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**Aural Skills and the Performing Musician: Function, Training and  
Assessment**

By

Alison F. McNeil

A thesis submitted for the degree of Doctor of Philosophy

at the

University of Huddersfield

July 2000

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## **Abstract**

The aim of this project is to establish whether aural skills, as they are currently assessed through the Associated Board of The Royal Schools of Music's (ABRSM) practical examinations, actively influence, inform and enhance performance skills. This research stems from perceived teachers' and performers' disquiet with regard to the relevance of, and necessity for, the assessment of such skills. In particular, this thesis explores the aural competencies that reflect, and are central to, a convincing performance.

In the first part of this research, in-depth semi-structured interviews were carried out with 23 interviewees; to identify the components of an effective, musical performance, and the skills and abilities shown by the good performer, these consisted of teachers, educationalists, performers, examiners, adjudicators, and psychologists.

The results reveal that teachers and pupils are frequently unaware of any relationship between aural skills, as defined through the ABRSM's tests, and performance ability. However, once interviewees had grasped the distinction between aural testing and the aural skills used in performance, it became apparent that they perceived the training of performance skills as relying heavily upon the acquisition and application of relevant aural abilities. The skills which were seen as vital to performance were aural imaging, 'feel', and an implicit, insightful understanding of the function and meaning of aural skills, and the realisation of these in any performance situation. This conception of aural skills is broader than that currently used in assessment. Furthermore, some interviewees proposed that specific instrumental groups may use particular aural skills to a greater or lesser extent than other instrumental groups.

The second study examined the validity of the ABRSM's performance examination, with specific reference to the aural sub-test. The results show that performers' aural marks were somewhat poorer than those for other sub-tests. Additionally, whereas all of the other sub-tests effectively discriminate between good and poor performers, the aural test marks do so only marginally.

As a direct result of the information gained through the previous two studies, sight-reading emerged as a viable task through which to assess the possibility of domain-specific aural skills,

and was subsequently built into the final experimental design. Study Three developed and piloted an unprepared-performance task, specifically designed to assess aural-imaging, a sense of pulse and rhythm, pitch and intonation awareness, expression, 'feel' and communication. Overall, this was primarily concerned with accessing and assessing the specific aural/kinaesthetic/haptic skills, which had been identified in Studies One and Two as being pertinent to performance proficiency, through tests which allowed for the transference of these abilities. The tests involved sight-reading and self-reflection and criticism, stylistic awareness, demonstration of understanding, identification of an embedded melody, and a sense of ensemble and performance. In conjunction with this, an assessor's criterion-referenced scoring strategy was designed, emphasising ways of identifying the specific performance-related aural skills.

The tests were administered to 40 subjects, consisting of 20 good and 20 poor performers. There were 10 violinists and 10 pianists in each group.

The results show that the unprepared-performance tests did discriminate between good and poor performers. However, some of the tests were more effective at discriminating than others. There was no significant difference in scores between violinists and pianists, except for Test 2, the 'embedded melody' task. This test was designed to measure aural imaging. Violinists scored significantly higher than pianists on this test, suggesting greater use of aural imaging, providing limited evidence for the domain specificity of aural skills. The presentation order of the tests did not show any effect.

Although Study Three has gone some way in designing tests that encompass a broader definition of aural skills, further research is required in order to develop the tests for use in examination. The evidence broadly supports the view that an unprepared-performance task is an appropriate form for such assessment.

Finally, the pragmatics of musical training and examination need to be addressed. At ground level teachers and performers need to be educated in ways of relating aural skills directly to performance. It is argued that the tests developed in Study Three make this relationship more explicit.

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*For Fred.*

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## PART I

...it is not the ear which hears but the instrument that plays that defines the kind of song we hear. (Reaney, 1995, p.47)

...verifiability is a matter of degrees, and neither the artist, nor the scientist who tries to break new ground, can hope ever to achieve absolute certainty. (Koestler, 1966, p.215)

## Chapter I Introduction

Anyone who writes on a complex subject must learn that he cannot aim an arrow at two targets. (Koestler, 1966, p.21)

Research into music performance, education, training and technique has been prevalent for many years. In particular, the development and measurement of aural skills, as part of the general education of musicians and performers, has been a tradition throughout this century. However, there remains little consensus about the nature of these skills or about how to assess them. The present thesis focuses on the assessment of aural ability by one of the main performance examining boards in this country, The Associated Board of the Royal Schools of Music (ABRSM). In particular, this study examines the effectiveness of the ABRSM's assessment of aural ability in relation to the findings discussed in Part I and Part II, Study Two. Despite the influence of the ABRSM's aural tests and of attitudes towards them of teachers and pupils the world over, no serious objective research has been carried out on them. Why should it be that highly able performing musicians can achieve low marks on aural tests, regard themselves as 'bad at aural', resent having to participate in aural testing, and regard aural tests as the hardest part of the exam? In comparison, the development, teaching and assessment of music in the wider context of education has been systematically monitored and standardised (QCA<sup>1</sup>, 2000).

This dissertation is the result of extensive research into the significance of aural ability for the performing musician<sup>2</sup>. More precisely, this project set out to explore and identify the fundamental skills and abilities that are pertinent to producing an effective performance, and to establish how these are manifest and utilised during performance. This project attempts to

---

1. 'Qualifications and Curriculum Authority'.

2. 'Performing musician' is used primarily to denote the traditional western concept of performance. Whilst acknowledging many other types of music performance, such as jazz and aural tradition of handing down folk-song, one would rarely find such performers taking graded performance examinations. This is arguably a limitation of such assessment bodies as the ABRSM, and should perhaps be challenged. Indeed, comparables in general music education, such as the National Curriculum, encourage familiarity of both Western and non-Western traditions of music performance, from Key Stage 1 through to GCSE, 'A' and 'AS' levels.

establish empirically the aural abilities which are required to produce an effective performance, using an inductive approach, out of which will arise specific performance-related tests to assess these skills.

The origins of this thesis sprung from my own and others' experiences of the aural test component of the ABRSM's Practical Musicianship examinations. At the age of 11, I began to question why it was that the majority of performers, at all levels of development, expressed disquiet and dread concerning these aural tests. As I progressed through the graded system, the relevance and meaning of the aural tests became harder to grasp and relate to my experience as a practical musician. As I advanced in general music education, aural testing once again appeared.

The syllabuses and methods for examining aural skills have undergone radical change, following the revolution in the teaching and learning of music begun by Maxwell Davies, Paynter, Swanwick and others in the 1970s, spurred by HMI in a seminal document, *Music 5 to 16*, in 1985, and culminating in the National Curriculum in Music, beginning in stages from 1992.

Professor Pratt's Research into Applied Musical Perception (RAMP) unit at Huddersfield, having developed thinking about how music may be listened to, with outcomes including an innovative undergraduate course, a book on aural awareness, and input to the National Curriculum Music Working Group, led me to pursue my research within the context of the RAMP unit.

The application of the National Curriculum, being recognised by Sir Ron Dearing, was shared with the Schools Council for Academic Accreditation (SCAA) as it revised the whole National Curriculum including Music. The opportunity too add to the whole debate, information and evaluation of such an influential and (irrationally) detached area of music education as the ABRSM tests of music perception was particularly timely. The findings will lead to an evaluation and refinement of the tests in association with the ABRSM who has agreed to make information available as a 'Collaborating Establishment'. My work may have far-reaching implications for the



role of music in education (both teaching and assessment), bringing us closer to an understanding of musical ability.

It must be made clear that the ABRSM did not commission this work and are not implicated in how the research questions arose. I was allowed access to resources (which included anonymous statistical data) and personnel, whilst the ideas behind the project remain my own.

This research will be presented in two parts. Part I consists of a literature review which covers the essential competencies needed for a musical performance, their training and assessment, drawing from diverse yet complementary fields of study. Part II consists of three empirical studies, drawing on both qualitative and quantitative methodologies. The first study uses an inductive method to ascertain the perceived nature of performance skills, the role that aural ability has within them, and ways of assessing aural competence. The second study focuses on the assessment of aural ability as part of the ABRSM's performance examination. The third study proposes alternative methods of assessing a performer's aural ability, based upon the research findings.

## **PART I**

Chapter II will begin by exploring the debate about the definition of musicality which has continued throughout this century. It will be seen that musicality is ill-defined, yet there is some consensus about what constitutes it. Drawing upon this literature, Chapter II will proceed by outlining the main technical, expressive and communication aspects which are thought to make up, and distinguish, an effective musical performance.

Chapter III then expands on this, with particular focus on the importance of aural proficiency. The many facets of aural ability will be discussed in relation to how they inform and facilitate performance. In particular, the integration of aural feedback and aural imaging will be discussed, in conjunction with the very nature of aural ability and its development. Fundamentally, this

consists of the need to understand the role of aural skills in performance, and how these skills relate to specific instrumental<sup>3</sup> domains.

