication, capable of making fine distinctions. We would go on to argue that, because it is possible to describe these differences in terms of weight, flexibility, activity and so on, there is a reasonable case for suggesting that what is being communicated has to do with the attitudes, or postural schemata that attend emotions, or for that matter any sentient process. The growth and perpetual change of felt experience might then be said to be the 'subject' of music because, although our model picks up a snap-shot or still frame of music description, music itself is always moving on, changing and evolving as it goes. Some further evidence on this becomes available at the end of this chapter.

Fifth Test

Several practical points were noted during the experience of the previous experiment. Correlations were calculated that indicated the overlapping of some scales with others in their descriptive function. In the case of these particular music events the number of scales might then be reduced, thus making the task of the subject easier, since he has to remember an event while working through the scales. It also appeared that certain scales might be more effective

in describing certain groups of events, for example, rhythm changes, while others would be more appropriate to different groups of events. Further information on this appeared to be desirable. Also needed was some specific evidence on the relationship of an affective type of scale, like happy/sad, with the other 'postural' type of terms. Consequently, the following check-form was devised which met these points and kept in the scales already found to be of value.

Item Number _____	Name _____
active _____	passive _____
large _____	small _____
light _____	heavy _____
stiff _____	flexible _____
outgoing _____	inward-looking _____
happy _____	sad _____

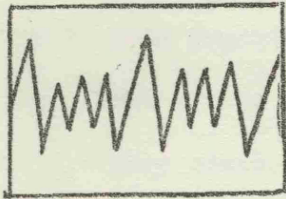
It was also seen to be essential to use non-musical subjects and children in particular and it was felt that an alternative check-form that did not involve verbal concepts might be easier especially for the younger children. Accordingly, an entirely new form of instrument came into being; the 'diagrammatic differential'. An artist produced several representational and abstract drawings to parallel the verbal scales. Out of these, five were chosen by independent judges as most resembling the original terms on the form above. (Happy/sad was not included because the abstract drawings were favoured and it is difficult to conceive of an affective situation in those terms.)

(The form originally has the usual seven spaces but is here reduced for reasons of space.)

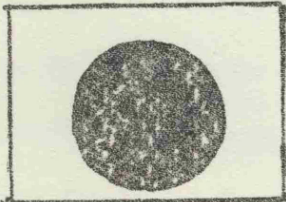
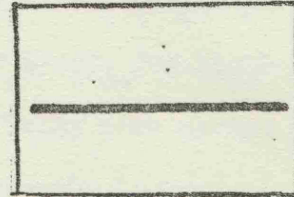
The validity of this form in terms of the more usual semantic version is something that has to be checked, and this aspect is included in the analysis of the data.

No. _____

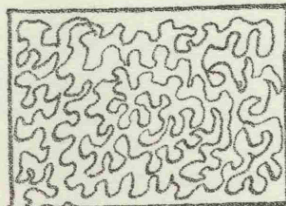
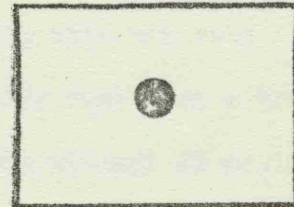
Name _____



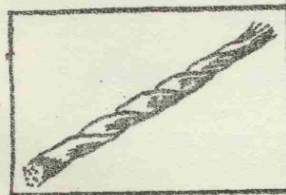
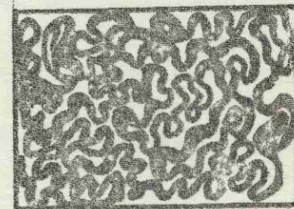
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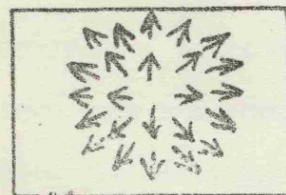
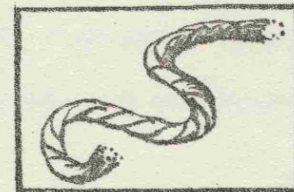
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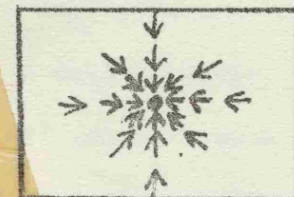
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to enable subjects to become familiar with the task. (In all tests

The validity of this form in terms of the more usual semantic version is something that has to be checked, and this aspect is included in the analysis of the data.

As far as the musical elements were concerned, it had been observed by some of the previous subjects that the manner of ending was of some importance. In the case of a Quicker event, for instance, the effect of the silence that follows is felt as being more abrupt than in a Slower event. The cessation of a unit can clearly be seen as more or less sudden, depending, as it were, on the velocity of the music. One subject said, for example, that the basic units, although seen as fairly passive events, tended to make the listener feel more active because they stopped before 'doing anything'. Some attempt at controlling and examining the effect of the manner of ending seemed necessary therefore, as part of the experimental set-up of the fifth test.

Two main ways of ending units were seen to be relevant. The first was simply to stop as before: the second was to repeat the event over and over again and at the same time to fade out the sound level gradually to nothing. This implied having a finely graded sound source with a calibrated intensity control. A small electronic organ at 8' pitch was therefore used to pre-record the music. A calibrated dial made the controlled fade-out possible.

A falling and a rising basic unit, as before, were the basis of the musical material, although only the former would eventually be analysed. There were no melody events, but for each unit of music there were six events in all: Basic Unit, Slower, and Quicker, each of these played stopping as before and also fading out gradually. Two 'trial' or practice units, taken out of the main test, were played first to enable subjects to become familiar with the task. (In all tests

practice was given at the start in the use of the check-form by having verbal concepts evaluated.) All in all then, the subjects heard 14 events in random order.

Initially, two groups of subjects were used. Both groups were a normal, musically unselected class of girls and boys at a comprehensive school in a 'new' town. Group I was a class of eleven-twelve year-olds, 13 boys and 13 girls. Group II was a class of thirteen-fourteen year-olds, 26 in all, from the third band of the streaming system in the school. In effect this meant that Group II were rated as just above remedial teaching level. Because of the standard of work and attitude of the respective groups and the usual adolescent apathy towards music in school, it would have been expected that Group I would manage the task better than Group II.

Half of each group used the semantic check-form and half used the 'diagrammatic' form.

Because of the desirability of comparing two classes of the same age-group but of different abilities in general school performance, a Group III was also used, consisting of 29 boys and girls in the older age-group and the top ability band.

The test was administered as before, in that the subjects were asked to use the scales on the form to describe what the music was like or what it did. It was thought that a second hearing of some of the earlier items might help and the groups were asked if they wished to hear events a second time. In fact they asked to re-hear the first few items, but after that seemed to be able to make a judgement on one hearing.

A multivariate analysis was carried out to determine the influence of ability, sex, age and the kind of check-form being used. Also analysed in this way were the effects of speed events and manner of ending.

Ability, age and sex effects are dealt with in Chapter Five, but in the first analysis groups I and II were assessed as to use of the different check-forms. (Excluding the scale happy/sad which only featured on the semantic version.) No overall significant difference in the use of forms was found, and out of the thirty variables only one of the scales of one event reached even a 5% level of probability, which is to be expected by chance. A similar analysis combining groups II and III produced similar results. We are then able to say that there is no effective difference at all in the use of the 'diagrammatic' check-form compared with the equivalent semantic scales. The use of either version is therefore indicated at least down to the age of eleven and the possibilities of using the diagrammatic form with younger children seem quite good.

Using the combined groups I and II, the effects of speed and ending were then analysed. Differences between events were found to be highly significant. Of some interest was the fact that the scales were used differently for speed as compared with ending. The following table of 'F' values will make this clear.

Table 9

<u>Speed</u>	<u>Scale</u>	<u>Ending</u>
117.12	Active/passive	1.13
8.32	Large/small	53.54
0.20	Light/heavy	38.34
15.39	Stiff/flexible	14.73
9.08	Outgoing/inward-looking	0.03

The larger the 'F' value the more highly significant the differences and no value below 2.99 can be seen as significant even at the 5% level.

Thus, for the speed effect, active/passive, stiff/flexible, and outgoing/inward-looking are the three most significant scales, while for the ending effect, the other two scales are found to be useful tools of description. Stiff/flexible and large/small seem to overlap to some extent both types of event. Active/passive, as is very often the case in all experiments, has an enormous 'F' value, in terms of speed changes, but no significance at all for ending.

It seems that music is in some way 'multi-dimensional', requiring different sets of terms to describe different types of event. In fact, the distinction brought out in this analysis seems related to the 'activity' and 'potency' factors of Osgood.

The scores of each of the three groups were next analysed separately to check on levels of significance between units, to find the posterior probability and to map out a two-dimensional model as before.

Group I

Table 10 Cumulative proportion of dispersion

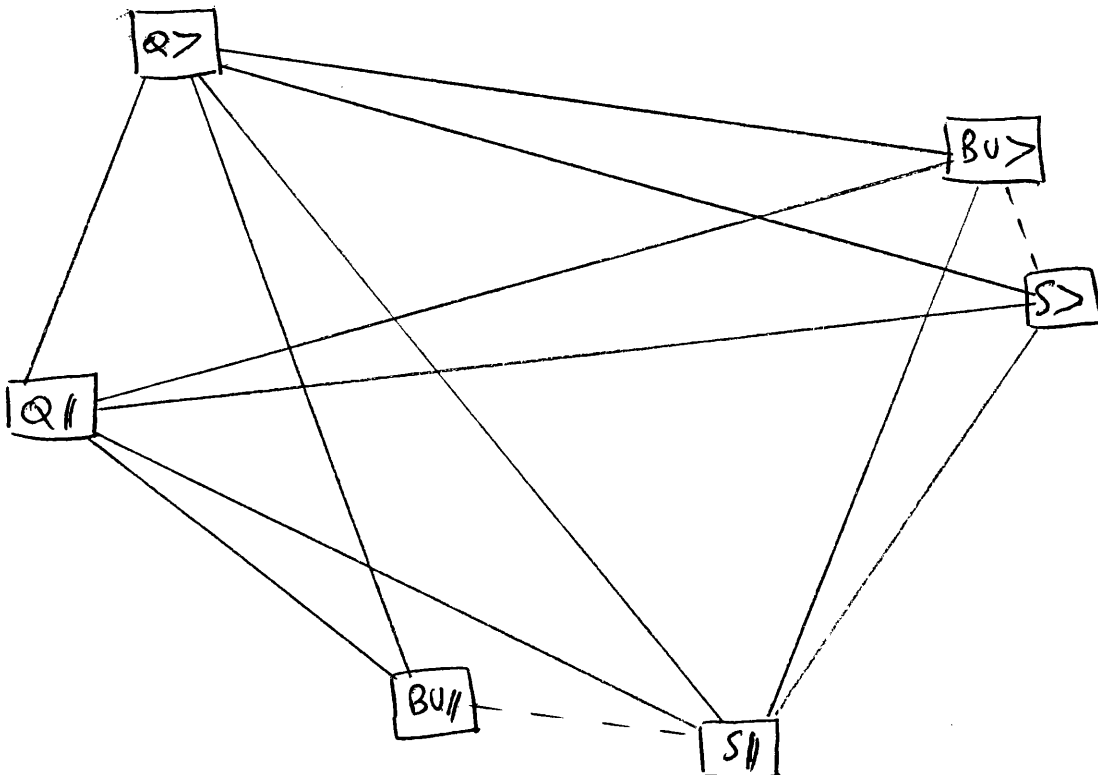
Active/passive	69.644%
Large/small	97.996%
Light/heavy	99.491%
Outgoing/inward-looking	99.981½
Stiff/flexible	100%

Table 11 'F' matrix of the overall combination

	BU Fade	BU Stop	S Fade	S Stop	Q Fade
BU Stop	8.54				
S Fade	(0.88)	8.17			
S Stop	5.72	(1.44)	4.54		
Q Fade	10.36	7.46	14.18	12.20	
Q Stop	15.04	3.77	17.00	9.23	2.88

In Table 11 3.02 has a probability of 1% and 2.21 of 5%. Only two differences are thus not significant, both between the Basic Unit and Slower.

The plotting of the relationship of the units on a graph is as follows.



// = Stop and > = Fade. Dotted lines indicate that significance was not established between those units. We notice that the right-hand side has the negative and the left-hand side the positive type of events, and that a further dimension given by a different scale combination shows the fading and stopping units towards the top and bottom respectively.

The prediction of events from scores (posterior probability) was correct in 44% of the cases. This seems quite high, bearing in mind the similarity between many of the events and the small musical scale of the elements involved. It seems from these results that children at eleven years are certainly able to 'understand' music and differentiate between these sort of events.

Group II

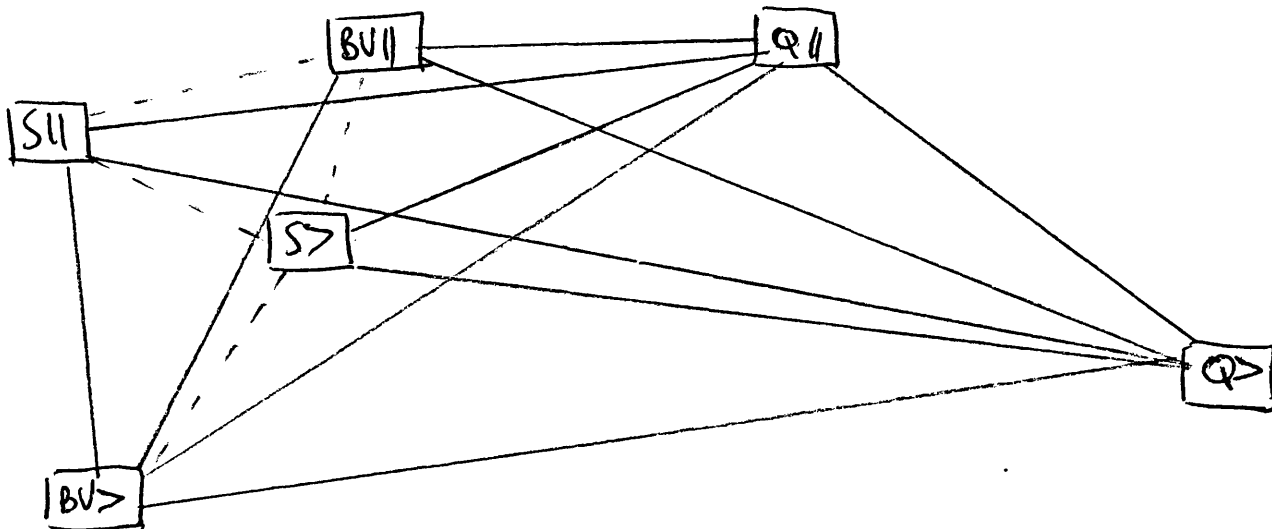
<u>Table 12</u>	<u>Cumulative proportion of dispersion</u>
Active/passive	83.285%
Stiff/flexible	97.127%
Large/small	99.721%
Light/heavy	99.989%
Outgoing/inward-looking	100%

Table 13 'F' matrix of the overall combination

	BU Fade	BU Stop	S Fade	S Stop	Q Fade
BU Stop	4.79				
S Fade	(1.59)	(1.72)			
S Stop	2.43	(2.09)	(1.33)		
Q Fade	20.65	12.79	14.29	22.19	
Q Stop	11.45	3.44	5.10	8.77	4.49

Once again, the only indication of non-significance is in the case of differences between the 'negative' events, when 3.02 has a probability of 1% and 2.21 of 5%. There seems to be a slightly less confident attitude about this group, older but less able than the previous one, but age and ability is taken into account elsewhere.

The relationship of the units on the two canonical variables are as follows.



Once again, the two quicker units are opposite the others in the horizontal plane and the fading and stopping units are seen apart in the vertical plane. We might notice the very high 'F' values for the quicker events and the bunching of the negative events in a tighter group than seen in the earlier model for the music graduates. (p110)

Posterior probability was calculated, and showed a correct prediction in 53% of the cases.

Group IIITable 14 Cumulative proportion of dispersion

Active/passive	73.008%
Large/small	98.500%
Stiff/flexible	99.198%
Light/heavy	99.643%
Outgoing/inward-looking	100%

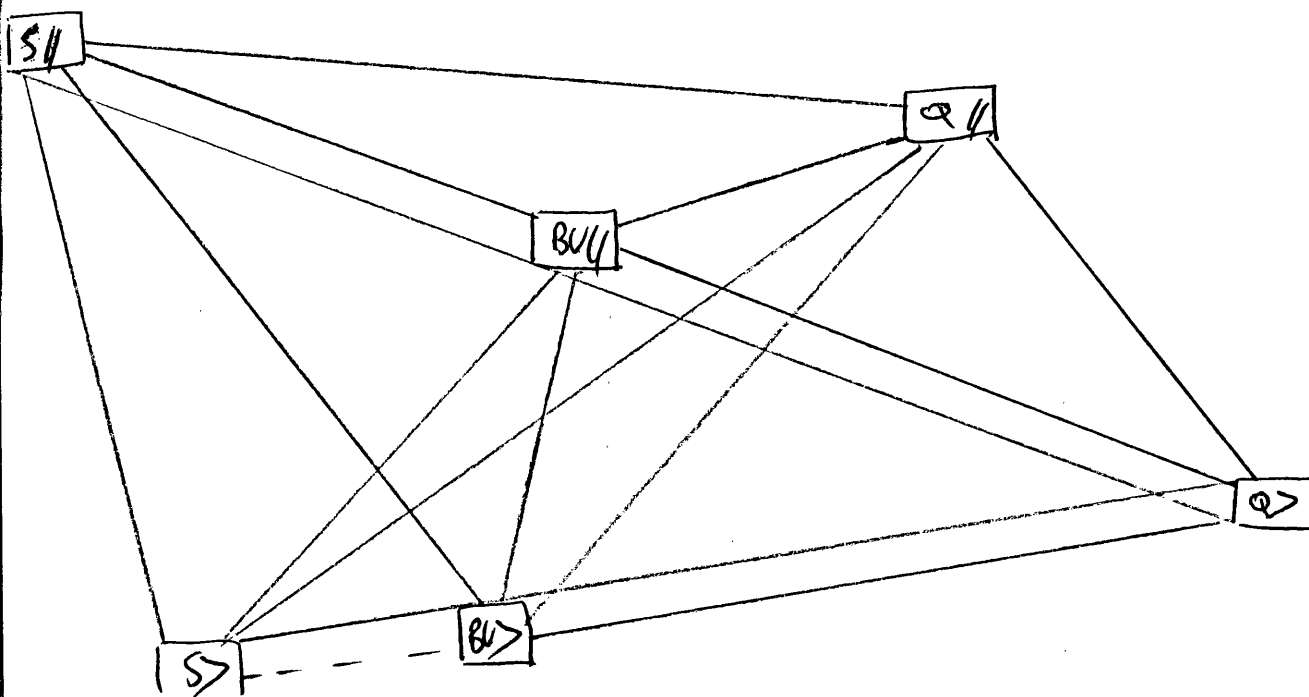
The scale active/passive certainly seems to be a very positive indicator of musical difference, though it might be noticed that it happens to be the first scale on the check-form.

Table 15 'F' matrix of the overall combination

	BU Fade	BU Stop	S Fade	S Stop	Q Fade
BU Stop	4.34				
S Fade	(1.60)	7.80			
S Stop	10.91	7.10	8.95		
Q Fade	15.21	12.42	25.37	36.94	
Q Stop	12.42	3.94	20.21	19.02	5.74

These are once again very high values, when 3.02 has a probability of 1%. The level of predictability for this group was even higher than the others - 60%. The results are conclusive: music is a vehicle of communication in a very precise kind of way.

The graph shows once again the polarity of the quicker events against the others and the different planes for the fading and stopping events.



One further analysis was completed on the data available from these three groups. The directly emotive scale, happy/sad, had to be seen in relationship to the other scales. Accordingly, the 26 subjects from Groups I, and II, who had used the ordinary semantic differential type of check-form were taken as a single group and a correlation made of the emotive scale with the other five. Fairly high correlations were expected between happy/sad and at least one other scale, and a fairly high level of correlation had already been observed on the 'within groups' analysis. In fact, the analysis proved to surpass the prediction.

Table 16 shows the correlation matrix for all scales over all events, when 0.2 gives a 1% level of probability.

Table 16 Correlation matrix for the six scales over all events

	A/P	L/S	L/H	S/F	O/I	H/Sd.
L/S	(0.17)					
L/H	0.22	-0.41				
S/F	-0.35	(0.17)	-0.57			
O/I	0.44	(0.17)	0.27	-0.28		
H/Sad	<u>0.70</u>	(0.10)	<u>0.30</u>	<u>0.37</u>	<u>0.57</u>	1.00

The negative correlations are what one would expect. For example, active/passive really correlates with flexible/stiff, which had been reversed on the check-form into stiff/flexible to prevent automatic use of one side of the form as 'negative' and the other side as 'positive'. Lightness correlates with flexibility and largeness with heaviness, a pretty obvious association, especially in terms of movement and posture. We are particularly interested in happy/sad and its correlates and might notice the very high measure of correlation with active/passive and a pretty high figure for all other correlations with the exception of large/small.

There are implications here for the theory of music being advanced in this thesis. It is possible to say that, whereas Cooke has demonstrated the use of certain turns of phrase in western music to denote global emotional concepts, particularly sadness and joy, this study has atomised not only the musical elements but also the components that make up in music the affective tone.¹ The above correlations bear this out. The correlation of happy sad with the other scales suggests that sadness, for instance, is characterized in music via

¹ Cooke, D., op. cit.

at least the following components: passivity, stiffness, heaviness, and inward-lookingness. These we might regard as some of the postural elements of the affective condition we call 'sadness'. To alter in some degree one or more of these components is to present in the music or experience in life a different kind of sadness. We can argue that it is in this manner that music is able to present to us particular feelings by displaying the postural attributes associated with them. We are already well aware of day-to-day expressions that try to express how we feel, or how someone else feels: 'bubbling over' with happiness, 'weighed down' with care or sorrow, 'heavy' with apprehension, 'stiff' with fright or worry, 'light as air' and so on are but a few examples. Music appears to deal with these qualifiers. These attitudes and presentations of weight, motion, size and pressure, are the schemata, the 'ghosts' (literally) of affective life. Music communicates constructs of this sort, ideas about and presentations of feelings through, at any rate, its tonal and rhythmic materials. Small wonder then, that people can recognise emotions in music and that sometimes they go on to associate the presented state of affairs with an actual associated life-situation, and thus lose grip on the on-going musical articulation. The ability to enjoy the play of schemata can be stifled to some extent by the tendency to give the 'ghosts' flesh and blood.

Why is it then that emotions and feelings as such make such shaky ground from which to describe music and its effects.¹ Part of the answer may well be that any postural implications located in music may be present in a wide range of feelings. For example, we may curl ourselves up into a ball because we are afraid or because we are

¹ Cf. chapter two.

content. The presentation of 'curling', if it can be presented in music, might bring to mind either of these situations and many more, thus resulting in confusing descriptions. A great deal depends on the combination and relationships, the general pattern of the feeling components, and it is perfectly possible to find an emotion in music and miss the point. We might notice the interesting case of Schumann who heard in Mozart's G Minor Symphony a degree of gaiety not usually associated with this work. Schumann may well be as 'right' as those who find the work 'tragic', for ambiguity is part of the fascination of art and music for us. What both parties really mean is that the components (some of them at least) of tragedy or gaiety can be found in the music. We have to learn to listen to the components and not to jump to quick conclusions about 'emotions'. Music is very subtle and informative for those who attend properly.

Note: A group of students tried to place emotional concepts at the extremes of the diagrammatic type of scale. Hate, happiness, joy and anger were all seen as 'active' and several opposite ends of the scales had the same emotion allocated to them. This serves to demonstrate the fact that feeling 'components' tend to be transferable from one affective condition to another, and thus why music, which apparently deals in such components, is likely to be misunderstood and misrepresented if attempts are made to 'label' emotions that appear to arise in it.

CHAPTER FIVE

As part of the multivariate analysis of the scores of the three groups of subjects dealt with earlier, the effects of sex, ability (in terms of the school's assessment), and age, was calculated in addition to the use of the check-form. Group I and Group II were taken first. Absolutely no difference was significant with regard to the sex of the subjects. Boys and girls seemed to have the same way of responding to the music and of using the semantic or diagrammatic differential. Groups II and III (both in the 13+ age-group) were also taken and once again no significant difference emerged, either overall or for any individual scale on any particular unit. The conclusion must be therefore, that the understanding of the communicative aspects of music is common to both sexes in both the pre-puberty period and in early adolescence.¹

Groups II and III were analysed also for the effects of 'ability' in general school terms. Group II was in the lowest school 'band', just above 'remedial' level, and were considered to be particularly less able in terms of academic achievement than Group III, who were in the top band. The overall 'F' value was significant at a 5% level of probability, and the following table shows that in the detailed analysis of each scale for each unit of music there are six instances out of thirty where the level is below 5%.

¹ Details are given in Appendix II.

Table 17 'F' values for 'ability' effects

	A/P	L/S	L/H	S/F	O/I
EU Fade	1.58	0.20	0.36	0.52	0.37
EU Stop	1.64	0.08	<u>4.06</u>	0.02	0.02
S Fade	<u>6.93</u>	1.50	2.17	0.04	1.02
S Stop	0.60	<u>5.63</u>	0.35	1.03	0.12
Q Fade	<u>5.87</u>	<u>8.39</u>	0.97	<u>6.07</u>	2.24
Q Stop	0.62	0.93	0.85	1.42	0.92

(4.00 indicates a 5% level of probability and 7.08 a 1% level.)

There is then some very slight evidence for assuming that ability plays a part in the process of grasping the significance of musical concepts of the sort presented in these tests.

A similar check was made for the effects of age, using the scores of Groups I and II. These groups are of course different in ability too, but as a rough preliminary guide it seemed reasonable to look at age difference. (11-12 and 13-14 years old respectively)

An overall 'F' value indicated no significant result on this occasion, though the detailed analysis did show on three occasions a significant result at a very low level of probability. Two of these were for the event Quicker/Fading, as follows.

Table 18

	A/P	L/S	L/H	S/F	O/I
Q Fade	<u>12.65</u>	2.04	0.56	<u>6.04</u>	2.91

It can be seen by referring to tables 17 and 18, that the same event, Quicker/Fading, was responsible in both ability and age effects for producing differences between the groups of subjects. We might notice

that the active/passive scale is outstanding in its effect. This can be traced back to the unusual result of the average score of group II boys on this scale being 1.5 and the average score for girls being 1.00. Every girl in this group gave the extreme 'active' description to this particular event. With a standard deviation so low, any comparison with other groups is likely to show a difference.

At this stage it became apparent that an investigation of response lower down the age-range in schools would be of value.¹ In the case of ability, practically the whole range from the school population (in the comprehensive school) was covered by the samples of subjects already used, but only a very small part of the age-range had been investigated. It was decided for this purpose to use only the diagrammatic check-form, since no difference had been found between it and the semantic version and since younger children, it was felt, might find it easier.

Sixth Test

A shorter form of test seemed desirable for younger children. Accordingly, only the 'falling' basic unit and its events was employed. The clearest available events were devised inside of the usual strict framework of control. (See examples 30 - 39) It was decided to re-adopt a metronome speed setting of 100 beats per minute to assist in the shortening process and to prevent boredom or complete satiation.

The basic unit, (example 30) is heard before every event takes place and two preliminary trials are made as practice items. In addition the children were given an opportunity to talk about what they saw on the check-forms before starting and they also had a practice run on the concept of 'an angry elephant'.

¹ A subsequent analysis of the age effect for Groups I and III revealed no significant difference.

Basic Unit

Ex. 30



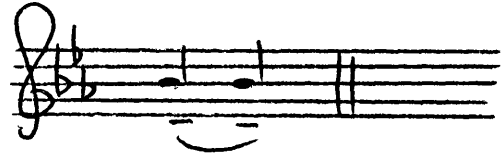
First Trial

Ex. 31



Second Trial

Ex. 32



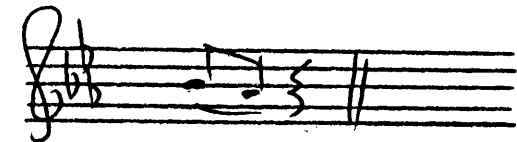
Slower/Falling

Ex. 33



Quicker

Ex. 34



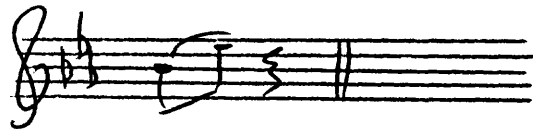
Slower

Ex. 35



Quicker/Rising

Ex. 36



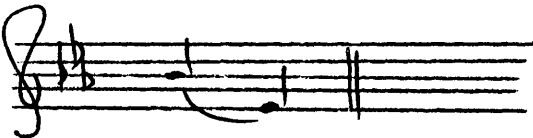
Basic Unit (no event)

Ex. 37



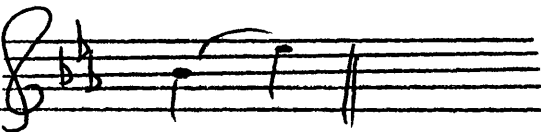
Falling

Ex. 38



Rising

Ex. 39



This was the actual randomised order of the test.

Group I in this test was made up of 30 boys and girls aged 9 - 10. They were a normal, unselected group of children making up a class in a junior school in an area where a fairly mixed social background exists. Table 19 gives the significance levels over all the events in terms of 'F' values, where a value of 2.80 gives a 1% level of probability. The five scales will be named as though they were on the ordinary semantic form, although it must be remembered that the diagrammatic version was being used. (See page 113.)

Table 19

Active/passive	11.62
Large/small	14.25
Light/heavy	11.80
Stiff/flexible	6.00
Outgoing/inward-looking	(1.14)

Thus all scales are highly productive of significant differences between the units except the last, and even then a 10% level is indicated. Table 20 gives the proportion of difference as each scale is taken into the model.

Table 20

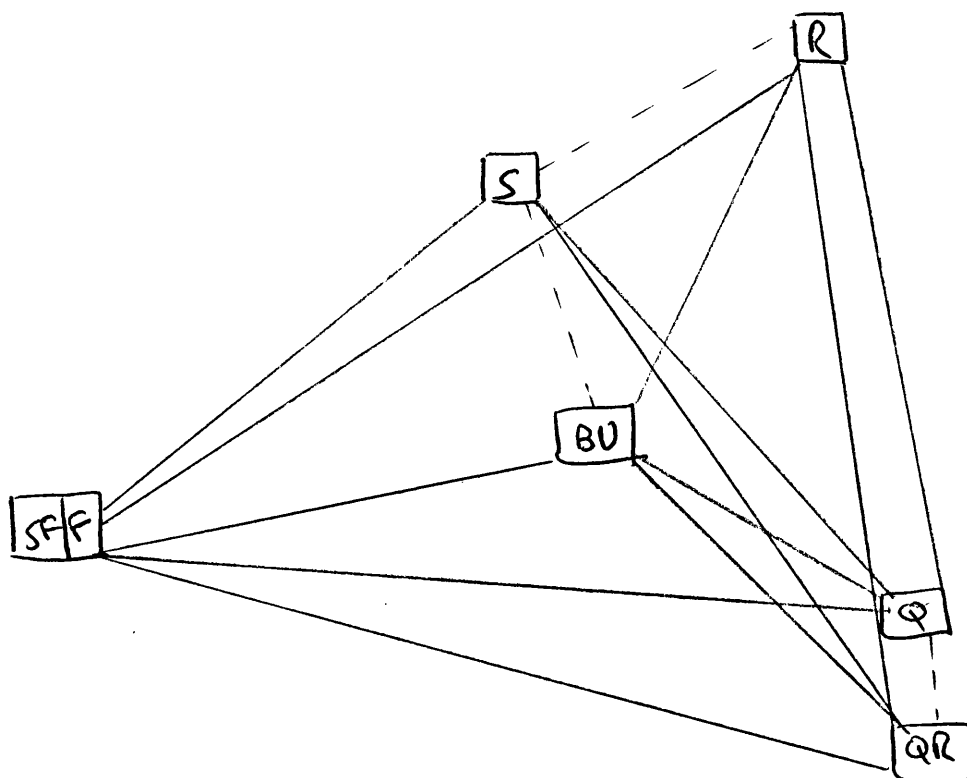
Cumulative proportion of dispersion

Large/small	69.057%
Active/passive	97.150%
Light/heavy	99.185%
Stiff/flexible	99.973%
Outgoing/inward-looking	100%

Table 21 'F' matrix of the overall combination

	BU	Q	S	R	F	QR	SF
Q	3.64						
S	(1.57)	7.55					
R	3.32	7.21	(1.66)				
F	5.31	12.65	5.36	12.67			
QR	2.24	(0.32)	5.22	4.67	11.44		
SF	5.09	12.71	5.53	12.68	(0.32)	11.55	

3.02 has a level of probability of 1% and 2.21 of 5% (Brackets indicate non-significant results.) Thus, only four of the differences are not significant in this final combination of all the scales weighted as in Table 20. The profile of relationships between events can be best seen using the two dimensions made possible by the calculation of canonical variables.



We can say then, that what is the case with children at 11+ is equally so at 9+. This certainly throws considerable doubt on Wing's assertion that there is a negligible 'appreciation' ability until eleven years of age. In a very real sense, music can be understood, that is to say observed to have a particular character within a given framework, down to the age of nine. The next stage was to probe one stage further down the age-range.

Group II were 21 boys and girls aged 7 - 8. Table 22 shows the 'F' values on the differences within each scale.