Chapter IV continues the debate about aural ability, but is now concerned with the way in which it is taught. Ultimately, this chapter is structured around the contention and controversy which surrounds the area of aural ability; that is, whether the initial stages of teaching aural skills to a performer should be conducted in terms of declarative or procedural knowledge. Essentially, this is a debate about the way in which a performer should be taught, either predominantly through verbal description or through demonstration, and the relevance of the knowledge and understanding that each technique of tutoring facilitates, in terms of learning style and manifestation of these skills. Following on from these issues, this chapter then outlines the dominant and most common means of training aural ability; essentially, these are through demonstration, kinaesthetics, improvisation and singing.

Having established the prevailing views about the nature of aural ability and how it is manifest in performance, Chapter V leads us into the realms of examinations, that is, the prevailing perspectives on the most efficient and practical means of testing and assessing the aural ability of performing musicians. This begins by providing an historical account of the way aural skills have been assessed, for musicians generally, throughout the century. More specifically, Chapter V then surveys the ABRSM's aural tests as they are presented in their current performance examinations.

Chapter VI continues the investigation of the ABRSM's aural tests through a critique. The validity of its aural tests is debated in terms of inter-item consistency. The requirements, in terms of response, are then explored, with particular focus on the use of singing versus responding on one's instrument, the need for and nature of verbalisation, and the age-relatedness of these tests. It will be argued that the Board's examinations should test certain perceptions and abilities that it

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<sup>3</sup>. Throughout this thesis, the term 'instrument', and its derivatives, is used to denote all instrumental groups, including the voice.

currently overlooks, specifically the assessment of intonation and audiation. Finally, the very need for assessing aural skills, separately from the evidence of them contained within performance itself, is called into question.

Chapter VII provides a summary of the main issues discussed in Part I, ending with an outline of the aims to pursue in Part II.

## PART II

Part II of this thesis consists of three empirical studies. The first of these, reported in Chapter VIII, is an investigation into perceptions of the skills required to produce an effective, musical performance. The method of inquiry is qualitative in nature, necessitated by the exploratory and inductive approach. This was felt to be of particular importance so that the interviewees' responses were not bound by unnecessary restrictions. Twenty three performance teachers, educationalists, psychologists and professional performers were interviewed, a sample which aimed to represent those who are directly involved in performance teaching and learning. The aim of these interviews was to ascertain empirically opinions about the elements which are thought to make up an effective performance, the aural skills which are felt to actively influence, inform and enhance performance proficiency, the relationship between aural training and aural assessment, and to investigate the role of 'understanding' in the development and production of a 'good' performance.

Chapter IX then uses a quantitative method of analysis to probe the ABRSM's performance examination, paying particular attention to the validity of the aural sub-test. Specifically, the relationship between performers' marks on the aural sub-test and their marks on the performance examination as a whole was examined. Performers' examination score sheets were the materials analysed to assist in this enquiry.

Finally, Chapter X explores alternative means of assessing the aural skills that have been identified throughout this thesis. In particular, this task aimed to provide more relevant means of assessing performance related aural skills than the ABRSM's current format. An unprepared-performance task was suggested as being a more appropriate method of assessment.

Chapter XI consists of a summary of the research findings of Part II, culminating in a discussion about these in relation to the literature. Chapter XII concludes this thesis, with an outline of implications and suggestions for future research.

## Chapter II Criteria For Good Performance

Music exists only in the moment of its performance, for if one were ever so skilful in reading notes and had ever so lively an imagination, it cannot be denied that it is only in an unreal sense that music exists when it is read. It really exists only in being performed. (Kierkegaard, 1843, p.67)

### INTRODUCTION: DEFINING MUSICALITY

In 1969, Taylor posed the question: 'are there any constants that can be used in judging all types of musical performance?' (p.24).

Many psychologists, educationalists, and musicians have attempted to identify the essence of an effective performance with the term 'musicality', although the meaning of 'musicality' is variously defined (Elliott, 1987; Sloboda, 1985; 1991; 1994; Boyle, 1992; Persson, 1993; ABRSM, 1995). This issue has been side-stepped during the first half of the 20th century, with researchers concentrating upon underlying aspects of performance ability, such as Seashore's scientific approach to musicality (1938), without empirically establishing what an effective performance actually is. Examples of criteria that have been used to indicate or define musicality include the ability to perform an accurate account of a composer's intentions with artistic deviations (Seashore, 1938; Bruner, 1990), the ability to perceive and appreciate music by group factors or separate abilities (Wing, 1939), the ability to pick up a tune by ear and play it (Persson, 1993), a 'sensitivity for music, a predisposition for processing musical experiences, and expressions of musical skills' (Papousek, 1996, p.39), 'the ability to grasp a musical idea in its totality' (Kyne, 1967, p.162), the ability to tap into and process meaningfully the musical stimuli (Sloboda, 1988), 'a group of independently variable abilities, which may be regarded as specific manifestations in musical material of general aesthetic ability and of general intelligence' (Mainwaring, 1947, p.85), or the ability to recognise the difference between two sine waves (Bentley, 1969). In an attempt to penetrate the skills that underlie musicality, psychologists have tended to concentrate upon very

specific aspects of music performance such as pitch, rhythm, and memory, designing batteries of tests without specifying how these relate to an effective performance (Seashore, 1938; Wing, 1940; Revesz, 1946; Drake, 1954; Shuter-Dyson and Gabriel, 1981). These batteries vary in their definition of assessment; some assess the present functional level whereas others are used as predictive measurements (Seashore, 1938). Conversely, musicians have tended to judge a performance intuitively without empirical data to validate their performance criteria (Pratt, 1990; Priest, 1993). As Priest relates, 'most definitions [of a good performance] include the ability to give a committed performance, to play expressively and to communicate in a meaningful way...some aspects [are] skills which lead to this ability to give a "musical" performance' (Priest, 1989, p.176). Some music researchers who have attempted to elucidate the concept of musicality in performance describe it as being 'always a meaningful performance' (Persson, 1993, p.128) and that it '...will always claim attention...it's handled with vitality or...it adds up to a unity which impresses by its sense of rightness or completeness' (cited in Ball, 1987, p.9). This vague attempt at defining the essence of musicality indicates just how elusive and indescribable musicality is. Indeed, most researchers and assessors evade the qualitative definition of musicality, turning instead to the performer for evidence of appropriate musical behaviours that indicate musicianship. These behaviours are sought through the performer's ability to perceive, interpret and present an authoritative interpretation of the music performed 'which enable one to "utter" musically, to interpret convincingly, and to demonstrate all that they know musically' (Mainwaring, 1947).

From these diverse approaches it seems that the musicality of the performer and the musicality of the performance have not been distinguished, resulting in a *mélange* of concepts used to outline musical ability. More recently psychologists, educationalists and musicians have responded with the realisation that musicality is perhaps indefinable, yet it '...is recognised by those who have it, but [...] is difficult to define in a way acceptable to all' (Priest, 1989, p.176). The variety of terms that researchers have decided upon, encompassing intellectual, physical and emotional elements of a performance, perhaps imply certain aspects of musicality but this implication has not been explicitly recognised. Arguably, the most comprehensive definition is given by Mainwaring

(1951) which, although still vague, reflects and incorporates the prevailing descriptions of musicality. He states that musicality is '...that complex of relevant knowledge, skills, sensitive responsiveness and creativeness which in some degree is necessary for the complete musician' (Mainwaring, 1951).

The past century has witnessed a variety of methods for measuring performance proficiency, with some researchers focusing on specific aspects to assess while others emphasise more general attributes; perhaps this is the reason behind the imprecise definition of musicality. Qualitative aspects of performance are often quantified in relation to technique, historical awareness and accuracy, but often this is difficult to then translate back into qualitative terms (Persson, 1993). In the realm of education and assessment, demand for the measurement of performance achievement far outweighs the effectiveness of assessment, with syllabi dictating the learning process in lieu of the specific performance objectives relevant to the instrument. This is particularly true of aural training which will be discussed further in chapters III and IV.

The following section draws upon the work of psychologists and musicians in an attempt to establish a framework of performance which is consistent with existing theoretical analyses. The reasons for undertaking this analysis can be summarised by Revesz (1953):

The formulation of a pertinent definition of the concept of musicality presents...great difficulty. It is hard to give terse, precise form to the fund of significations and characteristics. It must therefore suffice if we establish the most important properties of the musical person, though we lay no claim to its being an exhaustive definition of musicality. (p.132)

To do this Revesz dispenses 'with a factual definition...and [tries] to describe the musical person with reference to his musical utterances and behaviour towards music' (p.133). The following sections constitute not just 'factual definitions' of performance criteria, but rather an attempt is made to flesh out the skills and abilities that frame a good performance.