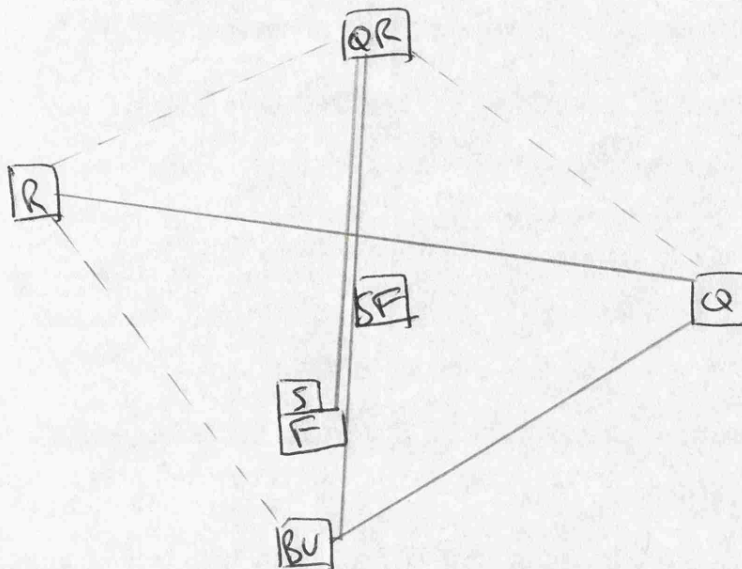
Table 22

Active/passive	2.88	(1%)
Large/small	1.83	(10%)
Light/heavy	1.65	(10%)
Stiff/flexible	0.95	(N.S.)
Outgoing/inward-looking	0.23	(N.S.)

Table 23 Cumulative proportion of dispersion

Active/passive	47.528%
Light/heavy	90.304%
Large/small	98.180%
Stiff/flexible	99.630%
Outgoing/inward-looking	100%

Most of the difference then, is taken up by the scales active/passive and light/heavy in roughly equal amounts. The overall 'F' value for the final combination is an indication of significance at the 1% level of probability, although there are only four individual differences of significance. They are the most likely differences to be detected, mainly between the negative and positive type of event, as the two-dimensional model shows.



It is probably worth noticing that the size of the difference is much smaller in every case than the differences in earlier models, and a comparison with the group of music graduates will show how much more they discern the distinctions between these kind of events. (See page 110. The scale is exactly the same.) Noticable here is the clustering of the negative events and the spread of the positive ones.

The posterior probability is correctly predicted in 27% of the cases, compared with a 41% level for group I. It becomes, of course, increasingly more difficult to say whether at this age the task is rather hard or whether the music is not understood so well. A series of studies using non-musical concepts as a control element would, no doubt, help on this question, but this seems outside the scope of this thesis. We can maintain that down to the 7+ age-level music can be more or less 'understood' in that tiny changes can be differentiated one from the other.

The fact that the school from which these children came is in an area where reading ability is slightly below the national average, suggested a repeat of this type of experiment elsewhere to check on a different type of sample. This is described under Seventh Test.

One other group in the Sixth Test, 31 boy and girls aged 12+, was given this particular set of events to assess. They were a second-year group from a different area compared with any of the other groups. Table 24 gives the 'F' values of the separate scales as before.

Table 24

Active/passive	4.57
Large/small	4.89
Light/heavy	3.36
Stiff/flexible	(1.30)
Outgoing/inward-looking	8.17

They are all significant at well below the 1% level, except the fourth one.

Table 25 Cumulative proportion of dispersion

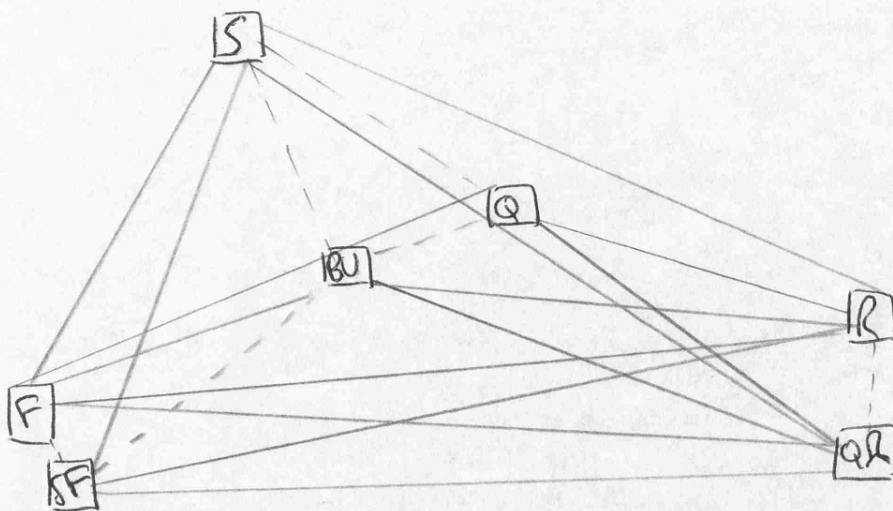
Outgoing/inward-looking	78.085%
Large/small	95.310%
Active/passive	97.674%
Stiff/flexible	98.903%
Light/heavy	100%

Unusual here is the use of the outgoing/inward-looking scale, which so far has not been found very productive of difference. The final 'F' matrix shows high levels of significance where 3.02 gives a 1% level of probability and 2.21 a 5% level. (Table 26)

Table 26

	BU	Q	S	R	F	QR
Q	(0.95)					
S	(1.89)	\$2.07)				
R	4.39	2.28	7.44			
F	2.42	4.94	3.63	11.25		
QR	4.80	3.00	8.74	(0.56)	11.02	
SF	(2.18)	4.92	3.94	10.69	(0.07)	10.36

The percentage of correct prediction (posterior probability) runs at 30%, not perhaps as high as the levels of significance would lead one to expect. The two-dimensional model of relationships between the units once again shows the clear division of negative and positive events.



A further analysis was then made on the relationship of these three age-groups (ranging from 7 to 13). That there seems to be a difference in performance is clear but we have to establish whether or not it is a significant difference. A multivariate analysis was carried out which would give a conservative estimate (by not taking into account the repeated measures element caused by having the same subjects making all the judgements).

The main effect of the musical events was highly significant over all three groups, 'F' being 6.38 when a value of 1.0 indicates a 1% level of probability. The five scales separately were all found significant, when a value of 2.80 indicates a 1% level.

Table 27

Active/passive	12.32
Large/small	10.20
Light/heavy	8.46
Stiff/flexible	3.74
Outgoing/inward-looking	3.42

The age effect was significant at below the 1% level and was entirely accounted for by the first two scales, though the first three were in fact significant.

Table 28

Active/passive	7.04	(1%)
Large/small	3.16	(5%)
Light/heavy	3.37	(5%)

There was also an interaction effect between age and music at a 1% level of significance overall. For the individual scales, three were significant at a 1% level. (Table 29)

Table 29

Active/passive	3.65	(1%)
Large/small	3.32	(1%)
Stiff/flexible	2.62	(1%)

The analysis enables us to say three things. Firstly, the three age-groups are quite different in some way from each other in the way they differentiate the events, and it seems pretty clear that this difference is to do with ability to differentiate them clearly, which improves with age. Secondly, all age-groups down to the age of seven are able to make distinctions between musical events to some extent. Thirdly, and more difficult to get clear, there is an interaction effect between age and the scores. This implies that the whole way in which the events are 'taken' by the subjects is affected by age and not just in terms of more or less ability. The actual description of the music, the way in which the scales are used, either or both, is different in weighting over the three groups. Either music has a different quality of meaning for the various ages or the scales as units of description are seen differently. One inclines to the latter view because of the obvious elevation of outgoing/inward-looking as a tool of description by the third group.

We might notice that the musical differences account for the greater proportion of difference in the full analysis model. Also of interest is that, overall, the scales are found to be useful in order of presentation on the check-form. (See Table 27) This suggests that the first two or three scales are well handled but that the last two in particular suffer from the subjects forgetting the music. Five scales are certainly sufficient for assessing the fleeting, time-bound

musical concepts at any rate on the level of these very simple elements of music.

Seventh Test

This test came into being partly as the result of a mistake in data card order during the analysis of Test Six results. These results were so random that a great deal of heart-searching went on to find out why there were no significant differences between events at all. It was thought that the subjects may be not typical, or that the speed of the music (M.M. 100) was too fast for younger subjects. Accordingly, this test came into service, using a speed of M.M. 80, with seven events and two preliminary trials as before. This time though, the events were not merely played once necessarily, but were played out to a length of two complete bars, which meant that the quicker events were heard four times and not just once. This was partly a return to the idea behind the fifth test, when the events were repeated, some of them, and faded out. As it happens the mistake in card order, a completely inappropriate sequence for the particular computer programme, was discovered, but by then the seventh test had been completed and the results serve to reinforce what has been given earlier.

Two classes of children were used in a junior school in quite a different area from previous schools used. Group I were aged 7+ and group II were 9+. Since the work duplicates the former test to a great extent it is not necessary to give all the details except to say that the level of posterior probability ran at 32% and 33% respectively. Some further details of the younger group are of interest because they show a higher level of significance than the previous 7+ group results. In Table 30 only significant 'F' values are given. The overall

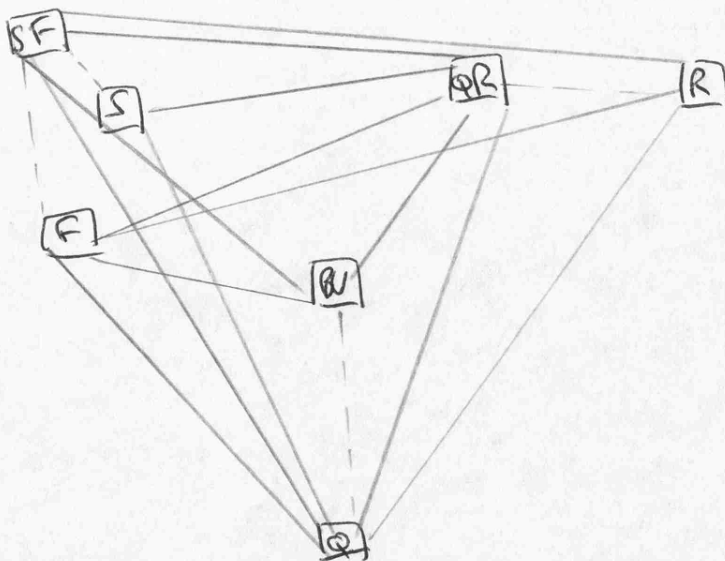
final combination of scales was significant at well below the 1% level.

Table 30

	BU	Q	S	R	F	QR
Q						
S		2.54				
R		2.35				
F	2.52	2.45		2.32		
QR	3.29	3.92	3.77		4.90	
SF	2.54	3.80		2.74		5.34

3.02 indicates a 1% level and 2.21 a 5% level of probability.

Seen on the two dimensions provided by the canonical variables the picture looks much clearer than the previous 7+ model.



The profile once again demonstrates the clustering of the negative units and the characteristic wider spacing of the positive events. There is a great amount of significance here and we can say with confidence that music ~~is~~ can be a form of precise communication and that it communicates at least down to the age of seven. This is a matter of high importance for music educators. We need not assume that music is a vague kind of activity without any 'information' content. On the contrary, even the younger children in our schools are basically able to understand music in some detail and therefore are able to respond to it in a rich and satisfying way.

The experiments and results raise the whole question of what we mean by musical ability. The most usual way in which the term ability is taken is with reference to either technical (largely muscular) fluency on a particular instrument, or with respect to what we might call the perceptual skills of pitch and rhythm recognition and so on. We already have plenty of information about these latter abilities, particularly from the work of Wing, Seashore, Bentley and American research. But it is quite possible to be able to recognise and remember intervals, chords and rhythm patterns and yet still not be able to 'appreciate' the significance of a tune, with all its 'postural' implications. The pitch relationships may be understood, but the sense of striving, of weight, of force and size etc. may not be taken by the listener. There is room in the future for some fairly straightforward work on the relationship of these perceptual abilities with musical understanding as such, and perhaps even with musical likings and preferences.

In the meantime, it seems reasonable, from the evidence of this thesis, to rough out four main areas of ability which will include the abilities necessary to recognise in music the elements that ultimately

matter, what Beardsley calls the 'indexes', or 'subject matter'.¹

1) The fundamental ability to perceive and order sound impressions is clearly the root of all musical abilities, as it is of any linguistic ability. Perception of pitch, durational, timbre and intensity factors is a basic (and much-tested) area of skill: without a certain level of accomplishment here, no further development is possible.

2) The ability ~~to~~ form a concept of a 'norm' is of great importance and seems somewhat overlooked. Without an awareness that this group of sounds or that is style-defining, without an awareness of what Keller calls the 'background' of music, there can be no aesthetic excitement in listening or performing beyond admiration of technique. Examples of norms include scale and mode forms (the influence of the 'tonic' in western music is interesting here), key-centres, repeated melodic or rhythmic ideas, the instrumental colouration of particular periods in musical history and development and, of course, tunes that serve as a basis for variation and development. This ability is fundamental to the making of any kind of judgement about what is happening in music, and the empirical work in this thesis has demonstrated that, given a clearly defined norm, (the basic unit) even young children can discriminate between one musical statement and another. Without this basic unit, no steady comparison could have been made and no awareness of relationship and meaningfulness would have been possible. It is lack of this ability to comprehend the norms that prevents listeners from enjoying the works of certain composers and periods: it accounts often for 'deaf spots'. It is certainly failure to get to grips with

¹ Beardsley, op. cit. p. 378.

contemporary norms that troubles both listeners and composers at the present time and accounts in part for the impression of chaos and anarchy that for many people characterizes the music of this century. Flexibility of norm concept-formation is the key to this situation and ought to be considered within the framework of education in music.

3) Linked closely with the ability to form ideas of norms is the ability to recognise inside the norm framework the activity of the music, the particular 'postural' elements that are presented to the understanding. This is the 'pith' of the music, at least of all music that is made with this kind of communication in mind. It does not change with every listener and it is not merely as anyone happens to find it. It is the hard kernel of substance which makes one piece different from another and makes it possible to say that certain performances are better, in the sense of being in some way nearer to the truth of the piece, than others. This ability seems in some ways analogous to linguistic operations. The implications of a verbal statement depend in part on us knowing the conceptual framework within which it is made and on the ability to locate the particular terms within that framework. So it is with musical statements. When the norm is grasped it is then possible to estimate the significance of a rising or falling motion, a quickening of movement, a chromatic note and so on. The ability to understand what is 'going on' in the music is so closely linked with the ability to formulate ideas of norms that it might be better to see them as two sides of the same coin.

4) Ultimately, to enable the listener to 'follow' longer and more complex pieces, he has to develop the ability to preserve 'distance'. The notion of distance is explored further in the next chapter but we may

notice here that, while in the case of young children in particular there is a strong tendency to respond directly to music, often in terms of physical movement, later on the subtleties and complexities of music demand less reaction and more attention. To take up every posture, to enact all the gestural implications of a movement of a classical symphony, would lead to confusion, inattention and possibly, collapse! To dance with every jig, to sleep with every lullaby, or to strain with every rising sequence is just physically not possible. It is also undesirable from the point of musical communication and understanding. What is being said rather than how it is affecting us becomes the crucial attitude in listening at the highly developed aesthetic level. 'If music has any significance, it is semantic, not symptomatic.'¹ The preservation of distance is then essential for the aesthetic experience and is an ability that, in its way, crowns all the others.

To return briefly to the previously mentioned areas of ability, the developments of norm concepts and the recognition of changes within that framework, which is what has been implied in the testing so far, it is interesting to compare the percentage of correct prediction for all the age-groups involved so far. In effect, Table 31 gives the percentage number of times the unit heard was correctly predicted in analysis from the scores on the check-forms of the subjects.

Table 31

<u>Age-Group</u>	<u>Correct Prediction</u>	<u>Number of Subjects</u>
7 -8	29%	42
9 - 10	37%	61
11 - 12	38%	57
13 - 14	56%	54
Music Graduates	55%	38

¹ Langer, New Key, op. cit. p. 185.

Although it is not conclusive, we might reason from this that the development from age 8 to 14 is critical. This should be taken along with the actual sensitivity of subjects to the qualities of the different events, which is shown to some extent by the actual distances apart of the events as plotted on the two-dimensional model for each age-group. Certainly it seems as though the time of early adolescence is a stage of development when the basic abilities of understanding music are pretty well developed. This is of some interest, because it is also the time when teachers of music in schools feel that interest and enthusiasm for music is on the wane.

At this stage in this whole project, it was discovered that the semantic differential had been employed in the U.S.A. for research into music 'communication'.¹ The review of the work of Pallett describes the use of a five-point bipolar scale applied to 26 pairs of adjectives. The subjects were all students on an elementary music course at a State University.

Eighteen short melodies were presented, ranging from a single note to a tune from Tchaikovsky. Using a factor analysis, Pallett came to the conclusion that there were at least four relatively independent dimensions involved in the music-listening process. They were as follows.

- 1) Aesthetic-Evaluative
- 2) Mood-Emotion
- 3) Stability-Tautness
- 4) Dynamism

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Earl Marshall Pallett, Music Communication Research: The Connotive Dimensions of Music Meaning. Reviewed by James B. Fitzpatrick in Bulletin No. 20 of the Council for Research in Music Education. (University of Illinois) Spring, 1970, pp. 43 - 47.

Six of his 26 scales proved to be significant at the .05% level, namely, floating/dragging, pleasant/unpleasant, beautiful/ugly, rugged/delicate, gay/pensive and happy/sad.

The reviewer comments that there are three serious objections to this work. Firstly, says Fitzpatrick, the subject is not communication at all, but is affective response or attitude. Secondly, the conclusions are based on a single test situation of one sample group. Thirdly, the questionnaire was not tested for 'reliability'. In fact this last objection cannot be treated with a great deal of seriousness. The semantic differential has been well tested by now in many situations and in any case, the level of its performance can be gauged to some extent by the degree of significance in the results. The other two objections ought to be considered, since they might have bearing on the work of this thesis. In the case of the second criticism, care has been taken in this current work to test different groups in different situations so that the objection could not really apply here. The first comment, that the work was not about 'communication' needs a certain amount of consideration, for it is in this respect that Pallett's experiment and analysis differs from our own.

The crucial difference lies partly in the sorts of scale terms chosen. Pallett tends to use a good many evaluative and affective scales whereas we have been involved with scales more closely tied in with posture, terms of activity and potency. More particularly though, we must notice the failure to control the musical material. Pallett uses practically randomly selected music, including such variables as speed, tone-colour, duration, and different kinds of articulation (staccato etc.). For this reason, it is hard to isolate any meaning or communication at all, since there is no controlled series of music events established in a norm-structure. As a

consequence, Pallett is unable to go beyond the isolation of general factors, because he is not able to place his musical events in any kind of framework in which they are seen as relative to each other. The techniques involved, on the other hand, in our analysis and experimental situation ensure that each musical event is assessed by the same light as the others and that differences between events are not only statistically significant but are also semantically significant, in that they are located in a cognitive framework. Thus, for instance, as a particular melodic change is effected, the difference between it and its earlier state is a precise statement about an evolving state of affairs in the music which can be picked up in terms of the types of scales we have been using.

However, Pallett's work does offer general support to this thesis, and in particular to the belief that music is heard in a multi-dimensional way, as a dynamic matrix of movement, tensions, weight and space.

A short summary of the position so far might now be useful before moving on to consider the relationship of listener to music and the educational implications of this work.

1) Music need not be considered to be a somewhat vague, mood-promoting activity. It has been shown that even small changes in pitch and speed carry a quite definite and specific 'meaning' that can be quantified in the assessment of the relative differences between the musical events.

2) There is a strong tendency to group music events into a conceptual framework that might be called 'positive/negative'. The positive events are made up of rising pitch movement and quicker speeds and are quite clearly differentiated from the negative events and from each other. The negative events are made up of lower, slower

movements and tend to be less easy to separate from each other.

The older the subjects are the greater is the degree of assignation to each separate event a meaning of its own.

- 3) The combination of elements, quicker and rising together for example, carries quite a different meaning from the separate entities.
- 4) The manner of ending a musical event, fading out or stopping more abruptly, has a marked effect on its assessment.
- 5) In general terms, events that are quicker or rising or combinations of these are seen as more 'active', 'large', 'happy', 'light', 'positive', 'flexible', 'excited', 'angular' and 'outgoing'.
- 6) No difference was found in the use of a diagrammatic version of the check-form from the more usual semantic differential.
- 7) Postural/gestural terms seem to relate to more directly affective descriptions as components of the feeling state. Thus the components of 'happy' are a degree of flexibility, activity, outgoingness and lightness.
- 8) Different types of event require different types of descriptive scales.
- 9) Sex plays no part in influencing musical understanding as defined in these tests.
- 10) Ability, as assessed by the school seems to affect the situation only marginally.
- 11) Age seems to be the critical factor, and a kind of peak is reached in early adolescence.
- 12) We might reasonably add to the usual list of musical abilities three more: the ability to locate norms, the ability to recognise the dynamic shapes and pressures in music, and the ability to preserve 'distance'.

CHAPTER SIX

It has never been assumed during this enquiry that the state of feeling that is somehow engendered in the listener by music is necessarily similar to any 'feelings' that may be articulated in the music. In other words, it has not been accepted that the musical object is indistinguishable from its effect. Certainly, there may be elements of empathy or identification on the part of the listener during a musical experience, but we have noted the tendency of experienced listeners to be physically 'quiet', whereas the usual notion of empathy involves a sense of close involvement with the strains and motions of the music which would seem to imply a more overt response, such as can be seen among some adolescents who are engaged with 'pop' music. The idea that we feel as the music sounds is full of difficulties, some of which were raised in chapter one.

The relationship of the listener and the work is of great importance for any discussion of aesthetic experience and it is very difficult to bring any experimental evidence to bear on it.¹ We have noted the concept of 'distance' in the art experience, which seems to imply a kind of restraint, keeping the art work, as it were, at arms length. We have already noticed Bullough's observation that aesthetic adaptation is

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Most of the work bearing any relationship to this area has been concerned with the classification of listeners into 'types'. Cf. chapter two.

'exposed to the fluctuation, deviations and apparently especially to the oscillation between the object and the subject's self and his reactive feelings'.¹ To shed a little light on this somewhat mystical notion is the main purpose of this chapter.

Earlier on it was described how the double-check technique came into being.² An 'M' was used on the scales to represent the assessment of what the music is 'like' and an 'L' indicated the state of the listener's response. There was some very doubtful indication that the negative type of event tended to produce a different relationship between the 'M' and 'L' scores from that produced by the more positive units. The theory was evolved that the lower, slower events were somehow less definite and focused and allowed, or perhaps even forced the listener to supply his own interpretation to the situation, or perhaps be roused into expectancy. In fact, attempts to probe this divergence of 'M' and 'L' scoring proved fruitless. One interesting point emerged. The scores for 'M' and 'L' were separated more often for negative events, which seemed to suggest that there might be something to learn from further investigation of the problem. What kind of relationship is there between music as an objective and a subjective experience?[?]

These two terms 'objective' and 'subjective' have fallen on hard times recently and their meaning has become rather hazy. They ought to be considered a little more carefully before proceeding. A psychologist's

¹ Bullough, Recent Work in Experimental Aesthetics. op. cit.

² See Chapter Four.

definition of 'object' is that which is 'perceived, imagined, or thought, as distinct from the act of perceiving, imagining, or thinking'.¹ 'Subjective' is 'pertaining to, or arising from, the individual himself'. From the philosopher's angle, a similar kind of meaning seems to be involved. 'By "subjective" I mean whatever is felt as action, and by "objective" whatever is felt as impact.'² Subjective, then, seems to be our activity or contribution to an experience, and objective, that from outside of ourselves which impinges on us.

We are concerned here therefore, with how we act and react to music on the one hand, and how it makes an effect upon us on the other. A similar distinction is made in a more subtle way by Piaget, when he talks of 'assimilation' and 'accommodation'. There is no need to go into the complex theories of Piaget here, but it will suffice to notice that the listener is in the position of assimilating to his 'schemata' the music he hears and at the same time adapting his schemata to accommodate the implications of the music.³ The theory to be tested in this chapter is that certain musical elements in a piece are more likely to demand modifications of 'schemata' than others,

1 Drever, J. A Dictionary of Psychology.

2 Langer, Mind. p. 31.

3 Flavell, J.H., The Developmental Psychology of Jean Piaget. (New York, 1963) pp. 47 ff.

It is unfortunate that the term 'schemata' should be used by Vernon Lee and Piaget and in somewhat different ways. Piaget's conceptual schemata presumably would include the postural schemata of Head, although we have earlier widened the term schemata to include patterns of cognition, perhaps meeting Piaget halfway?

and that music has a kind of mechanism for demanding of the listener an alternation between a receptive and possibly empathetic attitude, and an attitude of modification of ideas, reconstitution of his way of looking at the music. It was thought that the level of predictability at any given time in the music might be an important factor here.

To put this somewhat difficult notion in a different way: we can only have musical expectations aroused if we are able to predict to some extent the course of the music from what we already know of it. When our predictions are fulfilled, we can say that expectation is satisfied, the music is assimilated to our schemata, or that it is felt as 'impact', as an objective event. We go along with it.

Example 40



When our predictions are contradicted, on the other hand, we can say that our expectations are inhibited, or that we have to accommodate a changed situation, or that, after the initial impact, we experience the event as 'action', we are forced to reconstitute our ideas and become active beyond mere empathy with the music and its flow. We are unseated from the music and are likely to experience what Bullough calls 'reactive feelings'.

Example 41



We are certainly more likely to find ourselves 'stirred' by example 41, especially if we know example 40. We become more aware of our own reaction and affective response. All that has happened musically (objectively) is that one note has been changed. Our internal adjustment (the subjective aspect) is out of all proportion to this.

The most striking examples are those sudden silences in music that seem to throw the listener into a highly active state of assessment and speculation. The empathetic relationship is broken at such moments, the music becomes 'negative' whilst the listener is 'positive' with tension. The vehicle stops suddenly, as it were, and the passenger is thrown through the windscreen. The silence is by no means a dead thing, but is filled with implications and expectations. Take, for example, the last five bars of the Kyrie of Mozart's Requiem.



Example 42

A similar state of uncertainty is found at the start of Beethoven's Coriolan Overture.

Example 43



But we do not need to take only dramatic examples of this 'mechanism' at work. Quite often phrase-endings in music themselves are sufficient to cause an active, expectant attitude in the listener. Let us take, for example, Beethoven's little canon.

Example 44



Each of the two phrases has its own particular structure of tensions and movement. The first phrase moves outward and up from the key-note to the dominant, thus establishing the basic norm of tonality. We are aware of a certain 'outgoingness', a pushing of breath towards the peak of the phrase in the third bar. A crescendo is implied. The second phrase turns back, retracing, as it were, the path taken by the first, but with the stepwise movement in crotchets that gives the impression more of flowing than of striding. A diminuendo would be the most musical response in performance. 'Outgoing then Inward-turning' would be a suitable rough description of the whole effect perhaps. But now we notice the silences again, the rests at the end of each phrase. When asked about it, performers find these moments the most 'telling' part of the tune. The first one is really the climax, but it is a climax of action in the listener or sensitive performer and by no stretch of the imagination could we say that the music was 'active' at this point. There is an element of uncertainty about what might happen after the first silence and at the end, there is a kind of 'stocktaking' of the significance of the whole tune. On our theory, the rests are the places where 'distance' is generated, they break any direct

involvement with the music and may be seen as places where the listener brings things to the situation and makes a large part of his own contribution to the total aesthetic experience. If this is so then we have some kind of key to the relationship of music and human response. The problem is, how to show that musical stimulus and listener response have this kind of variability.

Eighth Test

Yet another attempt was made with a different group of music graduates to get a significantly different assessment of 'M' and 'L' on similar material to that already used. Since no such difference could be located using the type of event in the seventh test, there seemed to be no point in proceeding without fairly far-reaching modifications.¹

Ninth Test

At this point it became clear that the degree of predictability might be the chief factor in bringing out a Music/Listener dichotomy, if there was such a thing. A new test was therefore constructed which would display in a far more outstanding way differences in levels of predictability. It was felt that the order of presentation should be controlled this time and not randomised, since a measure of predictability hinges on the presentational context.


It was decided to present eight sounds in a two note context. The order and spacing of the notes was varied to make the rhythmic placing increasingly more unpredictable by the use of rests. Once again, the tape-recording was of piano sound and a practice run on test eight was made to familiarise the subjects, all of them new to this

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There seems no point in giving details of this abortive test beyond that no significant differences between 'M' and 'L' scores emerged.

experience. The material, in order of presentation, was as follows.


Ex. 45 (m.m. 80)
First Trial



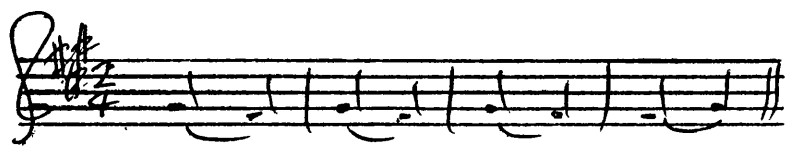
Ex. 46
Second Trial



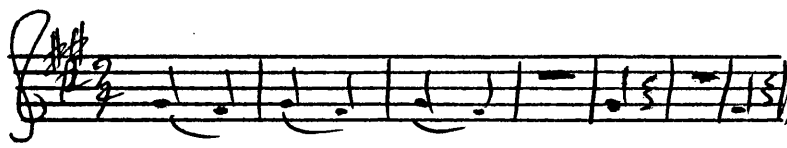
Ex. 47
 (1)




Ex. 48
 (2)




Ex. 49
 (3)



Ex. 50
 (4)



Ex. 51
 (5)



The subjects were told that there would be eight sounds in all on the two notes. Numbers 1 and 5 are identical and would seem to be the most predictable. Number 2 has a small variation in tone order in the last bar, number 3 breaks the rhythmic sequence, and number 4 is almost completely unpredictable, within the limits of the test controls.

In considering the type of check-form to be used, it was noticed that Warr had examined the use of a nine-point scale and found it to be a some value, being more sensitive than the more usual seven-point version.¹ It was decided to use this extended scale. Previously, subjects had commented that they would like to be able to see more easily where the middle point on the form was, and it was felt that some help could be given to the eye on this larger form. An 'm' was inserted over the fifth space to indicate this 'neutral' position. It was thought that a fairly widespread verbal net would be the most helpful in trying to locate any demonstrable differences between the Music and Listener scores, and so six scales were used, including the five found of most consequence previously and the more directly affective 'calm/excitable'.

In this part of the test, 17 music graduates were employed who had not previously taken part in any such experiments. The task is quite hard, and they were asked to check 'M' for what the music is like (an 'objective' description) and 'L' for what the listener feels about the music (the 'subjective' element). We are here trying to deal directly, if somewhat crudely, with the problem.

The subjects were asked after the two trial items (Ex. 45 and 46) whether they would prefer to check 'M' and 'L' together or to hear each unit twice and check one at a time. They all said they preferred to hear each event once only and to check 'M' and 'L' together, because it helped to keep in mind the kind of difference between them. The subjects felt that the distinction was a valid one, if hard to make clear.

1

Warr and Knapper, op. cit.

No. _____

Name _____

(m)

calm _____ excited

active _____ passive

stiff _____ flexible

outgoing _____ inward-looking

light _____ heavy

large _____ small

It was hoped that, in spite of the difficulty of the task, one or more of the scales would show significant differences between 'M' AND 'L'. The differences are to be expected, if at all, between the middle group of events, particularly numbers 3 and 4, and the outside events, the predictable 1 and 5.

In the first analysis, a stepwise discriminant function process, all six scales and all five units were examined to see where any significant difference might lie. The third scale, stiff/flexible, was picked up as being significant, with a level of probability overall of 2%. The 'F' matrix for this scale is as follows.

Table 32 'F' matrix for stiff/flexible

Event	1	2	3	4
2	0.85			
3	<u>6.88</u> (2%)	<u>2.89</u> (10%)		
4	1.28	0.04	2.21	
5	0.72	<u>3.14</u> (10%)	<u>12.08</u> (0.1%)	<u>3.94</u> (5%)

There do seem to be differences between number 5 and the middle events.

The next scale to be picked up in this analysis was calm/excited. The overall 'F' value when combined with stiff/flexible is 2.269, giving a probability level of 2% once again. Differences between events 3,4 and 5 are significant at the 0.05% and 2.5% level respectively. The remaining combinations ending with the overall combination for all differences over all scales are significant to a level of 5%, 5%, 10% and finally, 10%. These values are not particularly high, but they are there (and are based on a conservative calculation, not taking into account the repeated measures element).

The analysis for posterior probability gives a further strong indication that the Music/Listener differences vary significantly between the predictable and unpredictable events. Table 33 is a summary of the number of cases classified into groups, the vertical column giving the number of cases predicted to have heard the particular event, and the horizontal column the actual event that was heard.

Table 33 Posterior probability

Event	1	2	3	4	5
1)	(3)	2	4	2	6
2)	2	(5)	1	3	6
3)	3	4	(6)	3	1
4)	1	2	3	(10)	1
5)	5	5	1	1	(5)

The ringed figures indicate the coincidence of the prediction and the actual event, and it will be noted that event number 4, the most unpredictable event, has a particularly high coincidence, and that the largest deviations from coincidence occur between numbers 1 and 5, which were in fact the same event. There is then every reason to assume that the Music and Listener scores vary in relation to each other and that the variation is caused by the degree of predictability of the musical event.

The test was repeated with a very small sample (9) of graduate non-musicians, but no real levels of significance were forthcoming. Perhaps this is to be expected, since musicians are presumably used to making the kind of judgements in performance where the relationship of what they play to the listener is of great importance. The non-musicians

would not have had this kind of experience to any degree. However, there were signs, including a posterior predictability level of 33%, that larger numbers of subjects may well have brought significant results, especially if events were only included in the analysis that were likely to be different.

It was decided to combine the scores of the two groups of subjects, making 26 in all, for the last three events only. All six scales were still included in the model, although a much sharper set of results could doubtless be obtained by eliminating three of them. In the overall analysis, the two scales, calm/excited and stiff/flexible proved to be responsible for a degree of significance below the 2% level. Differences between individual units were expected to be significant between events 3, 4, and the predictable 5. Table 34 gives 'F' values and levels of probability between these events for each successive combination of scales.