## PERFORMANCE CRITERIA

By scrutinizing performance, one can begin to ascertain what underlying skills feed into this activity. Different researchers vary in their categorisation of these criteria, but nonetheless an underlying consensus as to the common features of an effective performance is evident. For example, Dorian (1966), in his theoretical work encompassing the history of music performance, categorises performance into three domains: aesthetic, historical, and technical. On the other hand, Elliott (1987) identifies five criteria which are used to judge performance: context, which encapsulates the knowledge and awareness of performance practice in 'socio-historical contexts'; technique, which encompasses the skills required for the control of an instrument and corresponding facility; expressive features, which relates to the aesthetic characteristics of a performance; structural features, a category that progresses beyond what is generally considered to encompass the minutiae of expressive features, moving towards an awareness of the overall structure and form of a work and how one interprets the micro-structure in relation to the macro-structure; and value judgements, a category that explores the 'sense of performance', stage-craft, appearance, deportment, commitment, and communication. These categories were established through Elliott's empirical research, examining the way performance is appraised by judges and professional musicians, and through self-assessment and peer-group assessment.

Elliott's five categories will be loosely used as a base line for structuring this chapter, due to his empiricism and comprehensive evaluation of performance. Although Elliott labels his categories differently from other authorities, usually his groups are flexible enough to incorporate the findings of other researchers who have investigated the skills necessary for an effective performance (Sloboda, 1988; Pratt, 1990; Priest, 1993; Salaman, 1994); deviation from Elliott's (1987) criteria will occur where other authorities disagree with, or supplement, them.

Underlying the skills needed to facilitate an effective performance, few researchers have expounded upon the training needed to develop and execute these. It is perhaps pertinent to begin this section with a preface about the context in which performance skills are defined.



Whereas Elliott (1987) identifies aspects of performance which are sought in the context of a concert performance or a music competition, Salaman (1994) distinguishes the spectrum of performance skills in relation to how we can test these. The clear distinction between Elliott's and Salaman's performance criteria is one of context. Salaman (1994), expanding on Elliott's framework, suggests four criteria for assessing musical performance together with ways in which these can be assessed:

### **Technique**

This is assessed through scales and arpeggios;

### **General musical efficiency**

This is tested through sight-reading skill;

### **Listening skills**

These are assessed through aural tests;

### **Expressive musicianship**

This is tested through prepared performance.

Salaman (1994), however, does not indicate how he interprets his headings and indeed, does not explain how the means of assessment reveals the relevant musical skill. The 'general musical efficiency' which Salaman proposes should be tested through sight-reading skills, is of particular importance; the relevance of this means of assessment will be explored in Part II of this thesis.

Salaman (1994), in defining the elements of an effective performance, employs a useful analogy comparing MOT tests with tests of musicianship. Although it is the overall assessment of the performance of the car we are interested in, the MOT test examines and amends the underlying components which make up performance efficiency. As with music performance, the

components of a car cannot really be separated into discrete elements as all are interactive and usually interdependent.

One crucial problem with this analogy is that when component parts are operating incorrectly, this may not be detectable until a complete breakdown occurs. However, one must be aware that the overt symptoms of this failure may be precipitated by more covert defects which, if left undetected, may be difficult to pinpoint and could potentially cause long term damage. In respect of these assertions, we can take the components of musical performance (the underlying properties which produce an effective overall performance) and explore these independently, as long as we can put those components back into the context of the whole (Pratt, 1990).

The following sections will outline the main categories used to assess and define performance, and the necessary skills which they denote. Essentially, these will be organised under the classifications of context, technique, and expressive features.

## **Context**

Context is discussed in the literature with two different meanings. One definition addresses the need for awareness of performance practice and the knowledge of 'socio-historic contexts' (Dorian, 1966; Elliott, 1987). The other use of context is concerned with the situation of a performance, whether it is a concert platform performance, competition, or examination (Clarke, 1988).

Context is one of three domains of description which Dorian (1966) proposes for the assessment of an effective performance. He emphasises the historical and aesthetic domains, stressing the need for intellectual and historical considerations for assessing performance, as does Elliott (1987) and Persson (1993). Historic awareness and presentation of a piece of music is referred to by Clarke (1988) as:

...a stylistic convention of a particular configuration of...expressive principles...that bring about a certain type of expressive characterisation. (p.17)

However, in most of the literature, 'context' refers to the situation in which the performance takes place; the 'mode' of performance is influenced by the audience and occasion, as well as the performer's artistic intentions (Clarke, 1987).

Many authorities agree that awareness of context is imperative to the performing musician. In a concert performance the audience/performer rapport is greatly influenced by, for example, the performer's acoustic awareness (Dowling and Harwood, 1986; Clarke, 1987; Sloboda, 1988; Pratt, 1990). In a concert performance the performer needs to be mindful of the acoustics of the room and the subsequent audience's audio perception of a performance, especially as it may appear to be quite different from that of the performer's. This awareness demands a vast amount of confidence from the performer, certain in the 'knowledge' of his or her rapport with the audience. Schumann, whilst expounding upon the wonders of Franz Liszt's playing, elucidates this point from the perspective of the listener:

I had heard him before; but it is one thing when the artist is playing before a public, and another, when he is playing before a small group- even the artist himself changes. The beautiful illuminated hall, the glow of candlelight, the handsomely dressed audience- all this tends to elevate the frame of mind of the giver as well as that of the receiver. (1834, p.155)

Although awareness of context is not strictly a feature of good performance, perhaps it is the 'material' required for a good performance (Rooley, 1990). Indeed, the two types of contextual awareness discussed are necessary for a performer to communicate his/her intentions.

Assessment by means of an examination is quite different from a concert platform performance, however. Although this study will be dealing primarily with examination assessment, it is important to cover aspects of a platform performance and how 'context' itself affects the kind of performance produced. This will further illuminate the skills required for a competent performance (O'Neill and Sloboda, 1997). These authors argue that in an examination situation one cannot experience and project intense emotions whilst performing. They also argue that experiences need to be conceptualised in order to enable externalisation. For example, for a

singer to project the emotions of a character that suffers the death of a loved one, s/he needs to understand and 'feel' what this is like before s/he is able to realise this in performance. As Ball (1987) asserts, one is rarely concerned with acoustics within an examination situation, the candidate is concerned with 'getting it right' and technique dominates (O'Neill and Sloboda, 1997).

## Technique

### Intonation/pitch

A dull but intonationally exact performance is much more palatable than a *musical*, expressive execution with appalling intonation. (Elliott, 1987, p.164)

Many musicians would agree with this quotation from Elliott, which implies that accurately pitched notes are one of the most important achievements of the amateur musician (Dorian, 1966; Dowling and Harwood, 1986; Elliott, 1987; Sloboda, 1988; Pratt, 1990; Munday, 1994a). And further, as Schumann (1834) relates, a performance which is not totally accurate can have great appeal, as long as the mistakes do not distract or detract from the performance itself. 'Accuracy' is the term primarily used throughout the literature, probably because the concept of intonation is inappropriate for a fixed-pitch instrument, such as the piano or tuned percussion. However, intonation should not be overlooked; for singers and for variable-pitched instrumentalists, great emphasis is placed on the ability to internalise a sound and reproduce it on one's instrument while monitoring the product with one's inner ear (Sloboda, 1988; Pratt, 1990; Godoy, 1997). Sloboda (1988), as a result of his research into the expert performer, stresses that self-monitoring is only effective when the performer knows 'what to listen for' (p.101). Once this skill becomes automated, e.g. in an expert performance, selective monitoring strategies operate so that the performer can function relatively independently of conscious feedback (Sloboda, 1983, 1988).

The ability to monitor and adjust the music, whilst referencing the 'inner ear', is frequently described as possessing a 'good ear' (Pratt, 1990); this skill is often evinced through the 'ability to

play or sing in tune' (Pratt, 1990, p.48). For example, Seashore (1938) argues that if a musician has a 'sound sense of dynamic, [both] temporal and qualitative<sup>1</sup> but not pitch they can never become "a good violinist or singer" ' (p.5). Seashore's (1938) 'sense of pitch' refers to the violinist's or singer's ability to manipulate intonation as a function of expression. For example, the 7th of a scale, or the 'leading note', may be intentionally sharpened to emphasis the tonality of a passage of music, anticipating a return to the tonic, perhaps. For a pianist, Seashore (1938) argues that if one lacks dynamic capacities (arguably the most important expressive device available to a pianist) one cannot become a pianist; ostensibly it is the sensitivity of living in the specific domain of an instrument which dominates the skills that are developed (Seashore, 1938). The potential domain-specificity of 'aural skills' will be discussed throughout this thesis, being of particular importance to the assessment of performance explored in chapter X.