Table 34

<u>Scale combination</u>	<u>Events 5 and 3</u>		<u>Events 5 and 4</u>	
	'F'	Prob.	'F'	Prob.
Scale 1	6.84	2%	7.20	1%
1 & 5	3.40	5%	5.03	1%
1, 5, & 4	2.78	5%	4.62	1%
1, 5, 4, & 3	2.95	5%	3.74	1%
1, 5, 4, 3, & 2	2.53	5%	2.99	2%
All scales	2.10	10%	2.53	5%

The levels are high enough for us to say with confidence that the degree of predictability in music affects the way in which the listener relates to it.

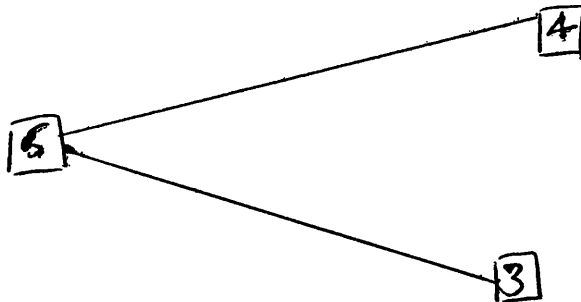
The posterior probability was correct in 55% of the cases.

Table 35 gives the summary.

Table 35

Event	3	4	5
3)	(13)	6	7
4)	7	(12)	7
5)	6	2	(18)

The overall two-dimensional model calculated from canonical variables is as follows, the difference between events 3 and 4 being non-significant, as we would expect.



The following tables give details of the analysis of the scores of the music graduates only, over the last three events. Table 36 gives 'F' values and probability and Table 37 gives the posterior probability summary.

Table 36

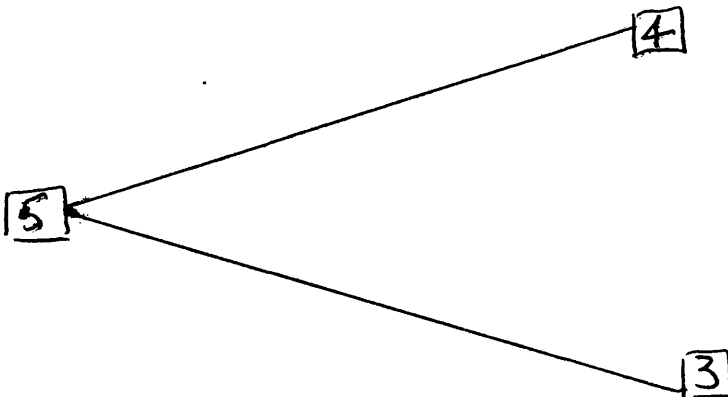
<u>Scale combination</u>	<u>Events 5 and 3</u>		<u>Events 5 and 4</u>	
	'F'	Prob.	'F'	Prob.
Scale 3	12.56	.01%	4.10	5%
3 and 4	7.50	.05%	4.33	2%
3, 4, & 1	5.01	1%	3.86	2%
3, 4, 1, & 5	4.41	1%	3.77	2%
3, 4, 1, 5, & 2	3.65	1%	2.98	5%
All scales	2.97	2.5%	2.47	5%

Table 37

Event	3	4	5
3)	(7)	6	4
4)	3	(10)	4
5)	1	2	(14)

The level of ~~po~~sterior prediction is 60% of the cases.

The model of the relationships of the events is as follows.



It seems possible then to elicit judgements from subjects, especially musical people, that display the variable nature of the relationship between what we have called the 'objective' and 'subjective' aspects of music listening. Certain musical events, according to their level of predictability, will change the way in which the listener relates to the music and may be considered to be an essential part of the aesthetic experience. Some idea of the nature of this relationship may be gleaned from this final test.

Table 38 shows the degree of average difference on the nine scales places on the two scales that are significant by themselves

Table 38

Calm/excited

Events 3 and 5	1.53
Events 4 and 5	1.53

Stiff/flexible

Events 3 and 5	2.83
Events 4 and 5	1.65

The nature of this difference may be seen in Table 39. A minus quantity indicates that the 'Listener' score is, on average, towards the left of the scale in relation to the 'Music' score. A plus quantity means that 'L' is seen to the right of 'M'.

Table 39

Events	3	4	5
Calm/excited	1.00	1.00	-0.53
Stiff/flexible	-2.06	-0.83	0.82

It can be seen here that the relationship of 'M' and 'L' is inverted by the unpredictable events. When the event is fairly predictable (event number 5), and the music seems to swing along without hesitation and change of course, then the listener sees himself as more 'flexible' and 'calm' than the music. But when the event is unpredictable, he sees himself as more 'excited' and 'stiff' than the music.

The situation described earlier in the chapter by means of musical examples is in this way demonstrated by the experiment. To find excitement in a musical experience, the listener must work as a kind of partner with the music. At times he will be aware of what is happening in an 'objective' way in the music that is going on 'out there'. At other times his 'reactive' state is at a more intense level than the activity of the music, and he is more likely to be aware of his own 'subjective' activity.

The expectancy element stressed by Meyer¹ certainly seems to play a role in the affective nature of the aesthetic experience. But there is no simple solution to the problem of how a state of high excitement can be generated and sustained during a musical performance. Meyer's theory of expectancy and its inhibition is doubtless part of the explanation, but in the last chapter we have to try to formulate a theory of music that goes a little further than that.

We are really back to the notion of 'distance' once again. Music is able to, so to speak, hold us at arms length from time to time, by doing unpredictable things which unseats us from any simple empathetic jogging along with the sounds. We certainly do not feel as the music sounds: a great deal of cognitive activity is involved in the musical

¹ Meyer, op. cit.

experience at its most developed level. We have to recognise the flux of schemata that is presented to us, we have to focus on the norms and locate the unusual, the deviation from those norms, and we have to predict from the evidence as the music goes along what is most likely to follow. We also have to respond to the implications in the music rather than merely let it please our sensibilities, or stir up specific emotional states vicariously in us. And this response is a complex and subtle thing, more like a horse and his rider than anything else. The highest level of response is what we have been calling the 'aesthetic experience'.

CHAPTER SEVEN

The time has now come to take up the implications of this work and theory both for aesthetics and for education. A brief summary of the main points arising in the earlier chapters is necessary before putting forward a theory of music that meets the criteria implied in the first chapter, takes note of the more empirical work outlined in Chapter Two and then relates to the experiments described in the body of this thesis. Only then can the information and ideas be brought to bear on education directly.

We noticed in Chapter One the limitations of various theories of art and music. The notion of art as a direct pleasure, like a bath or a meal, has an attractive simplicity but fails to explain how some art appears to disturb and arouse people. It is certainly difficult to see how a tragedy like King Lear could be explained in terms of sensuous pleasure. It is certainly not possible to, on this view, see art as in any way 'educative'.

The account of art as play offers a better view of the structural properties of art, the rules and conventions of games appear to be shared with art. Unfortunately though, a great deal of art is too complex and serious to be satisfactorily explained as play, unless we use the term 'play' in a very widespread and somewhat unusual way.

The view of art as the transmission of actual feelings bears little close scrutiny, since there are serious objections to equating 'emotions' as located in the viscera and brain with 'emotions' supposedly encoded

in an art work. Cooke is not really able to convince us that there is a direct and one-to-one relationship between emotion and music.¹

Nor can such a theory explain why we sometimes go out of our way to see 'sad' plays or hear the music of 'grief'. However, we should note that some trace element of feelings seems somehow to attend music and the task of this thesis is, in part, to examine this aspect.

Three remaining important and highly developed theories were briefly considered, all seeming to embody something of value, but tending to be mutually exclusive and failing to cross-refer. The notion of empathy, feeling oneself into, and losing one's identity in an art work, has its attractions. We enjoy our own activity in the work, straining when it strains, and so on. In spite of Pratt's criticism that, if we take this view, the greatness of a work depends entirely on the greatness of the listener's capacity to respond, there is an attraction about the idea.² McLaughlin suggests how it may work in, say, the case of landscape or architecture by the similarity between the basic form, or dynamic pattern of the object and the pattern of our mental and physical life.³ This theory cannot of course be substantiated, and it does not have much to say about the role of the artist or the individuality of 'great' works.

Theories of 'signification', such as that put forward by Langer, avoid the difficulties of trying to locate specific emotions in a work

1 Cooke, op. cit. pp. 16 ff.

2 Pratt, C. op. cit. pp. 11 ff.

3 McLaughlin, T., op. cit. pp. 92 ff.

or in the response of the listener or looker to the work, but they run into difficulty over exactly what is being signified. If music is a symbol structure, of what is it symbolic? Langer sees art works as symbols of human feeling, in a very wide sense of the word 'feeling', which almost amounts to saying that art works are symbolic of patterns of human consciousness.¹ All this seems a trifle metaphysical but not unlike McLaughlin's theory of patterns of tension and resolution. The real problem of a 'signification' theory of art is how it explains why art works should generate, or appear to generate, a state of excitement in people.

The 'relativist' theories, particularly that offered by Meyer, attempt to explain this aspect in terms of establishing norms and deviating from them, thereby inhibiting expectation and arousing affect.² The obvious progressions and resolutions are held back and the result is a stirred-up state in the listener. The trouble with this is that it tends to reduce all works to the same kind of level of function, being more or less efficient in the way they whip up feelings by their deviations. Why one work may be said to have a particular character or quality by comparison with another, which may be equally affect-arousing, is not very clear. We may be 'moved' by two works to the same level of excitement, or whatever we may like to call the state, but still find that the pieces are totally different in what they appear to be saying.

Laszlo's modification of the theory into the view that art somehow takes over and resolves the cumulative weight of affect built up just in

1

The meaning of the word 'feeling' is particularly extended in Mind.

2

Meyer, L.B., op. cit.

the process of living, fails to recognise that works appear to have different qualities and that some art is disturbing, rather than just cathartic in its effect.¹ Artistic products seem to 'speak to us' in some way, and the relativist theory is not able to get to grips with this.

The more empirical work in aesthetics which is described briefly in Chapter Two is, of course, much more self-limiting in its hypotheses. It gives up large theories and speculations in order to be precise and accurate in accordance with known facts. As it happens, little serious work has been done in this field, and what there is tends to be piecemeal and somewhat off-centre as far as what we are calling the 'aesthetic experience' is concerned.

We have noted the problems of techniques involving physiological measures, and particularly the limitations of reliability of the instruments of measure and the need for very expert interpretation of results. So far, very little has been learned about response to music in aesthetic terms by these methods.

'Behavioural' experiments have tended to use musical materials rather than musical elements, tones rather than tunes, and are prone to leaving alone problems of 'meaning' in preference to sound-matching.

When music has been used in experimental situations it is often handled in an awkward way without any real control over it. Getting people to say how a whole piece of music makes them 'feel' has produced a wide selection of contradictory evidences.² The exception is in the field of 'ability' testing, where tests usually deal with perceptual

¹ Laszlo, op. cit.

² Cf. Valentine, op. cit. p. 308.

skills and short-term memory. This type of test has a clear objective but is very limited in what it can tell us about aesthetic response, about liking or being excited by music.

Work based on introspection is always difficult to assess, being somewhat unreliable and currently unfashionable. Among the more searching and well documented studies, the work of Vernon Lee stands out as an attempt to understand the aesthetic response.¹ Her development of the notions of postural schemata and the analysis of the verbal reports of a number of very articulate subjects do help to formulate an idea of how feelings might be presented by and embodied in a musical piece.

Finally, the notion of 'distance', although similarly based on introspective rather than empirical operations, does seem to contribute to the mass of observable characteristics of the aesthetic experience.

The particular contribution made to the field by the research described in the main body of this thesis, has been to clarify the position on two main levels. Firstly, it would appear that music is capable of representing particular qualities which can be observed by listeners down, at least, to the age of seven years. It is certainly not correct to say, as does the opening dialogue, that music can never be described, or that it in some way 'produces' in us qualities of gracefulness, brutality, and so on. By using carefully controlled musical elements and by avoiding large works and sections of works, and by paying attention in the first instance as to what the music appears to be like rather than how it affects us, it is possible to get a consensus of opinion as to the 'meaning' of particular musical events as compared with other such events. Thus we are driven to the conclusion that music is a form

¹ Vernon Lee. op. cit.

of quite precise communication.

The crucial techniques have been to establish norms against which controlled events can be evaluated by the subjects, and then to measure the differences between the evaluations in terms of scores on a semantic differential type of questionnaire. This technique and its extensions has^{ve} proved sensitive and reliable over a wide age-range and ability-range, representing practically the whole span of our formal education system. Several repetitions of the tests served to substantiate in every way the results of the earlier experiments. The musical elements in question are doubtless very small and almost musically insignificant by comparison with even a very simple tune, but they are seen as quite different entities with particular qualities and characteristics. In crude terms, an upward movement beyond the defined limits of the the preceding norm, coupled with a quickening of speed, will signify more 'activity', 'flexibility', 'lightness', and 'outgoingness'. Younger subjects have some difficulty in differentiating between very similar types of event, for example, between quicker movement and rising pitch, and tend to make more general distinctions between what we have been calling 'positive' and 'negative' events. Adolescents and adults seem able to make much finer distinctions, between all of the presented units, however similar they may appear to be. The use of a diagrammatic version of the check-form proved to be as reliable and, in practice, indistinguishable from the more usual verbal questionnaire.

In Chapter Four we observed a relationship between sets of semantic terms that have 'postural' implications and terms that are more directly affective in implication. The very high degree of correlation of the scale 'happy/sad' with the others suggests that it is reasonable

to conclude that states of feeling can be presented in music via the attitudes, the postures and gestures that attend them. Thus, 'flexibility', 'activity', 'lightness', and so on, are characteristics of a degree of 'happiness', whereas, 'stiffness', 'passivity', 'heaviness' and 'inwardlookingness' are postural components of 'sadness'. The interesting thing about this is that, when the subjects were asked to describe the effect the music had on them they tended to give the same kind of descriptions as when they merely described the music as such. These descriptions were more conservative than the former judgements, but there were no significant differences at all. So it seems that a 'sad' piece of music does appear to produce sadness in people. We would argue though that it is an appearance rather than the actual condition of feeling or emotion.

These findings do help to show how what is sometimes called 'pure' music is able to mean something to us, without the help of words, programme, story or visual assistance, and without the associative bonds that attend well-known tunes and culturally saturated music like the National Anthem, The Red Flag, or Abide With Me.¹

The implications of the relationship of affective states with the bodily expression of them can be pushed just a little further. It is conceivable that our concepts of feelings (using the word 'feelings' in its widest sense) are held and developed through postural schemata. For example, when we wish to recall the abstract concept of 'joy' or 'fear', we may rely to some extent on memory of a 'lighthearted', 'walking on air', or 'stiff with fright' type of postural set to help locate and elaborate it.

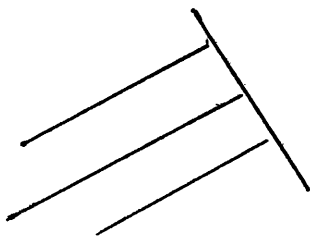
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A summary of the evidence relating to the influence of age, sex and ability on the making of musical judgements is given on pp. 147 and 148 and therefore is not repeated here.

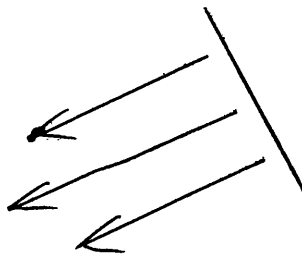
At this point it seems important to stress the fact that listening to music does not normally involve the reformulation in words, or in any other way, of the 'meaning' of particular phrases etc. There are indeed referents for the various particular signs located in music, but we do not normally take the trouble to verbalise them, unless we are teachers or critics perhaps, because they are so completely enmeshed in a dynamic situation and they depend upon their relationship in the context for their import. This is why people sometimes say that music expresses the otherwise inexpressible. It is just too complex and fleeting to be broken down into verbal terms. This feature of music is what renders it incapable of translation into other modes of expression. We cannot have a 'dictionary' of musical meanings, because in the end every style, and to some extent every piece has its own 'dialect' and 'linguistic' procedure. The norms are not dictionary norms which need revision every few decades, but are determined by the context in nearly every way. For example, a cymbal clash in the rhythmic and tonal context of Tchaikovsky's Romeo and Juliet Overture is totally different in significance from what might be exactly the same sound (i.e. 'materials') in Stockhausen's Gruppen. In the one it is a kind of rhythmic and timbre intrusion into the ongoing motion of the music, and in the other it is a part of the basic texture with a vastly different meaning. We thus need a dictionary for every piece and period style, and this is why we have the phenomenon of 'interpretation' and an interest in criticism and programme notes. We talk about pieces and re-hear them to try to get them into perspective. So the purpose of the empirical work described in this thesis is not to compile a dictionary of musical meanings, but merely to show that music without words or programme can be meaningful. Music that goes beyond

the degree of complexity exemplified in the little tightly controlled bits used in the experiments cannot be described, not because it says nothing but because it says too much.