### Tone quality/timbre

...you cannot understand why it is that some figure with a certain disposition of notes sounds altogether different from the way it apparently should sound. The reason for this is that not all sounds on the piano [for example] are of equal quality; each tone has its own properties. Some tones are stronger than others and sound very different from those of the next octave. (Stasov, 1968, p.33, on Liszt's piano transcriptions of orchestral music)

Elliott's category of tone quality is frequently referred to by its French name: timbre (Scholes, 1938; Westrup and Harrison, 1959;1984; Dorian, 1966; Elliott, 1987; Pratt, 1990). This needs to be defined and differentiated because a tone can also mean two semitones. In the context of this section, timbre is used to define the differences in tone quality of the same pitch and at varying dynamic levels (Dowling and Harwood, 1986).

The peculiarities of instrumental and registral timbre provide essential aural feedback for the performing musician. Pratt (1990) identifies the importance of this timbral distinction at three levels. First, an instrument is recognised through its timbral qualities; secondly, different registers of an instrument have very specific timbral attributes; and thirdly, any instrument has many timbral/tone-colours available on any single note, throughout the range of the instrument.

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<sup>1</sup>. The expressive use of dynamics in terms of function and quality.

Expressive elements which influence this timbral perception include dynamics, articulation, breathing, bowing and vibrato. For example, dynamics have very specific timbral attributes in relation to the register in which they are played. In all performance, both solo and ensemble work, players and singers need to identify, differentiate and manipulate the timbral qualities of their instruments and voices to accommodate and vary the style and mood of the music (Pratt, 1990). No instrument or voice will produce the same timbral quality as another.

There is a radical difference in the spectro-morphology<sup>2</sup> of different timbres; two instruments will vary greatly in their distribution of sound energy over time. 'The piano tone starts very strongly and then dies away...the violin...reaches its stable, steady-state level after 30 or 40 m.sec' (Seashore, 1938, p.79; Olson, 1967). This shows that, at least for the piano and violin, differing instruments have spectrum peaks that vary according to the fundamental frequency (Dowling and Harwood, 1986). Timbre does not exist on its own however; it 'interacts with pitch and duration' (Dowling and Harwood, 1986, p.73).

From these descriptions above, the complexity of instrumental and vocal timbre indicates how keenly the performer needs to listen, respond to and manipulate sound production as an expressive and communicative facility.

### Tempo

Since the seventeenth century, tempo has been indicated by verbal terms of expression (Scholes, 1938). Sloboda (1988) maintains that the ability to keep a constant Tempo Primo is commonplace in a 'good' performance. This relates to the overall conception of the structure of the music; one maintains an inner sense of the original tempo throughout a piece of music, particularly when digressions are made for expressive purposes or notated changes of tempo. As Beethoven believed, 'tempo...is the body of performance' (Harmoncourt, 1982). This can be illustrated by Schumann's advice to young performers:

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<sup>2</sup>. Spectro-morphology denotes the form of a sound, how the harmonics and ratios of different instruments change over time.

Play in time! The playing of some virtuosos resembles the walk of a drunken man. Do not make these your models. (1834, p.30)

Seashore (1938) provides us with observation on the expressive use of tempo:

*Tempo rubato* is one of the most important means that the artist has for interpretation of music, and this depends upon the ability to hear and the ability to produce fine shadings in time in order to produce the desired modulation. (p.91)

Tempo is used here to denote an overall speed which is indicated by verbal expression markings, rather than a metronome rate (such as crotchet= 160). Moreover, tempo is not merely an issue of pulse or metre. Rather it also denotes stylistic awareness. One only has to turn to the eighteenth and nineteenth centuries to realise the different meanings and usage of the word 'Andante', the manner in which expressive markings relate *within* music, or a composer's particular use of a word. For instance, Harnoncourt (1982) gives a detailed account of Mozart's specific use of tempo markings and vocabulary, elucidating the difference in meaning and use when compared to other compositional periods. Indeed, because of the time elapsed between composer and performer, Dorian (1966) argues that tempo is the hardest element for a musician to interpret. The following examples show the wilful intervention of performers when 'authentically' interpreting tempi. Toscanini is reputedly known to have taken nearly half as long as the metronomic markings in his Beethoven interpretations. Conversely, Sir John Eliot Gardiner is known for his quick tempi when interpreting Beethoven, arguably more akin to what Beethoven had indicated (Harnoncourt, 1982).

The performer's adherence to tempo markings is also dependent upon the context in which one is performing: a reverberant room will warrant adjustment in tempo, the performer needing to be aware of the audience's aural perception of the performance, especially as it may appear to be quite different from that of the performers. For example, in Symphony Hall Birmingham, an orchestral player might only hear him/herself, yet must be confident in the knowledge that the audience hears the overall ensemble (McNeil, 1994b). As Scholes (1938) asserts:

...what matters is not the tempo the performer actually adopts but the tempo that the listener is led to imagine he is hearing, for whilst in science things are what they are, in art things are what they seem. (p.1017)

## Rhythm

According to Westrup and Harrison (1984), rhythm is 'the organisation of music in respect to time'. With greater subtlety, Koestler defines rhythm as a 'hierarchic organisation of beat-cum-accent into measure, measure into phrase' (1966, p.525).

One is always told when sight-reading as part of a string quartet, to 'get the rhythm correct if nothing else'; on a practical level, this is one of the only ways for an ensemble to stay together. This is based on the need for imitation and communication between ensemble players. For example, performers interact and respond to one another in relation to how the music is interpreted: its stylistic idiosyncrasies, the way in which a player articulates notes and the resulting timbral effects and dynamic variation (Sloboda, 1985). For an accurate and effective performance of a rhythmic structure, the maintenance of a sense of pulse is imperative. As Harvey (1990) verifies, 'being able to play the notes accurately and rhythmically as a basis for a good performance cannot be stressed too strongly' (p.3).

The diversity of influences that rhythm imposes, and the close interaction it has with metre and pulse, is made explicit by Seashore (1938). He asserts that rhythm consists of '...grouping impressions in hearing and a capacity for doing this with precision in time and stress' (p.138), which enables '...the capacity for hearing and recalling rhythmic patterns with precision in time...[and also]...precision of accent' (p.146). Indeed, when teaching aspects of expressive timing such as rubato or rhythmic imprecision; we can recognise the difference aurally yet cannot categorise its real difference; 'this accounts in part for the intangibility of performance style' (Sloboda, 1985, p.31).

It has been argued that many elements which contribute to an effective performance do not exist in isolation; rhythm is no exception. For example, rhythm can be manipulated to interact with



tonal structure. Similar to the violinist example on p.15, instead of pitch adjustment, the violinist may push the rhythm forward in anticipation of the return to the tonic or main subject.

### Metre/pulse

Clarke (1988) defines metre as:

...a regular framework of accented and weak beats, existing at a number of levels of structure, around which individual notes and groups of notes are organised. (p.22)

Although Elliott does not specify metre or pulse in his criteria for a good performance, metre and rhythm are often treated together (Dorian, 1966; Pratt, 1990). From our mother's heartbeat to our own internal clocks, pulse underlies our whole existence; our bio-rhythms dictate our sleeping, eating, digestion, and our entire survival strategies (Shaffer, 1989). Indeed, research has shown that our pulse rate adapts to the pulse of music we attend to (Drake et al, 1997). In psychology, writers have attached importance to this innate conception of pulse and its crucial role in performance. Sloboda (1988) identifies the essence of a good performance as delivering a strong sense of metre and pulse, yet one which is flexible and operates hierarchically (Shaffer, 1981). In relation to rhythm and its harmonic function (c.f. pp.18-19), one will naturally slow towards a cadence, or to enhance a particular moment one's expressive capacities will demand a pulse which is sensitively flexible. The performer needs to understand and communicate the principle behind a minuet and trio, where the strong and weak beats fall; to elicit an *authentic* baroque performance the violinist, for instance, must be aware of the weight and light bow, the stylistic necessity of shortening note lengths, and the phrasing and timbre appropriate to the musical context. One also needs the flexibility of technique to execute this (Dorian, 1966; Elliott, 1987). This, however, may not be overtly perceivable by the listener, not knowing the precise means by which the power of the performance is achieved. Schumann (1834) succinctly echoes this point:

You know how little I care for the quarrels about tempi, and that all that matters to me is the inner pulse of movement. Thus, the quicker adagio of a cold man always seems to me more sluggish than the slower one of a sanguine man. (p.220)

In its widest application, the potency of pulse can be shown through the historical figure of Hitler and his oration (a particularly forceful and irresistible technique of communication). It is said that one of the ways he maintained this oration was through rigidity of pulse, manifest through the  $\frac{4}{4}$  of march. This resulted in a strong reaction of the listener, resulting in submission to this rhetoric. Politicians today also maintain a strong sense of pulse to portray power behind their speech; some poets manipulate the pulse and metre of language to captivate their audience. Additionally, some visual artists believe there is an underlying pulse which provides a profundity of coherence to the art-work, not necessarily one which is immediately accessible to consciousness. For example, when Munch conceived his 'Frieze of Life', he wrote:

Through the whole series runs the undulating line of the seashore. Beyond that line is the ever moving sea, while beneath the trees is life in all its fullness, its variety, its joys and sufferings. (1899/1900, p.61)

The performer's communication of music operates in a similar way. As Seashore (1919) relates, 'a person with a fine sense of time tends to feel the musical value of fine shadings in time corresponding to his capacity for hearing them' (p.92). The concept of 'feel' refers to a performer's inner movement, the inner sense of pulse. Bohm and Peat (1989) stress the importance of feel when they assert that a performer not only needs a '...comprehension [of the music] through the intellect but also a more immediate and direct perceptual contact in which there is actually a sensitive awareness and an alert attention to this "whole stream" [i.e. the overall 'movement' of the music]' (p.223); fundamentally this is the concept of 'feel'. At another level, Sloboda and Davidson (1996) describe this inner feel as

the intuition that commentators are trying to capture when they say that 'true' musical expressivity comes 'from the heart' or is 'instinctive'...Musicians who have had many strong emotion reactions to these effects while listening to music may be better equipped to mobilise this knowledge when devising an expressive performance. (Sloboda and Davidson, 1996, p.185)

Indeed, some authorities conclude that feel is musicality. For example, Truslit (1938) argues that 'the ability to experience music as motion constitutes true musicality'. A more detailed account

of feel will be discussed in chapters III and IV, where it is specifically related to aural perception and knowledge acquisition.

Research suggests that a performer's sense of pulse is either facilitated or inhibited by his/her own bodily movement (Pegg, 1991; Davidson, 1993). Davidson's (1995) research with musicians shows that the movement of the body, when combined with gesture, enhances musical performance ability and the communication of pulse. Indeed, Davidson (1995) found that without this, musicians found their expressive capacity to be highly limited. This process of gesticulating, in order to produce an effective, meaningful delivery, is also found in speech and song (Davidson, 1995); if gesticulation is deliberately restrained, our speech becomes inhibited. Perhaps this is why we 'need' to gesticulate on the telephone.

One of the main drawbacks of Elliott's (1987) study is that he removed any means of assessing visual communication. Most researchers, musicians and adjudicators however, agree that the visual presence of a performer provides vital information for the listener; it enhances audience/performer rapport and assists in communicating the expressive and gestural cues of the performer (Sloboda, 1983; Clarke, 1987; Elliott himself, 1987; Harvey, 1994).

### Dynamics

Scholes (1938) defines dynamics as 'that part of musical expression concerned with the varying degrees of intensity (loudness) of the sound produced' (p.310). Dynamic manipulation is often employed with articulation as a means for communicating emotional expression (Juslin, 1997).

On any given note one can alter these elements simultaneously or independently. For example, an organist who cannot express the music through dynamic accent will often accent his/her performance by rhythmic delay; this practice is widely accepted by musicians. Indeed, the realm of music psychology has plumbed its depths using MIDI (musical instrument digital interface) as a technique to specify precisely how it is that dynamics and articulation are utilised and to what effect (Clarke, 1988; Penel and Drake, 1997).

Researchers frequently place emphasis on the control and appropriateness of dynamic variation, which in turn can clarify the structure of the piece of music (Sloboda, 1988). Dynamics are manipulated to contrast different sections of a piece of music; at the micro-level, they are employed to provide a balance between subtle shadings of a musical phrase (Clarke, 1988; Pratt, 1990). Performance interpretation of the historical use of dynamics is also of note; for example, a 'Sforzando' of Mozart compared to that of Wagner will differ in attack, articulation, phrasing, sense of line, timbre and dynamic (Harnoncourt, 1982).

### Expressive Features

...inadequate technique...makes it impossible to judge expressive and structural features of a performance. (Elliott, 1987, p.182)

Although Pratt (1990) subsumes all the elements desired to be found in a good performance under the umbrella of 'musical expression', very little empirical research has elucidated this phenomenon. Perhaps this is due to the elusiveness of describing and controlling subjective phenomena, even more so than the fundamental elements dictated to us by notation, e.g. rhythm, duration, and pitch.

Meyer (1956), Dowling and Harwood (1986), who draw upon the theories of Berlyne (1971), Mandler (1984), Bever (1988), and Gabrielson and Juslin (1996), are all exponents of the cognitive theory of music and emotion. They are concerned with the processing of musical stimuli (music perception) and the emotional, arousal reactions of listeners. This research has provided us with insight into the expressive facilities and cues performers need to communicate an effective and affective<sup>3</sup> performance (Davidson, 1993/1995). However, the knowledge already accumulated concentrates on that which can be measured, often using rigorous experimental technique (e.g. Sloboda and Davidson, 1996); as a result, little attention has been paid to the performer's musicality (Gabrielson, 1993). Nevertheless, several studies have examined, for example, how

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<sup>3</sup>. The ability to convey expression, 'move' or 'touch' the listener.

performers manipulate rhythm as an expressive device (Clarke, 1988; Sundberg, 1988; Todd, 1989; Friberg, 1991; Friberg et al, 1991; Penel and Drake, 1997).

To enable the performer to concentrate on expressive features, researchers have indicated certain pre-requisite skills that are needed to facilitate this. Outlined below are the three most frequently referred to areas of mastery which enable freedom of expression: rehearsal, memory, and improvisation.

### Rehearsal

Specific instruction is not necessary for skill acquisition, but practice is. Through practice, and possibly developmental changes, similar stages in skill acquisition can be observed in the several generative domains. (Sloboda, 1988, p.43)

Rehearsal is essential for a musician to produce an effective performance, yet not all rehearsal is effective (Bryan and Harter, 1996; Sloboda et al, 1996). It is 'formal effortful practice [that] is a principal determinant of musical achievement...with a weaker relation between "informal playing" and achievement' (Sloboda et al, 1996, p.3). Sloboda et al (1996) identify two significant skills that are developed through practice. First, one must form 'multiple representations' of the music, so that the 'conscious mind should know what is coming next independently of what the fingers are doing' (p.91); and secondly, one needs the 'ability to think a piece through away from the instrument' (p.92).

Moreover, for a thoughtful and intelligent performance, rehearsal involves 'the conscious adaptation of instruction, appropriation of gestures, and continual monitoring of actions and goals during practice' (Davidson and Scripp, 1992, p.394). In addition to this, Meyer (1967) reports the effects that rehearsal has on a performer's understanding:

Understanding music is not merely a matter of perceiving separate sounds. It involves relating sounds to one another in such a way that they form patterns (musical events)...smaller patterns combine with one another to form larger, more extensive ones...Because listening to music is a complex art involving sensitivity of apprehension, intellect, and memory many of the implications of an event are missed on first hearing. (p.46)

The importance of meaningful practice has also been stressed by Gruson (1981), Cziko (1986) and Sloboda (1988); it is through 'understanding' one's practice that performance skills become fluent. The fruition of practice is realised in the ability to transfer learned skills to other performance situations. And further, this type of rehearsal will facilitate memorisation, a skill which is indispensable to performance (Gruson, 1981; Cziko, 1986; Sloboda, 1988).

## Memory

Memory recall is central to the musical mind and performing musician. (Seashore, 1938, p.62)

We have seen from the previous section that memory plays an important role in performance; it allows a musician to process a variety of stimuli without losing sight of the overall performance. We process musical stimuli at different levels of hierarchical structuring. At one level, we remember passages of music by patterns and their relationships, making available stored information and experience (Seashore, 1938; Sloboda, 1985); at a kinaesthetic<sup>4</sup> level, the central nervous system responds and retrieves stored experiences, commonly known as automated memory (Seashore, 1938; Sloboda, 1988). In a similar way to working memory, a memorised performance is learned by attending and attaching meaning to the musical stimuli, the result of which becomes stored in long-term memory (Warburton, 1971; Craik and Lockart, 1972; Baddeley, 1976; Sloboda, 1985; Cziko, 1986).

It may be argued that it is advantageous for a musician to perform from memory (Clarke, 1988); the process of memorisation develops 'a clear understanding of the music's structure, [it] fosters musical imagination, and allows...freedom of interpretation' (Priest, 1993, p.107). Although memorised performances are not a pre-requisite of an effective performance, they have been shown to produce more pervasive generative representational structures than the less complete

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<sup>4</sup>. Kinaesthetic refers to the sense awareness of a position and movement of the voluntary muscles of the body (Allen, R. E., 1992, p.650). For example, a trombonist may be aware of the feeling through his hand and arm of the position of the slide in order to play a certain note, or make a specific timbre.

generative structures of non- memorised performances (Clarke, 1988); the increase in knowledge and high-level hierarchical structuring is an example of the value of rehearsal.