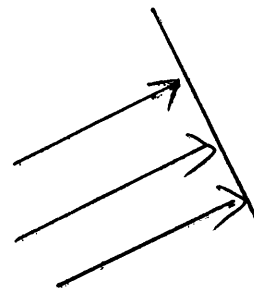
This point has been made¹ in respect of line-drawings by Werner.¹ In a drawing, the components do not function like words but are apprehended in a global way. A curve in one drawing, for example, may represent a river-bank, while in another the very same curve may be part of an animal. The components of drawings, says Werher, 'do not denote a categorically defined and circumscribed aspect of an event', a thing or action per se) 'but refer to a more or less comprehensive situation'. Agent, action and object tend to become 'fused' together. It is hard to isolate where the verb and pronouns would be in the diagrams below, even though they are very simple drawings, yet we would be unlikely not to ascribe the captions to the appropriate one.



He is trying.



He tried.



He will try.

So it is with music, and it is just as foolish to try to say that a particular chord or turn of phrase by itself 'means' something as it is to say that a certain curve, colour or line has a meaning outside of its context in a sketch. This is why the experiments had

¹

Werner, H. & Kaplan, B. Symbol Formation. (N.Y. 1963) p. 389.

to be based on well established norms, providing a context of operation for the single events. The 'meaning' was then marked off by comparison from the same basis of judgement.

The final stages of the experiments, described in Chapter Six, were concerned more directly with the difficult area of the relationship between the music and the listener, between the work and the individual. Here the ground becomes very slippery, but some development of the ideas implied in the work seems necessary. It was demonstrated that the music/listener relationship is much more complex than either the view of music as a direct stimulus acting on the feelings or the simplest formulation of the empathy theory, whereby the listener 'projects' his feelings onto the work, would allow. The relationship is to a great extent determined by the level of predictability, which seems to support theories based on the factor of expectation, its arousal and inhibition. Uncertainty, speculation and prediction are involved in the aesthetic situation. This helps to show something of the mechanism behind Bullough's introspectively generated notion of 'distance'. The listener to music is 'distanced', in the sense that he is unseated repeatedly by surprising events from any comfortable kind of fully empathetic relationship. There is always something about the music that, so to speak, reminds him that it is an artifice and not a 'real' experience.

We can see this mechanism of distancing at work in various art situations. The sudden break in music, the note held off when we expect silence, the twists of plot and character in drama, the literal 'framing' of pictures which carves 'unreal' space out of ordinary dimensions, all these serve in part to remind us that the works are objects with a life of their own, and not merely vehicles of our fancy.

This difficult and somewhat metaphysical point has been made in respect of drama by Koestler.

'Children and primitive audiences who, forgetting the present, completely accept the reality of events on the stage, are experiencing not an aesthetic thrill, but a kind of hypnotic trance; and addiction to it may lead to various degrees of estrangement from reality. The aesthetic experience depends on that delicate balance arising from the presence of both matrices in the mind, on perceiving the hero as Laurence Olivier and Prince Hamlet of Denmark at one and the same time; on the lightening oscillations of attention from one to the other, like sparks between charged electrodes.'¹

In other words, the character and the actor are not the same things, otherwise we would be watching a 'slice of life' and not a 'play'.

Music, if we interpret the evidence well, asserts that its presented 'states of affairs' are illusory by interrupting and fragmenting its elements in ways that force the attentive listener to repeatedly adapt to these changes. He comes to see the work behaving in particular ways, as an entity in itself, something with which he has to get to grips, even if it means several re-hearings. It is certainly not sufficient to explain music as either a kind of tonal wash into which we project or discharge our own feelings, or as a kind of affective puppet-master, pulling the strings of our 'emotions' to make them come alive.

And yet we are still faced with the fact that what we call an aesthetic experience does carry a strong feeling component, an 'aesthetic

¹

Koestler, A., The Act of Creation. (Pan Books, 1964) p. 308.

thrill', as Koestler calls it. People get a 'lump in the throat' or are 'moved to tears' by certain art works. Music, the theatre and the cinema are notoriously able to engender an affective state in the audience. In many instances, no doubt, it would be possible to trace this power to a source in Freudian notions of identification, wish-fulfilment and so on. This would be the situation of Koestler's 'hypnotic trance', a fantasy brought on by complete acceptance of the dramatic events as if they were 'real'. Undoubtedly a close state of identification and wishfulness alongside the trials and triumphs of a hero-figure does produce at times a fairly intense affective experience and a good deal of personal gratification. But like the somewhat similar theory of empathy in art, this concept fails to take into account the qualities that appear to be embodied in art works as more or less objective entities. For instance, the 'Joy' tune in Beethoven's Ninth Symphony can be seen not only as a kind of statement of affirmation, possibly with certain outgoing and consolatory qualities, but also as an element in a work with larger implications. We do not merely identify with the 'hero' tune, but see it as part of a way of looking at human existence. Furthermore, there are many works which do not seem to offer very clearly any type of hero-figure or motif with which we might identify. With what do we identify in The Art of Fugue or in a production of Lear that brings about an 'alienation' effect by laying stress on the mixture of good and bad, weakness and strength in each main character?

Freud himself suspected something to be missing from his theory of art. After giving the more usual psycho-analytical reasons as to why people whistle tunes when engaged in other activities, he continues:

'I must however make this reservation, that I do not maintain this in the case of really musical people, of whom I happen to have had no experience.'¹

In other words, the wish-fulfilment theory along with the empathy theory tends to break down, or at least, cannot be seen to apply, in the situation where there are people who really understand what is happening in an artistic production. It is possible to make a distinction between fantasy and art, and the kind of distinction is clearly brought out by Langer in the matter of fairytale and myth.

'The difference is in the two respective uses of that material: the one, primarily for supplying vicarious experience, the other essentially for understanding actual experience.'²

We might care to make the same distinction between some stories in a women's magazine and, say, a novel by D.H. Lawrence. There is in artistic activity a sort of pleasure that goes beyond the level of day-dream or fantasy.

We have seen how it is possible to indicate in music states of feeling by means of the postural schemata that attend such states. We have also seen how the listener may be drawn into a kind of excited relationship with music through alternating levels of predictability. We have yet to tackle the most difficult question of all, which is why people go out of their way to spend time and money on the arts. What sort of satisfaction is it that is found in aesthetic experiences? What sort of affective state is it when people are 'moved' by a performance, and does it go beyond simply being disturbed by unpredictable events? Closely linked with this is the question of how art or myth helps us to

¹ Freud, S., Sixth Introductory Lecture. (London, 1933)
² New Key. p. 1531 (Hogarth, 1963) p. 108

'understand actual experience'. 'Contemplation' seems to be a key word here.

'Anthropologists may say that the cave drawings represent the workings of his (primitive man's) mind at the level of sympathetic magic, and sociologists may argue that to engage in decoration implies the existence of a margin of leisure and security over the minimum subsistence level and that art is therefore a form of play. Maybe; you can admit as many of these explanations as you think plausible, but the basic facts remain: primitive man made these graphic marks and when he had made them he contemplated them.'¹

It is this attitude of 'contemplation' that is one of the characteristics of the aesthetic experience. The work is valued ultimately for its own sake, without reference to the emotional state of the listener at the time or the need for satisfaction through vicarious experiences.

The result of such contemplation is a kind of special feeling-experience which the individual has with the work as its object. Reid offers a corrective to theories of 'significance' in art which amplified this.

'Life-feelings may in some measure be shown through the medium of the constructed objects of representative art. The vital, emotional and intellectual tensions of a non-representative art like pure music may have something in common with, may in some respect be like, the tensions of life. How this and similar things happen is a legitimate part of the psychology of aesthetics and it may throw incidental light on the nature of feeling. But though legitimate, it is off-centre. The centre is that the artist imaginatively constructs a new object in terms of a medium, an object of which he

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Howes, F., Music and its Meanings. (London, 1957) p.30-31

and we have feeling-experience. Our feeling experience of it is new and individual, concrete because it is feeling of that total situation and no other.¹

Because of his concern for this aspect of the aesthetic experience, Reid prefers not to speak of an art-work as 'expressing' anything, or even to say that it is 'expressive', since this carries with it the idea that something is waiting to be expressed, something external to the work is there to be encoded in it. Reid therefore prefers the term 'embodiment'. An art work has 'embodied meaning', and this 'meaning' is inseparable from the experience of the individual who experiences the work. Unfortunately, Reid's careful discussion does not really get round the difficulty that anything which can be said to have meaning only for any one person at any limited and particular time is normally regarded as 'meaningless'. Meaning usually indicates a shared, public experience, and to say that a work of art has meaning is to say that there is a particular and distinctive quality about the work itself and not just about our reactions to it. These qualities can to a limited degree be discussed and indeed often are discussed by audience and critics as if it were expected that other people might have had a similar insight into the 'meaning' of the work.

This needs bringing out a little further because it is important at this level of discussion. Reid has done valuable service by stressing the unique and personal feelings which arise in an aesthetic experience, but we ought to notice what appears to be a misconception in his emphasis. He says, for example, that there is no separable distinction

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Reid, L.A., Meaning in the Arts. (London, 1969) p. 63.

between patterns of paint or sound and their meanings. But we have seen in the experimental work that even in music, the 'pure' art, there is a kind of meaning which can be brought out under controlled conditions. A certain pattern of tones in a given context does seem to mean, for instance, an increase in sense of weight, pressure, size and so on. (Not only this, but the modes of description we have been using, what we have called (postural' factors, do bear a very close resemblance in their use to less precise affective terms of description, to the extent that we might be able to call the postural concepts components of emotion.) The understanding of such meaning is, we would argue, essential, and is a preliminary stage of meaningfulness before any unique and 'embodied' meaning can be brought about.

What seems to be happening here is that the emphasis on different aspects of the aesthetic situation changes depending on which part of the process interests us most. Freud, for example, was once interested in the mental processes of the artist.¹ Langer is concerned with what is being made by the artist and what it might signify while Reid is aware of the ultimate impact of the work on the looker or listener, of what we might call the relationship. We can get an idea of how Reid regards this relationship and of how he tends to skate over the preliminary stage of meaningfulness by consideration of an analogy of his. He says, that if we see a man throwing things about 'we would not say - - - that, when he throws things about his movements "mean" that he has certain feelings'. We just 'see him as angry'.² But that there is meaning in such actions is surely not questionable.

¹ For example, his analysis of Leonardo. (Pelican, 1963)

² Reid, op. cit. p. 71.

After all, it is possible to mistake the meaning; he might be throwing things about because he is overjoyed by good news. In a way, we 'read the signs' of his actions within the total situation. That judgement we make is what his behaviour means to us. What it means for us is quite a different matter: we may recognise anger but may 'see' him as pathetic, mistaken, funny, or frightening, depending on our relationship with him. Reid is quite right when he says that this situation of relationship is central to the aesthetic experience, but we must not ignore the preliminary recognition of the signs. In the case of music, we have to learn to recognise the presented schemata, the play of stiffness, weight, size and movement at least, before any unique 'meaning' can be brought about. A great deal of confusion might be avoided if we used the term 'significance' for what qualities are signified in the work, and 'meaningfulness' for the total relational situation. At any rate, we must keep in mind the two levels of meaning.

But what kind of experience is this 'new and individual' feeling-experience? How is brought about what Gurney called 'an emotional excitement of a very intense kind'? ¹ It seems unlikely that the answer lies completely in the theory of inhibited drives and arousal of expectation, as Meyer suggests, if only for the reason that the aesthetic experience seems not particularly similar to other experiences where impulse to action is inhibited. For example, the experience of looking at a painting, or seeing a play or hearing music seems to be in quite a different category of experience from our feelings on not being allowed to get on a train we very much want to catch because it is due to depart. It would seem more likely that expectation and surprise, the

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Gurney, The Power of Sound. op. cit. See pp. 315 - 316

fluctuating level of predictability that was isolated in the Ninth Test, is really the mechanism of engagement with the work. It is how we are kept interested and involved, it is how we are brought into action with prediction, speculation and ideas about what is happening and what is likely to happen, and in all this there is obviously likely to be a trace of excitement. But it is not the prime source of high aesthetic pleasure. That peak of aesthetic experience is scaled only when a work relates strongly to the structures of our own individual experience, when it calls for a totally new way of organising the schemata, or traces, of previous life events. This experience of seeing things by a new light is called by Koestler 'bisociation'.¹ It is what he calls a 'Eureka' experience, what Langer calls the triumph of insight: we discover in the work a 'point of view' that seems to us at that moment to be a kind of revelation. It is in this area that what Bell called the 'aesthetic emotion', what Gurney calls 'emotional excitement of a very intense kind', and what Reid calls a new and individual 'feeling-experience', is located.

Something of the way in which this experience may be brought about is indicated by McLaughlin.² He sees music as being made up of patterns of 'tension and resolution' and also that these patterns 'correspond to those of activities in the brain caused by mental and bodily events'. (This view corresponds to our development of the idea of 'postural schemata'.) Now the same patterns may be shared by several groups of activity, mental and physical. That is to say, different

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A concept first developed in Insight and Outlook.

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Music and Communication. p. 168.

activities and experiences may involve somewhat similar sequences of electrical-neural behaviour. A presentation of such a pattern via the tensions of music would, on this theory, give rise to an experience of fusion of a number of past events. It is perhaps better to quote McLaughlin directly at this point.

'For now, at least, we can see that certain patterns have the effect of calling up recollections of many similar patterns from past experiences and that these recollections arise from many different levels of personality - - - and we find ourselves experiencing a synthesis or fusing of many events, many memories, many of the paradigms of existence. This is in itself a new experience, and one which is very much more profound and stirring than the individual experiences of which it is composed.'

William Empson puts the point in another way.¹

' - - - whenever a receiver of poetry is seriously moved by an apparently simple line, what are moving in him are the traces of a great part of his past experience and of the structure of his past judgements.'

This re-alignment and fusion of various remembered experiences, the play of schemata, as it were, would seem to be at the root of the most powerfully felt aesthetic experience. It is an unreal experience made from traces of reality, the old seen in new ways. The central point is that the experience is, as Reid says, new although it is compounded of elements of each individual's past life. It is its newness and revelatory nature that generates the high excitement that characterises

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Empson, W., Seven Types of Ambiguity. (Peregrine Books, 1961)
(Preface to 2nd Edition)

the encounter of the individual with the work of art. Further than this it seems impossible to go at present.

We might then summarise the theory of music that has evolved throughout the thesis.

- 1) Music presents the patterns, schemata, or traces of felt-experience to us by means of precise yet plastic concepts of weight, space, movement, size and so on. In this way and on this level it has 'meaning' or significance and can thus be seen as a vehicle for communication of 'information' about the state of affairs we call 'feeling'.
- 2) The framework of operation differs from spoken language in that the definitions, the 'norms' in music are established and re-established in every piece and period style.
- 3) The level of predictability varies and fluctuates continually in music, thus promoting 'distance', a particular kind of relationship with the work. We are continually reminded that music is not just a vehicle for our fancy and fantasy life by the inhibition of our expectations. The work is seen to have a 'life' of its own.
- 4) The highest peak of aesthetic experience is to do with the excitement caused by fundamental re-alignment and re-structuring of the schemata we hold to represent past experience. In this way a work may be said to have 'meaning' for the individual on a different level of significance from the initial presentation of feeling states.

It is hoped that this theory in itself represents a 'fusion' of the important work of Langer, Bullough, Meyer, Reid and Vernon Lee and that the findings of an empirical approach have been related to the mainstream of aesthetic thought and investigation.

It remains to relate this theory of music and the accumulated information to the particular field of study; education of the emotions.¹ Taking first of all the 'emotions' part of the problem and returning to the issues raised in the first chapter, we ought to first be very clear that any division of arts and sciences into 'emotional' and 'rational' areas is based on a misunderstanding of the situation. Science is not without its 'eureka' experiences and music at least is not without cognitive demands. We might notice four such cognitive elements in the musical situation, leaving out any reference to performing skills. Firstly, there has to be on the part of the listener a recognition of the presented schemata that are implicit in the work. This is fundamentally a cognitive process akin to understanding what is being said to us in verbal language. Secondly, the listener has to build up norm concepts and a general frame of reference in which he locates such 'meaning' as is presented in the work. Thirdly, he has to be able to predict a future for the work as it progresses in order to formulate expectations which may or may not be met

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In Chapter One we discussed the difficulties of words like 'emotion' and 'feeling' and accepted the definition of 'emotion' as a fairly intense affective disturbance with implications for action in response to it, and 'feeling' as affective experience in general, covering emotions but also taking in the less striking affective states, like 'boredom', for example. (Langer's huge definition of feeling as something that covers the 'entire psychological field' will have to be left on one side now.) In what follows however, feeling and emotion will have to be used interchangeably, as they so often are in this type of discussion, as representing the affective side of experience rather than the 'rational'.

in the course of the music. Fourthly, the listener undergoes a change of cognitive perspective as a result of the re-structuring of his past experiences by relating to the work in the manner described earlier.

This latter point is of great importance for a proper assessment of the role of music, and by implication the other arts too, in education. The term 'education of the emotions' is used a fair amount at this present time, sometimes with reference to, and sometimes with complete disregard of the arts. Just what it might mean and how the arts may be seen to function in the context of education needs some clarification. The relationship of thought and feeling is at the centre of the issue along with the importance of getting words like 'emotion' clearly marked out.

Let us first distinguish three uses of the term 'emotion' that seem so often to be confused in discussions of this sort.