The skill of effectively using the memory store is also crucial in the process of aural imaging. To transfer the visual score into an internal, aural representation is the accepted definition of aural imaging; once this is achieved the musician is then free to concentrate on the emotive and communicative aspects of performance, free from the visual obstacle (Seashore, 1938; Lester, 1987; Sloboda, 1988; Pratt, 1990; Townsend, 1996; Priest, 1993)- the concept and importance of aural imaging will be discussed in chapter III.

### Improvisation

*...all performance involves improvisation...there is some degree of freedom to vary the music from one performance to the next. Indeed, it is this improvisatory, unpredictable quality which makes live performance so exciting to performers and listeners alike. (Pratt, 1990, p.103)*

The skill of improvisation also depends on effective use of the memory stores. Whether one is interpreting a cadenza, or performing from memory, the improvisatory skill of the performer may portray a sense of freedom and naturalness which is (arguably) only achieved away from the written score. Ultimately, this portrayal may enhance the rapport between performer and audience. The art of improvisation involves developed aural perception, particularly effective use of the aural image (Clarke, 1988; Sloboda, 1988). Indeed, Clarke (1988) asserts that any course which aims to train aural perception should incorporate improvisation as a core component; each skill feeds into, and enhances, the other. Clarke (1988) argues that improvisation aids the understanding of the role between active-aural perception and cognition. And further, Clarke (1987) asserts that improvisation encourages:

*...students to develop an intelligent and critical approach to listening, incorporating an understanding of some aspects of basic musical structure acquired through a mixture of analytical and compositional activities. (p.44)*

Once again, it is the development of improvisation as a transferable skill that is pertinent to performance proficiency; to this end, practice is essential (Sloboda, 1988).

The link between improvisation, the development of aural skills and their relationship to performance ability provides us with a glimpse of the relevance of aural skills and their significance in attaining an effective performance. This relationship will be discussed further in chapters III and IV.

### Structural features

Only when the form is quite clear to you will the spirit become clear to you (Schumann, 1834, p.37)

This category progresses beyond what is generally considered to encompass the minutiae of expressive features, moving towards an awareness of the overall structure and form of a work; how one interprets the micro-structure in relation to the macro-structure. This incorporates the appropriateness of mood change between sections, the use of repetition and contrast, of motif and phrase, of rhythm and harmony, of dynamics, timbre and style. This heading incorporates the 'value judgements' grouping of Elliott (1987); exploring the 'sense of performance', commitment, communication and the musicality of the performer (Dorian, 1966; Sloboda, 1988). The association or disassociation between one's internal plan and external performance is reliant upon whether the musician monitors their internal model as it is externally produced; the inability to monitor auditory feedback results in a breakdown of structural consistency (Dorian, 1966; Sloboda, 1988).

Clarke (1988) identifies two integral levels of representation here. First that of musical structure, whereby the form of the music is perceived by the motor system as 'coherent and intelligent'.

Secondly, in order to generate a musical performance, one must produce and control the expressive elements of the performance. Sloboda (1988) echoes this significance of expressivity in musical performance:



Performance expertise first requires analytic listening powers of a developed kind so as to be able to 'latch on to' the minute timing and intensity variations that make a master performance and then *imitate* them. (p.88)

Although the present study does not deal directly with the expert performer, it is nonetheless important to outline the differences between an amateur performance, with which we are dealing here, and an expert performance. This will aid in the clarification of the skills needed for a good performance. The expert performance incorporates a number of sub-skills which are deployed simultaneously 'in a sustained fashion, and in a manner subservient to the overall structure of a musical composition', with a wealth of expressive reserves to enhance performance (Sloboda, 1988, p.93). The expert can transfer their general musical knowledge to other performance situations; it is the accessibility of this knowledge that distinguishes the novice from the expert (Sloboda, 1988). The technical facility of vibrato in instrumental playing and singing, independence of the hands in piano playing, and synchronisation in ensemble performance, are all examples of aspects of the expressive reserves of the expert performer. It is argued that the expert has no problem simultaneously employing these skills; they have become automated (Sloboda, 1988).

Sloboda and Davidson (1996) describe expert performance as technically secure and expressive, yet it is the expression that lifts a performance through its display of communication and flexibility. Priest (1989) suggests that a successful, expressive interpretation is the result of 'a true synthesis of invention and imitation' (p.189). This is achieved through familiarity with the music, to the degree of automatising, leaving the performer free to concentrate on expressive communication (Regelski, 1975; Bochkarev, 1997).

Priest (1989/1993) uses the idiom 'ownership' to distinguish between those who can only play the notes and those who also 'express the content...It is the ability to "utter musically"...to adopt such music as their own' that shows a sense of commitment to the performance (1993, p.107). Bruner (1990) also expands on the concept of performance ownership, asserting that a

musical person possess[es] a deep understanding of musical forms and the structure or movement plan of the work. He has a finely developed sense of style and of the strict organisation of musical processes of thought. He is able to follow the composer's intentions, even at times to anticipate them...also...to sink himself into the mood of the music...he experiences the art work so inwardly and so profoundly that he feels as though he were creating it. (pp.133- 4)

Interpretation then, can be defined as a functional coding of expressive forms and structural encoding, the structural component acting as a framework around which expression is organised (Shaffer, 1984; Clarke, 1987). As Dorian (1966) expounds 'no score...can offer complete information for its interpreter' (p.72). For the skilled performer, expression is a '...continuous variable [with] modifications of the timing, dynamic, articulation, vibrato, and timbre of notes and note groups' (Clarke, 1988, p.12; Pratt, 1990). This internal, architectural consistency within performance is demonstrated in 'each reoccurrence of a theme or figure [whereby] similar treatment of the material [occurs]' (Sloboda, 1988, p.98). Sloboda, in his research into the expert performance, concludes that inconsistency in structure is a weakness often found in an amateur performance. For example, the phrasing of a particular theme might not remain consistent during a performance. Indeed, Clarke (1988) ascertains that '...complex motor skills cannot achieve fluency if they do not develop the hierarchical structures of motor programmes' (p.7).

Continuous reference to a large body of musical knowledge is required for a fluent and intelligent performance. This concept of 'musical intelligence' is regarded as imperative to an effective performance, often being portrayed by the ability to anticipate and adjust to aural feedback (Banton, 1995; Performer/Composer, 1996; Henry et al, 1997). The response to this sensory information becomes habit for the proficient performer (Seashore, 1919). For assessment purposes, it is difficult to maintain a definite distinction between the cognitive structures of abstract musical understanding and those embodied in a motor programme for musical performance (Clarke, 1988). Indeed, Clarke (1988) shows that '...the representational structure of musical knowledge can be shown to have a generative component in all performance contexts' (p.17), but the strength of these differ. Perhaps this is one reason why performance criteria are so difficult to isolate for examination.

Although the expressive and structural features of a performance can be carried out separately, indeed a musician may possess either one of these skills, yet it is only when the musician integrates these two activities that an effective musical performance will result. However, Sloboda (1988) argues that an amateur performer is unable to integrate and communicate the performance as a conceptual whole; it is only the master musician who possesses all of these faculties, identifying and communicating a *gestalt*<sup>5</sup> performance (Sloboda, 1988).

## INTERIM CONCLUSION

Are there any constants that can be used in judging all types of musical performance?  
(Taylor, 1969, p.24)

This chapter emphasises agreement between authorities on the criteria used to judge a proficient performance, although none agree exactly as to how specific or vague these criteria should be. Taylor's (1969) fundamental question, raised more than three decades ago, has thus been partially answered, yet there is still no universal agreement as to how to categorise these elements of performance. Although Elliott's (1987) aspects of performance criteria may well be categorised differently by researchers, perhaps agreement for categorisation is not necessary, the fundamental concern being that of recognising the elements of an effective performance. The tensions found in the consistency and variation between writers' conceptualisations is evident by the bewildering array of difference of theoretical ways in which writers discuss good performance.

Many of the elements discussed to produce an effective performance incorporate the use of developed aural skills; these incorporate acoustic and timbral awareness, and the ability to 'inwardly hear'. However, to avoid an overlap of detail, the aural abilities required in performance have not been discussed. These will be explored in the following chapter.

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<sup>5</sup>. *Gestalt* is used here to refer to performance in its totality, the nature of which is not revealed simply by analysing the component parts.

A comprehensive answer to Taylor's (1969) question does not necessarily lend itself to a prescription for the training, development and assessment of these skills (to be discussed in chapters IV, VI and Part II). We need to ascertain, as reflected in the criteria above, the skills, concepts, awareness, knowledge and understanding necessary for an effective performance.

Because of the flexibility in definition of performance skills, I have chosen to summarise the overall effectiveness of performance in the words of Regelski (1975) and Seashore (1938). As well as cognition and psychomotor skills, a good performer is

efficient at recognising the relevant visual and aural clues...increasingly able to eliminate his [sic] conscious or specific attention to mediating responses and increasingly able to evaluate the accuracy of his performance on his own...making adaptive behaviour if required.  
(Regelski, 1975, p.45)

In addition to this, Seashore (1938) states that the psychology of performance

...involves the psychology of his instrument, his neuromuscular equipment, and all the factors which are determined by knowledge, feeling, action and will power. (p.25)

To conclude this chapter it should be noted that it is necessary to proceed with caution when dissecting performance ability and the essence of musicality. Schumann (1834), writing on the performance ability and musicality of Mendelssohn, consolidates this conviction as follows:

No one doubts the identity of a rosebush that spreads bloom and perfume around it, or of an eye that gazes happily toward the moon. (p.211)

Perhaps it would be wise to remember that '...reality is inexhaustible and whatever we say a thing is, it is something more and also something different' (Bohm and Peat, 1989, p.210).

## **Chapter III The Essentials of Aural Ability**

We teach ear training and we have taught it for some time, but what degrees of perceptual faculty are required in order to be 'effective' as a musician? (Carlsen, 1969, p.8)

### **DEFINING AURAL ABILITY**

As early as 1969, James C. Carlsen questioned the aural skills necessary to achieve an effective performance. In particular, he inquired whether the possession of aural skills is necessary to achieve a creditable performance. From the discussion in chapter II, it is evident how important a part aural skills are thought to play in a musician's life: for a composer, a critic, a conductor, a performer (Ramsey, 1983; Sloboda, 1985; Hill, 1987; Pratt, 1990; McPherson, 1992; Persson, 1993; ABRSM, 1995). Sloboda (1988) has shown that most research in music psychology concentrates on listening rather than performance, yet little has been done to establish exactly what listening skills are required to be an effective performer. This raises the question: what is so imperative about the acquisition of aural skills for the performing musician? The aim of this chapter is to establish the nature, significance, and the effect of aural ability in relation to performance proficiency.

To achieve this we need first to define what is meant by the term 'aural ability'. Aural, as defined by The Oxford Dictionary (1992), comprises phenomena 'of or relating to or received by the ear'; aural ability is the 'extent to which an individual can receive, discern, and/or process music stimuli' (Boyle, 1992). And further, the realisation of aural skills in performance is a creative act which requires the uncovering, selecting, reshuffling, combining and synthesising of 'already existing facts, faculties and skills' (Koestler, 1966, p.119).

At first glance, these definitions may seem to be describing the same concept; however, although they are all similarly related to sensory perception, they denote fundamentally different

conceptions. The dictionary definition refers only to the ear as a sensor or receptacle for aural stimuli. Boyle's (1992) description, however, goes beyond the ear as a purely receptive vehicle to an actively responsive sensory mechanism that not only receives but also perceives musical stimuli, interacting with other biological mechanisms to structure its meaning. It is also of note that Boyle (1992) does not name the sensory receptor, perhaps leaving open the suggestion that other sensory mechanisms are involved in this process. Moreover, Koestler's (1966) definition advances this interpretation when he refers to aural ability as encompassing a variety of sensory and intellectual activities. The implications of these differences will be discussed later in this chapter.

For the moment, let us explore the traditional meaning of aural ability as it relates to the ear. One may ask: do not all musicianly skills, by music's very nature, require the involvement of the ear?

As Blacking asserts:

Without biological processes of aural perception, and without cultural agreement among at least some human beings on what is perceived, there can be neither music nor musical communication. (1976, p.9)

This may seem an obvious statement, yet little research, until recently, has been concerned with the way in which performers utilise the ear whilst performing. Nevertheless, aural acuity has been, and is, an expected part of a performer's ability, which can be demonstrated through the presence of the variety of aural tests in the assessment of musicality, musicianship, and in particular performance (the area of assessment will be discussed in chapters IV, V and VI). The following sections will attempt to relate the literature on the skills needed for a proficient performance (see chapter II) to the aural skills required to achieve these. This section begins with a documentation of how researchers define 'aural feedback'. Empirical studies will illustrate the role of aural feedback in performance and how it interacts with the skill of aural imaging. The perceived relationship between aural ability and performance proficiency will then be discussed, followed by the potential domain-specific role of aural skills. Through this process, the pertinence of aural competence to the performing musician will become evident.

## AURAL FEEDBACK

The original impetus for my research was inspired by Carlsen's question, which was posed at the 'Research in Music Education' conference in the spring of 1969. Although aural skills have been assumed to be pertinent to a musician's training and performance ability during the last two decades (Sloboda, 1985; Elliott, 1987; Clarke, 1988; Salaman, 1994), there is still little consensus as to what these skills are, how these skills should be taught and how these skills should be assessed within the performing musician. (The last of these will be discussed in chapters V and VI.)

The literature revealed that there are a number of aural skills and abilities which writers agree are necessary for good performance. One of the most often discussed is aural feedback. The essence of aural feedback and how it is used in performance can be illustrated by Sloboda; he asserts that

Composers temper their compositional processes against their own aural judgement. Performers refine their performances against both their own aural awareness and their ability to image alternatives. (Sloboda, 1988, p.74)

Sloboda's statement concerns both the skill of aural imaging and the role that aural feedback plays in this ability. Let us first examine the role of aural feedback. Whilst performing we are continuously perceiving, responding, and adjusting to what our ears are telling us (Sloboda, 1988; Glennie, 1990); Hill (1987) verifies the important role of the ear during performance, asserting that the

ear provides feedback which enables the sounds produced...to be re-assessed by the mind...The performance is a constant interchange between intention and execution...The ear is the link which allows the interchange to take place. (p.56)

And

...in order to do justice to the music, one must constantly make use of the ear, because the necessary marks are not always found in the score. (C. P. E. Bach, in Schumann, 1834, p.54)

Although there appears to be only limited research from which to draw conclusions, Cook (1996) examined the role of feedback strategies used by expert performers. This timely study identified the auditory, haptic<sup>1</sup>, and memory control mechanisms necessary to regulate an effective, musical performance. Two conditions were presented: a masking task<sup>2</sup> (using headphones emitting 110dB), and a non-masking task.

Subjects prepared three short extracts based around the harmonic series of the trombone. The extracts entailed a warm-up exercise, one that required large execution of the slide, and one that needed large adjustments in lip tension.

Cook found that the numbers of incorrect notes in masked and non-masked performances were similar. His subjects immediately identified the note they had played in place of the correct note, in contrast to similar research for vocal performers which reports that subjects were unable to identify or sing the incorrect note (Ward and Burns, 1978; Campbell & Michel, 1980; Sundberg, 1981; Ternstrom et al., 1983; Shipp et al., 1984). These findings may indicate that singers do rely on auditory feedback whilst performing. In the masked task, all trombonists performed louder than in the non-masked task, with the exception of an expert with 40 years experience of playing. However, this increase in volume was not significant. When deprived of auditory feedback the performance became uncommunicative, notably with lack of vibrato. Nevertheless, all subjects performed with an increased sense of pulse during the masked task, reporting to play primarily 'by feel'. However, this term must not be misunderstood. By 'feel', Cook's subjects were referring to their memory and haptic feedback mechanisms, not the ability to feel the music in an interpretative sense (discussed in chapter IV ).

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<sup>1</sup> Haptic refers to the cutaneous sense. Generally, this incorporates the senses related to touch, temperature and pressure; i.e. the sensory receptors which lie in the skin, 'immediately below it, or in the external mucous membranes' (Reber, 1985, p.172).

<sup>2</sup> A masking task is a 'general term [used] in the study of perception for any process whereby a detectable or recognisable stimulus (called the *target*) is made difficult or impossible to detect or recognise by the presentation of a second stimulus (the *masker*) in close temporal or spatial proximity to it' (Reber, 1985, p.419). In this context, the decibels emitted through the headphones is the *masker* of any auditory feedback (the *target*).



Cook adduces that haptic channels dominate feedback or suffice when auditory feedback is inhibited, the role of memory being important for setting up the pitch positions in order to produce a haptic sensory response (Seashore, 1939). Cook concludes that auditory feedback is not necessary for an expert trombonist to perform effectively and musically. Contrary to Cook's findings, Sloboda (1988) argues that aural faculties are vital for self-monitoring and subsequent adjustment of performance. Perhaps with the high level of decibels used in Cook's (1996) masking task (110 dB) it is not surprising that brass players rely less on auditory feedback when performing. Cook's (1996) observance of the 'rigid' performances elicited from trombonists during the masked condition may provide the key to this apparent disparity. It could be argued that an inflexible performance does not denote musicality (Seashore, 1919).

One fundamental question arising out of Cook's research concerns aural ability. His results seem to suggest that when auditory feedback is inhibited during a trombonist's performance, kinaesthetic and haptic cues are sufficient. He echoes, then, the question of Carlsen (1969), raised nearly three decades ago: what perceptual and sensory feedback information is required for an effective and musical performance?