- 1) Emotion as an intense affective experience and the extension of this to cover affective experience generally.
- 2) 'Emotions' as they may be located in art via their patterns or schemata.
- 3) Emotion that is experienced as a result of an aesthetic encounter.

It is only emotion in the first usage that Peters refers to when he conceives of the non-verbal arts as assisting in the 'discharge of passivity'.¹ It is indeed possible to see a cathartic element in ritual and the arts: we might notice certain musical phenomena like jazz and 'pop' where people dance to music until they reach a stage of relief from feelings akin to trance. This certainly happens in

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Cf. Chapter One.

primitive ritual dance.¹ But rapt attention is the hall-mark of the experienced listener rather than wild physical action to drain off, in some way, surplus emotion. This attention is given to the musical events, the patterns in sound and silence that signify and are analogous to the patterns of feeling. There is nothing mystical about this. Feelings that we experience arise out of a life-context, assume importance, move along more or less urgently or quietly, interrelate with other aspects of feeling and eventually are replaced by other felt experiences or disappear in sleep. Music has a similar 'organic' quality: we have seen in the experimental work how, in a given context, different musical events can be located, and how postural terms can be used to assess these events against each other. In music that is not fettered by experimental situations, the same kind of ebbing and flowing goes on as in the life of feeling.

We are now dealing with the second usage of the term 'emotion', the way, in which emotions, or their schemata, are experienced in music by the listener. These 'emotions' are but the traces of life-emotion, offered without the need for action and the attentional exclusiveness that the more powerful emotional states inflict upon us. The 'grief' we hear in *Eroica*, to use Cooke's example, is not the paralysing grief of bereavement. It is the pattern of such states rather than a direct invocation of them and it is unlikely that a 'real' mourner would be able to appreciate the work at the height of his sense of loss. His 'passivity' is discharged in time and through other ways. 'Emotion' in life and 'emotions' in music merely resemble one another. The pattern

¹ Cf. Sargent, op. cit. p. 92.

and structure is abstracted from many different experiences of, and even ideas about the particular affective situation, be it grief or whatever. Any specific feeling-state that the listener may claim to experience as a result of the music being played to him is not the direct emotion as such, but an appearance of it. It is held at arm's-length, 'distanced', so that it can be contemplated and not merely felt. It is here that confusion is most likely to arise, because listeners are liable to identify the strong aesthetic experience we noted earlier with the specific 'emotions' presented in the music. This is why Cooke can say he feels real grief during Eroica. It may be that this type of judgement may arise in the following way. 'I recognise in the music the heaviness, the dull, stiffness of grief.' 'I experience a profound emotion.' 'Therefore, I experience grief.' This, of course, does not follow, and is a confusion of the second use of the word emotion, with the third, the specific aesthetic experience which results from the fusion we noted earlier.

If music were limited in its effect to a cathartic function or to making us feel specific emotions, then it would be difficult to see how it could be said to have a part in educating emotions. Stimulating is not the same as educating and neither is letting off affective steam. But we have no need to make this kind of limitation. It seems reasonable to argue that musical activity may be properly educative in that it helps us to formulate and explore the patterns of feelings. Our conception of, for example, 'sadness', is brought into focus, redefined, sharpened, developed and deepened by Schubert's song-cycle Winterreise. The bounding rhythms of life are part of the area of exploration in the last movement of Beethoven's 'Seventh' and perhaps something like tenacity and dogged perseverance are components of the 'Fifth'. The words are never right of course, but they may help in

making the point that there are specific areas of exploration, areas of insight that are the 'subjects' of musical works. Because the patterns of feeling are abstracted from local contexts and built up into single works, we are obliged to say that we are offered a perspective. The composer has a point of view, so does the painter, and we are invited to see things in this way or that. 'Look', or 'listen', they say, this is what we think it is like.

To be helped towards a perspective on the life of feeling is surely an educative process. But the phrase 'education of the emotions' is somewhat clumsy. It is humans who are educated, not emotions. We are helped to structure and understand modes of feeling by the mapping out, the charting and abstracting of affectivity by the artist and musician. Emotions in art are not so much 'discharged' or 'disciplined', in the sense of being trained to behave themselves, but are presented for us to understand, to clarify what before might have been undifferentiated and confused. As Bantock says: 'Human development proceeds, in part, at least, out of an ability to make finer and finer distinctions'.¹ It also proceeds out of an ability to re-order, to re-structure experience, to make one concept out of many random experiences. This task of formulation and refinement is largely in the hands of the makers of art-works, insofar as human feeling is concerned. The arts resound with ideas about the human situation and, in Koestler's term 'bisociate' instinct and intellect. Because the arts are so often concerned with the relationship of reason to emotion they offer us not just insight but also a distinctive excitement. We have called this the 'aesthetic emotion'. Hanslick is aware of it, Reid and Gurney acknowledge it: we either experience it or not. Vernon Lee's subjects gave strong accounts of the experience. It is the ultimate pleasure in the aesthetic situation, though we might notice certain less heady pleasures that

¹ op. cit. p. 81.

rarely rise to the level of being graced with the name 'emotion'; admiration of technique, pleasure in seeing the point of a work, delight in the clarity or some other quality of the presentation, and so on.

But we are concerned here not so much with the pleasure aspect of music, but with its 'information' content. We have seen that music has a precise public meaning on one level and a profound meaning for the individual on another level, and it has been argued that it straddles the affective and cognitive areas of experience by clarifying and structuring feeling. Hence the title of this thesis: Music and the education of the emotions; a study of musical cognition. Music is one mode of understanding the world and our experience of it, it is a way of knowing the affective.

In general educational terms this implies that music and the other arts will be involved in building up what Bantock calls 'patterns of affectivity' so that we come to respond to life in different and more subtle ways.¹ This corresponds with Beardsley's statement that the arts may help to refine and develop imagination and this, in turn, meets Peter's point about the need to develop the imaginative ability to recognise emotion in oneself.² It may well be that for many young people in our schools the modes of experience we call the arts should become more central to the curriculum, but however this may be, to sensitize particular feelings and to develop a perspective on the felt aspects of our human existence is largely in the hands of those who make for us the 'forms of feeling' and those who help to transmit both the techniques of the making and an appreciation of what is made to other people. We must now turn briefly to the more practical business

¹ Bantock, Op. cit. p. 83

² op. cit. p. 198.

of how our experimental work and the theories that attend it bear upon the music educator, particularly in the schools.

Perhaps the most important and fundamental implication is for the attitudes of teachers towards the aesthetic aspects of their work. The central point is that the experiments have shown that music is able to be a vehicle of communication over a wide age, ability and social range. Once we leave the view that music is a somewhat vague, emotional activity, and accept that it has a form of 'meaning' and that the grasping of this meaning is likely to lead to a richer understanding of the life of feeling, then we are obliged to look at music in a similar light to literature and to think in terms of curriculum of music as contributing in a precise way to human development. Consequently, we ought now to consider specific issues that arise out of this work in order to formulate some idea as to how music might be approached in the classroom.

We saw in Chapter Two that it is possible to fail to distinguish between musical materials and musical elements. We noted how this failure tended to invalidate certain types of experimental work from an aesthetic point of view. Equally so in the classroom. A teacher who hacks through musical material on an instrument or vocally, or who speaks through recorded or actual performances of music without allowing the lines and textures to have proper attention is failing to present musical elements. To have sounds going on is not enough. They must be shaped and purposeful. They have to relate to one another and thus achieve the elemental state. The individual notes become a phrase, the chords become a harmonic progression, the electronic sounds become part of an ongoing process able to be felt as a schema. This is the well-known distinction between a musical and unmusical performance. No aesthetic

awareness can be developed until the sounds, the 'materials', become the 'sounding forms', the 'elements'. This is of crucial importance for the more experimental ways of teaching music in schools. Work with sound textures recorded in the street, work with sound distortion using tape-recorders, and work with percussion instruments on contemporary lines has always to be subject to the same two questions: 'Is it a viable activity for the classroom?' and 'Is it a musical activity?' Sooner rather than later, experimenting with materials has to give way and evolve into the conscious forging of musical elements. To give an example of this: a child is experimenting with the various sound possibilities of a large cymbal.¹ He is encouraged to select certain sounds and relate them by repetition and juxtaposition to each other. He may try to make up a sound conversation with two or three bits of material. He ends up with a small piece of music, an elemental thing. We reach this position by a three-fold process. We select what we feel are appropriate sound materials. We see the sounds in a relationship with each other, and we have an intention to make an aesthetic object, of interest for its own sake. The most unlikely materials may yield these results while apparently more promising ones, like the notes of a Schubert song, for example, may never leave the stage of 'note-bashing'. A proper grasp of the materials and elements distinction seems an essential part of understanding the music-teaching situation at any level of operation.

We have also considered the importance of the ability to formulate norm-concepts.² The experiments have shown how the establishing of a stylistic framework can focus very clearly the actual musical 'events'

¹ This example is based on a section in Sound and Silence by Paynter, J. and Aston, P. (O.U.P., 1970)

² Cf. p. 142.

that take place. It is vital at this present time that a definite and conscious effort be made in music education to help in this matter. Because of the many channels of public communication, the mass media, imported styles of music, and particularly radio and T.V., we have reached the position, as Lambert pointed out years ago, of too much music. We are not able to settle down and explore the deviants from a well-established norm at our leisure. From the western world alone the variety and difference of music we encounter can be bewildering and the effect is often that we attend to nothing properly. We assume that music has nothing to say to us because we cannot find the key to the style and manner of so many different norms. Consequently, we tend to overhear rather than listen to music because it is so difficult to get pieces and styles into focus.¹ Great flexibility is required to switch from Beethoven to Boulez, to Jazz in all its variety, to the music of India, to 'pop' and so on. The highly trained musician is particularly liable to be somewhat narrow in his preferences and in the range of styles in which he feels at home. Two main reactions to this problem of norm confusion seem to be in evidence. Either people tend to fall back on well-worn and often somewhat diluted styles (some light music and pop and certain classical favourites, for example) or they strike out afresh with a new and personal set of norms, as indeed many of the current younger school of composers have done, thus creating more confusion than before.

There are lines of action that can be taken in the face of this situation. We have to realise that the musical background of any piece being presented is much more important than biographical, historical,

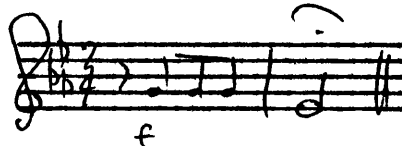
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An indication of general categories of musical styles is given in the writer's Popular Music and the Teacher. op. cit. pp. 93-104.

technical or notational details. The norms are established through experience of and not by telling about. If we are presenting, for example, a 'classical' work for listening, we ought to try to establish the period norm out of which it sprang by previous experience of other, and perhaps smaller works of the time, preferably by performance. An unusual or striking piece is best seen in the context of the 'usual' from which it was derived. The practice of working 'backwards' from present-day music to other periods and composers is, on this view, suspect because norms are best established in developmental order, which usually implies chronological order. With regard to further understanding of the particular work, we might have the main ideas sung or played by the pupils so that extension and development and divergence of and from these ideas can be seen as deviation from the already known. This is clearly the case in a set of musical variations or a Bach Chorale Prelude, where the unvaried tune should be the key norm established in the mind of the listener, as it presumably was in the mind of the composer.

We should consider here the importance of repetition, particularly in the case of novel sound materials and improvised music. Repetition and limiting of materials is essential whether music is merely being heard or is being made by the pupils. It is necessary to repeat elements until they are able to act as a basic for deviation. Very often the teacher is inclined, in the pursuit of 'interest' to push on quickly from one piece to another, only to bore the group by failure to make any real aesthetic contact at all. A great deal can be done on a little. Norms are established; extra parts are added; a little tune becomes an instrumental arrangement, or is seen as part of a larger work, and the deviations are enjoyed. Sometimes particular performances seem to bring out the differences between the normal and the unusual more clearly

than others and it is these performances that may best suit the school situation. More 'subtle' interpretations can come later. In the same way, certain pieces seem to establish very clearly basic figures which function as a norm. Beethoven does this with



and perhaps the Fifth symphony owes some of its popularity to this factor. Some Indian music seems to set up a particular pitch sound which is repeated and established as a norm from which exploratory wanderings take place. Berio's Sequenza Five seems to do this to some extent.

There is always the possibility of testing the situation. If the teacher asks 'Do you hear anything unusual in this?' and gets a negative response when there is clearly a startling deviation, then it is obvious that no norm concept has been established and the music can therefore have little possibility of engagement for that class of pupils. A strange chord, an interrupted cadence, a distortion or variation of a tune, a chromatic note in a diatonic melody, a minor key version of a major key theme, are but a few examples here.

We might briefly notice also the importance of the ability to recognise the presented schemata as they appear in music, what we have previously called the first level of understanding, and particularly the ability to perceive the more directly 'postural schemata'. The most important factor here seems to be the relationship between music and overt movement. Nettl noticed that there 'seems to be a considerable amount of correlation between the size of dance steps and of musical

intervals'.¹ Laban, as we saw earlier in Chapter Two, has identified in movement the factors of weight, space, time and flow, somewhat similar factors to the ones demonstrated in our experiments.² There is also some evidence from Hungary that music improves certain postural abilities in children.³ There may be some doubt about the controls in the experiments, but the results indicate that children who were in regular and frequent contact with music were better able to take up a posture signified for them by a static design with sticks. They were better at understanding and imitating 'an abstract representation of movement'.

Dalcroze certainly thought that the links between music and body movement were strong.⁴

'Rhythm, like dynamics, depends entirely on movement, and finds its nearest prototype in our muscular system. All the nuances of time - allegro, andante, accelerando, ritenuto - all the nuances of energy - forte, piano, crescendo, diminuendo - can be "realised" by our bodies, and the acuteness of our musical feeling will depend on the acuteness of our bodily sensations.'

¹ Nettl, Bruno, Music in Primitive Cultures. (Harvard, 1956) p. 55.

² Modern Educational Dance. pp. cit. (We should notice that Laban thinks of music as a way of aiding movement, whereas Dalcroze sees the situation the other way round.)

³ Kokas, Klára, Journal of Research in Music Education. (Spring, 1969) p. 125-134.

⁴ Dalcroze, J. Rhythm Music and Education. p. 87.

Dalcroze's systematic treatment of movement in direct relation to music is well-known. Certainly with younger children, and in some instances with older ones, movement has been observed to help them to hear music in a richer way.¹ It would seem likely then, that overt bodily movement has a part to play in music education in assisting the development of postural schemata and the identification of these schemata in music.

There are areas in which the music educator may work in order to assist the development of the ability to recognise the schematic elements in music apart from movement as such. We might notice the use of verbal analogy or 'aesthetic' terms to bring out the particular quality. Words employed in this way are often the stock-in-trade of conductors who are trying to communicate in rehearsal the qualities they find in particular parts of the music. 'Heavy', 'spiky', 'flowing', 'cutting' and 'smooth' are examples. (The postural qualities of music are of course to be found signified in the gestures of conductors, the best of whom often communicate a great deal without words at all.) It is possible to use the same kind of terminology in the 'appreciation' situation. Children might be asked about the relative shape, size, weight and speed of phrases or timbres, in a somewhat fuller way than in the experiments described earlier. Ways of presenting notions of, for instance, 'striving', 'floating' or 'growing' in the creative music-making of the children might be explored.

The relationship between music and movement seems particularly close but there are also analogous situations across the arts. Work

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E.g. Gell, Heather, Music, Movement and the Young Child.
(Sydney, 1949)

using poems, stories and paintings in combination with music might help the formulation of concepts about particular musical elements. There is a danger here though. The use of visual material, like filmstrips or pictures, needs careful consideration. If the visual closely reinforces the aural images, like the sight of an orchestra playing, where musical activity is closely linked with physical activity and weight of sound with numbers of instruments playing, then it may help to focus attention and develop the appropriate concept. If, however, the visual image presents contradictory and therefore distracting schematic information, then we are setting up a confusing situation. The practice of presenting historical or biographical details, as on a record sleeve or programme note, in such a way that it appears to be appropriate to read it during the performance, is a similar case. Interesting as it may be it is not focussed in the right direction and the music goes on without us as we read it.

There is much to be said for a 'ritualistic' approach with younger children, where story, the visual aspect and movement are united and properly integrated. Music in its unseparated state, as part of ceremony or ritual for example, can function in a powerful aesthetic way. But ultimately we are concerned with the highly articulated music that requires for itself all our attention and yields the greatest aesthetic return. The contact with the 'perspective' offered to us by the greatest musical minds can be broken by the clutter and clatter of other sense impressions and we thus lose out to some degree on the insightful and educative experience that is available to us.

We ought to consider more specifically the role of performance in music education. In the past, a good deal of school music was founded on vocal performance, and it is of interest to look at the respective

merits of vocal and instrumental music from the point of view of the idea of 'distance'. There is in singing a direct relationship between the tensions and demands of the vocal line and the musical meaning. Gervinus called vocal music the 'true and genuine music', compared with instrumental music which has 'lost the spirit of art and has degenerated'. Pleasants has indicated that music at any remove from vocal style tends to lose its life and communicative possibilities for the vast majority of people.¹ This is because the relationship between singer and song and singer and audience is more directly empathetic. The climaxes come along with a greater need for breath and control, higher and louder than the general context of the song. An outstanding example here is the tenor version of Schumann's Ich Grolle Nicht. Anyone hearing this song and accepting the lieder norms is going to feel the tension and strain involved when, on the return of the first idea, the singer rises to a high 'A'. The singer is near the limits of his vocal range and this is analogous with the sense in the verse of the poet being 'at the end of his tether'. The phrase in question also rises above what has been established as the upper limit (or norm) earlier on in the song. We feel the strain with him and recognise the emotional pressures implied at this point.

It is, of course, possible to over-empathise, to pull the music and the thought of the composer out of shape in order to squeeze in more 'expression'. A poor singer often does this. A tune becomes a vehicle for him rather than something with a life of its own. It loses its life by being smothered with emotion. Some songs of course are written

1

Pleasants, H., Death of a Music. (London, 1961) Cf. p. 191.

with this end in mind in order to be used by a well-known performer or group of performers, such as we find in the 'pop' music field. However, we might say that the various dimensions of postural significance, strain, movement, weight, size and so on, can be the better appreciated and recognised in music by those who perform music themselves, especially in a vocal way. The same applies to instrumentalists, particularly 'wind' players whose technique in terms of breathing is close to that of the singer. We might say that there tends to be a close relationship between the song and the singer and his audience and that the 'distance' between the work and the people concerned will tend to be shorter than is the case with some instrumental music. Close empathy and 'under-distancing' is the hazard of an exclusively vocal approach to music education.

Instrumental music seems to be in a different category, generally speaking. Back in 1929, Ernest Walker brought to light the speculation of Schnabel as to 'whether the discovery of the autonomy of wordless and gestureless music may not be regarded as the greatest contribution that Western Europe has made to the sum of human culture',¹ Walker tends to agree that instrumental music 'is the purest and highest, because most self-subsisting form'. This strange tension between vocal and instrumental music is worth examining a little further.

Vernon found a kind of division on this front too.² Among his subjects he found that 'the more musical have, on average, a considerable

¹ The Times. (29th September, 1929)

² Vernon, P.E.

preference for orchestral and chamber music concerts over choral concerts and operas, and show little appreciation of any vocal music'. Perhaps the notion of 'distance' may help to explain what appears to be at least a difference in emphasis. The instrumentalist, and at one remove the listener to instrumental music, may be more aware of what we might call the 'objective' nature of music. There is an intermediary between the maker of the tune and the sound itself: the simplest instrument is a tool of 'distance'. The sound is produced in the instrument and does not, as in the case of singing, emanate from the body of the performer. There is thus a lower and less direct form of empathetic relationship between the 'feelings' of the music and the 'feelings' of the performer. One of the dangers, artistically speaking, that besets the instrumentalist is the tendency to produce a line all neat and clipped, with mechanical exactitude but no hint of involvement with the tensions of the music. Pianists and organists are particularly liable to this fault, which might be described as 'over-distancing', because of the mechanical complexity of the instrument which stands between the musical ideas and the actual sounds. However, this is somewhat speculative, and merely helps to make the point that a variety of ways of performing are of great value in music education.

Finally, we should notice the experimental findings regarding abilities, age and sex. All the evidence shows that there is no difference in the sexes between the ways in which they make judgements as to the postural behaviour of the music. Nor is there any reason to believe that ability, as seen in the ability-range in our schools, contributes much in the way of difference of understanding at this preliminary level. The greatest factor seems to be age. The development of this fundamental type of aesthetic judgement is most marked between

the age of about 7 and 14. The difference between adolescents and music graduates in terms of consistent and reliable description of the events seems rather small, and it seems reasonable to assume that music has a fair chance of being 'understood' on this level throughout this wide range. The implications of this are important. Adolescent groups very often seem to teachers to be uninterested, and in a way, 'unmusical'. Some of the factors in this situation have been analysed elsewhere by the writer, but the fact seems to be that there is a highly developed ability to recognise the schematic components in music at this age.¹ The problems of teaching such groups clearly fall into motivational categories rather than those of ability as such, and it may be that there are problems over what we have called the second level of understanding: there could be problems of finding the right 'distance' from the music at this age. If this is the case then we might argue for greater concentration on performance and technical development at this time rather than any attempt to cajole pupils into 'liking' particular pieces. We can offer help to bring about techniques and skills and to develop the first level of understanding, but the second level, what a work might mean for an individual is practically beyond our control. It is the old story of taking a horse to water: whether he drinks or not is his affair.

This thesis represents an attempt to explore a complicated inter-disciplinary area. Because the problems of aesthetic research are not at all clearly defined at the outset, it has been necessary to locate the empirical work in a fairly speculative framework, but one that

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op. cit. Swornick, K.

is reasonable and takes account of the main theories of art and music. Within the limits and uncertainties that remain, it is hoped that the findings might be of value in three main ways.

We would hope to have shown the possibility of developing experimental work in the field of aesthetics and response to art, and to have indicated important criteria for this. It is also hoped that there has been some clarification and extension of the more general educational and philosophical debate concerned with aesthetic experience, including what we mean by 'education of the emotions'. Thirdly, the findings do seem to offer some guidance in the formulation of principles and the development of practice in music education. This of course, is of particular value at the present time when both music and education are changing at great speed and the tools of evaluation are not properly developed.

The answers to the important questions of meaning in music and the education of the emotions are not tidy ones, but it is hoped that this thesis will be seen as a useful exploration of a difficult terrain.

Appendix I

MUSIC EXAMPLES NOT INCLUDED
IN THE TEXT

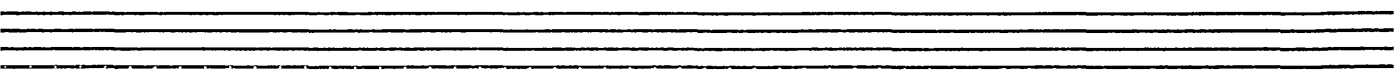
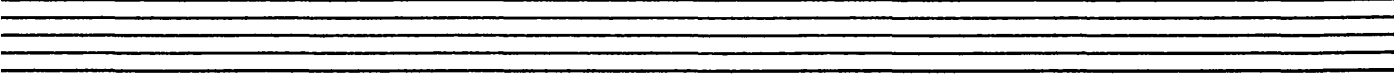
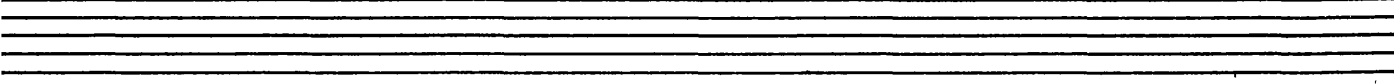
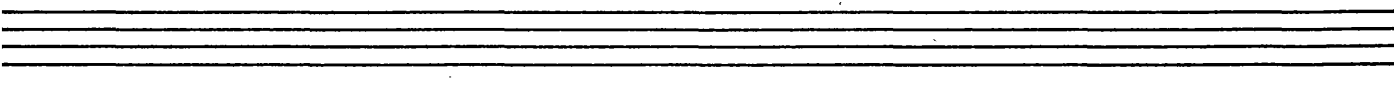
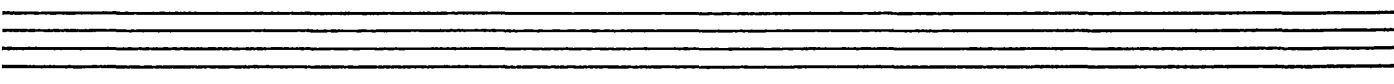
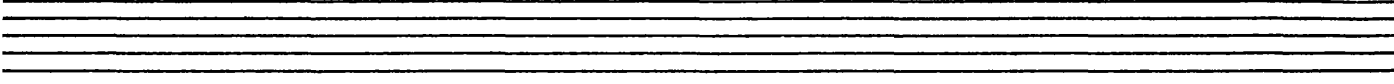
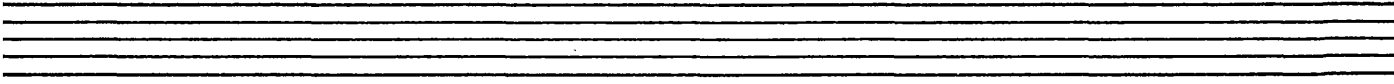
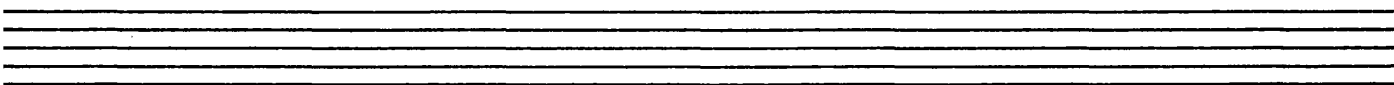
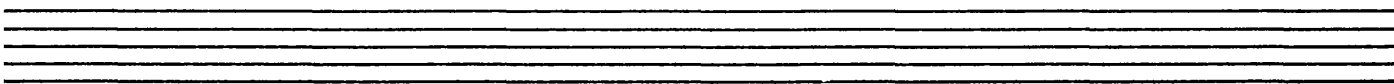
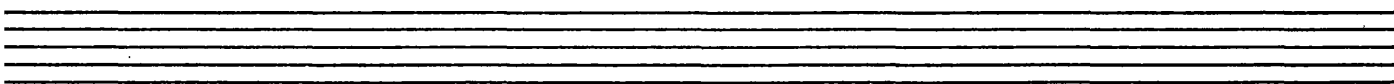
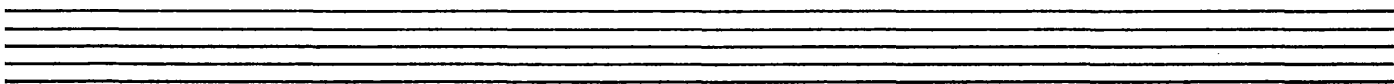
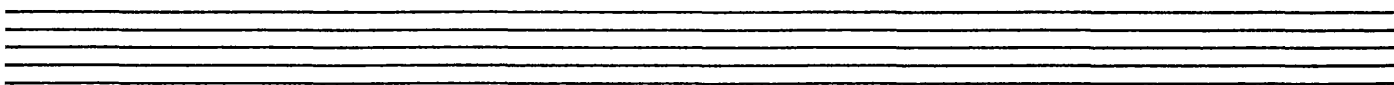
Music Examples for the First Test in order of presentation.

♩ = 66 M.M.

Each number 3 times

Handwritten musical notation for 20 examples, numbered 1 to 20, in treble clef with a key signature of one flat. The notation includes various musical symbols such as notes, rests, slurs, and dynamic markings like 'f' and 'FLUTE'.

Examples 1 through 20 are presented in a single system, with each example consisting of a single staff. The notation is handwritten and includes various musical symbols such as notes, rests, slurs, and dynamic markings like 'f' and 'FLUTE'.

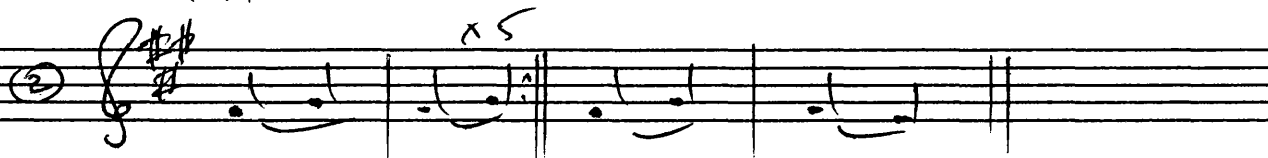
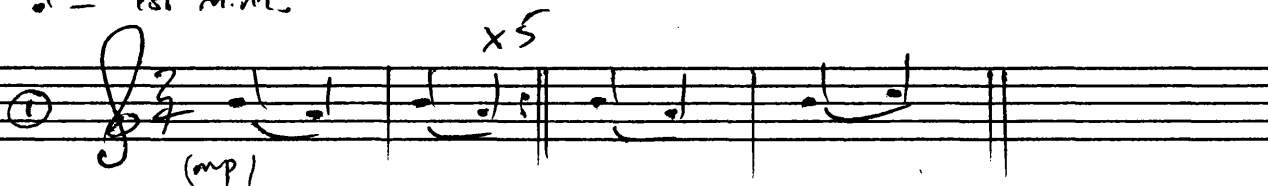


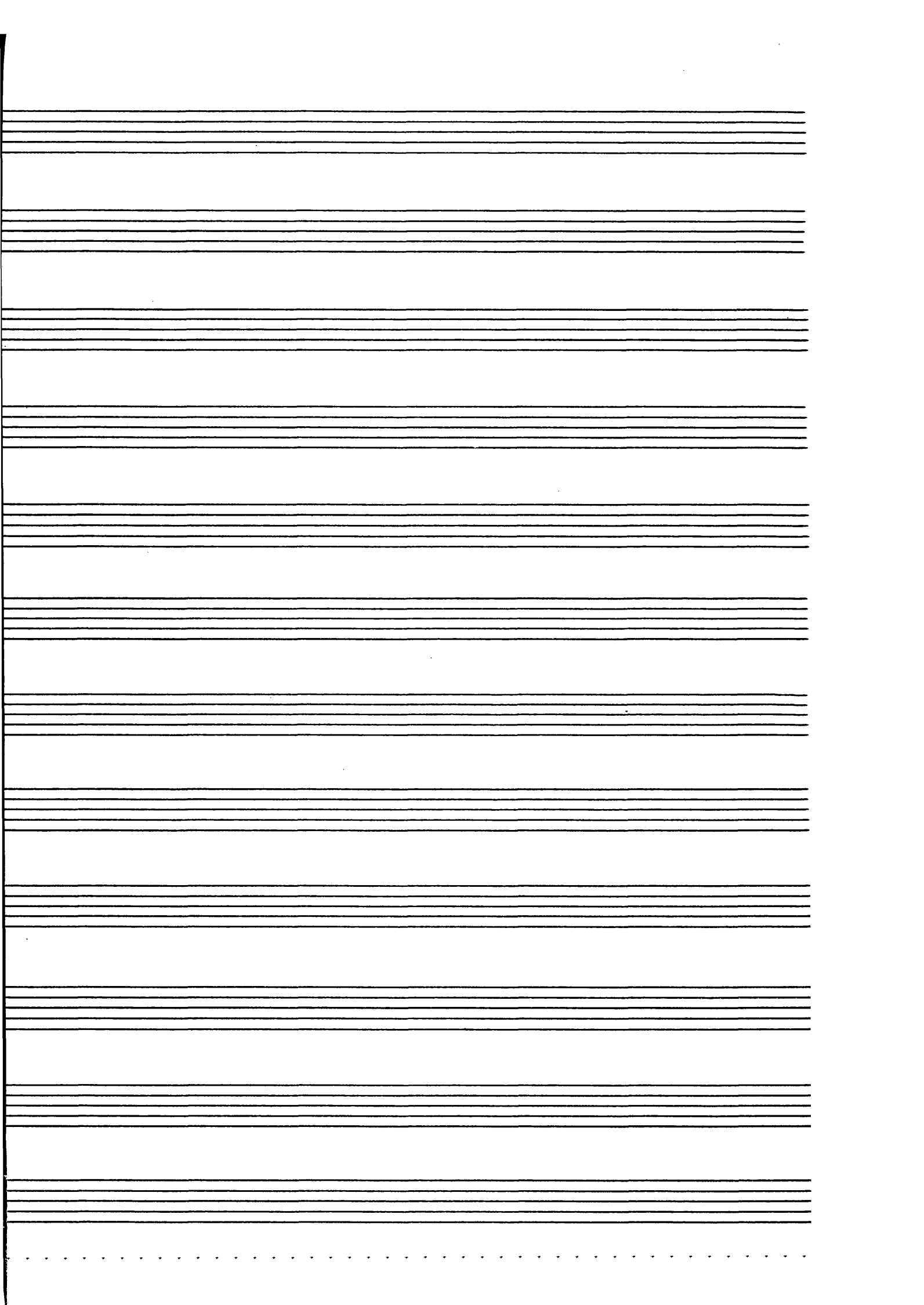


Music Examples for the Second Test in order of construction.

(The rhythm events were simply twice as quick.)

♩ = 150 m.m.





Appendix II

STATISTICAL INFORMATION NOT
INCLUDED IN THE TEXT

'F' values for the Fourth Test Music/listener difference scores

(No value is significant at even the 10% level.)

	'F'
Active/passive	1.04
Large/small	1.27
Happy/sad	1.58
Light/heavy	1.02
Positive/negative	0.93
Stiff/flexible	0.91
Calm/excited	1.83
Rounded/angular	0.50
Hard/soft	0.92
Outgoing/inward-looking	1.77

Fifth Test: analysis of 'sex' effect

There was no overall significance at all for either the combination of Groups I and II or Groups II and III. Out of the thirty 'F' values for the individual scales on individual units not one was significant at a 5% level in the case of Groups I and II. For Groups II and III, the two adolescent groups, there were four significant levels at 5% out of thirty. We can therefore assume that sex difference plays no part at all in the making of these particular musical judgements.

Nor was there any interaction effect between sex and check-form or sex and ability.

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