It could be argued that Cook's findings are specific to the trombonist, or possibly apply to all brass players, but there is little evidence that they are generalisable to the domain of other instrumentalists. Indeed, Fink (1970) states that 'the exact placement of the slide is determined by the ear, but you can use your eye and the feel of the arm to help you' (in Kruger et al., 1997, p.707). Cook (1996), however, argues that it is purely kinaesthetics that aid trombonists in pitch determination as no detriment to intonation was found during his aural feedback masking task. In marked contrast to this statement, Davis (1992), commenting on the art of playing the trombone, argues that 'the ear is the only reliable guide to the location of the true position *for any note*' (p.706).

Banton (1995) provides evidence from professional performers that could illuminate the apparent disparity between the need for and utilisation of aural feedback. She found that, during a sight-

reading masking task, expert pianists could audiate a score without relying on aural feedback. The piano is a fixed-pitch instrument and this could account for enhanced kinhaptic<sup>3</sup> processes utilised in advanced performers, lessening the need for the monitoring of aural feedback. Research has yet to show if this can be generalised to musicians as a whole.

Wider issues generated from Cook's research concern what aural skills we rely on in order to perform effectively as musicians. Sloboda (1987) notes how important it is for the performing musician to listen to him/herself, but what aural skills and sensory perceptions are needed in order to achieve a responsive performance?

To summarise this section, aural feedback is the ability to perceive, discriminate, monitor, respond and adjust to aural stimuli. However, the pertinence of attending to aural feedback whilst performing is an area of controversy. Indeed, research seems to suggest that the necessity for using aural feedback strategies in performance cannot be generalised to all instrumental domains; these findings seem to suggest that instrumentalists may employ differing aural skills in relation to their specific domain, or that alternative sensory cues suffice when auditory feedback is inhibited.

## AURAL IMAGING

Full, vivid, and accurate mental imagery is one of the most outstanding characteristics of a musical mind. It is this that enables the musician to live in a total world. He occasionally hears or performs music, but far more frequently images it either in recall or in anticipation. (Seashore, 1919, p.152)

Many musicians and researchers are agreed upon the importance of aural imaging in performance (Pratt, 1990; Priest, 1989, 1993; Brodsky and Henik, 1997a). This section will begin by defining aural imaging and attempt to explain why the use of this skill is thought to be

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<sup>3</sup>. Kinhaptic is shorthand for the combination of the terms kinaesthetic and haptic.

imperative for an effective performance. Finally, studies will be described that may suggest aural imaging and aural feedback as more important to some instrumental domains than others.

The ability to compare one's external sound to the sound held within the 'inner ear' is a process of imaging by sound. This skill of imaging sound is the other aural ability which is most often written about. As Priest (1993) relates:

'Aural'...should be concerned with sounds in the head and responding to them practically. These can be remembered sound patterns or new, imagined ones. (p.105)

And further

Musicians rely on Musical Imagery just as much (if not more) than the actual external sounds themselves to learn new music...and guide performances. (Brodsky and Henik, 1997a, p.170)

The ability to match accurate internal sound to external sound is described by Pratt (1990) as 'mental imaging'. Mental imaging is 'the point where you can hear the music from the printed page' (Schumann, 1834, p.31); it is hearing what one sees and seeing what one hears (Campbell and Michel, 1980). Indeed, Brodsky and Henik (1997b) suggest that

the ideal musician is the reader of music who can use notation as a visual trigger for aural impressions...he can see notation and audiate the sound it represents and he can audiate the sound and visualise the notation needed to represent it. (p.1-2)

Schumann (1834) echoes this perspective:

He is a good musician who understands the music without the score, and the score without the music. The ear should not need the eye, the eye should not need the (outward) ear. (*Florestan*, p.39)

Agnew (cited in Seashore, 1938) undertook qualitative research, using self-reporting, into the processes professionals use when they perform. He found that musicians used auditory imagery from the outset, where 'those having clearest imagery perform most artistically' (p161). On mental imagery, Seashore (1938) reports that some musicians do not have this faculty with the

result that '...some musicians are not musical' (p.162). This could be the key to an effective, musical performance. Indeed, Seashore (1938) argues that the absence of musical imagery is often revealed through a performer's inability to produce an effective and musical interpretation of a piece of music. He states that the effective performer

creates music by 'hearing it out', not by picking it out on the piano or by mere seeing of the score or by abstract theories, but by hearing it out in his creative imagination through his 'mind's ear'. (Seashore, 1938, p.5)

Furthering the definition of imaging, Hill (1987) concludes that to develop aural ability we need '...to think of music as a sound and not as dots on a page to convert into sound' (p.64).

Concurring with Hill, Regelski (1975) defines the ability to hear inwardly as 'the ability to form a mental (aural) image of the sound before the sound is actually produced; [it is] inextricably a part of performance' (p.217). This ability also reflects and requires the ability to respond to auditory feedback. As Regelski (1975) continues,

a good musician does not read music by 'eye'. He [sic] reads it 'by ear'. (p.217)

As Hill (1987) reiterates, music is too frequently absorbed 'mostly through the eye and not the ear'. He argues that this is the reason why the 'musical ear is relatively undeveloped and its potential has not been realised'. Indeed Seashore (1938), asserts that

...tonal imagery is a condition for learning, for retention, for recall, for recognition, and for the anticipation of musical facts. Take out the image from the musical mind and you take out its very essence. (p.6)

Seashore (1938) argues it is this which aids communication and an inner sense of 'feel' in performance; ultimately musicality. If there is only pure sensory motor activity in performance, it is not musical (Seashore, 1938). This is echoed in Cook's (1996) work, described above. Sloboda (1976) expands on this argument, stating that the essential processing in sight-reading occurs through musical understanding.

Priest (1989) proposes that, once learned, the aural image of a sound is enough to stimulate the action of playing it. Other authors take this one step further; they define 'aural imaging' as the skill that facilitates understanding of one's performance (Howard, 1982; Hatfield, 1987; Fowler, 1988); it is the comprehension of the music and its relationships that advances musical performance (Sloboda, 1988). The ability to 'hear inwardly', another name for aural imaging, requires the ability to transfer the visual pitch to an internal aural sound whereby the pitch produced can be referenced, monitored and adjusted to agree with the internal image. Indeed, when aural skills and techniques are already mastered, aural imaging becomes a transferable skill which performers apply to new stimuli (Sloboda, 1988; Priest, 1989).

Priest (1993) develops and expands this interpretation of aural imaging, proposing that the reference point does not necessarily have to be notation. Gordon (cited in Brodsky and Henik, 1997b) is in agreement with Priest (1993), describing the ability to aurally image as

hearing music that is not before the ear at the moment through recall, prediction, or conception; music audiated during a given experience may have been heard recently, or not so recently, or it may have been triggered...by either an external source or an internal source.

However, aural imaging is not the only feedback process that performers rely upon. As Priest (1989) found, when interviewing professional musicians, 'for most it is the kinaesthetic sense that supports the aural image in producing the desired sound' (p.185). This assertion will be discussed below.

### **The Development of Aural Imaging: The Need for Understanding**

In recent years, researchers have focused their attention on the previously relatively unexplored area of aural imaging. Inquirers have set out to investigate how this skill is developed and what processes are used to achieve this. Truslit (1938) states that ultimately, music must be experienced in the imagination, through mental imaging, to enable the musician to translate the sound production onto his/her instrument. Indeed, Truslit (1938) draws an analogy with 'ordinary speaking', asserting that there are many processes used in speech that do not reach

consciousness. Gordon follows this thought, arguing that 'the root of audiation is the combining of aural and oral abilities [where]...Inner Hearing is dependent on a continuous process of moving back and forth from the aural to oral channels and modes of activity' (in Brodsky and Henik, 1997b). In essence, Gordon proposes that this is how audiation develops. Agnew (cited in Seashore, 1938) echoes these thoughts, urging initial study away from one's instrument to enable and facilitate the ability to process aural imagery. He argues that this activity will result in a more musical performance.

In order to develop this inner ear, many authors agree that playing by ear (McPherson, 1996), improvising (Clarke, 1988), silent reading (Schumann, 1834) and sight-singing (Regelski, 1975) will advance this skill of aural imaging (all of these activities will be discussed in chapter IV). However, it is unclear whether these activities mature the skill of aural imaging or rather that the ability to image aurally facilitates one's proficiency in playing by ear, sight-reading and improvising. Indeed, perhaps the understanding of the relationships between notation, aural imaging and self-monitoring, culminating in a transferable skill, provides the necessary processes to develop aural imaging (Seashore, 1967; Regelski, 1975; Davidson and Scripp, 1994; McPherson, 1996).

The intellectual understanding of the association between performance and these aural skills is stressed by Serafine (1988). She argues that what occurs in the head does not occur in the music because the music reveals the product not the process. In stark contrast to Blacking (1976), Serafine (1988) argues that:

Sound appears to be neither necessary nor sufficient for the occurrence of music...music's defining characteristic is not that it involves sound...but rather that it involves a particular set of thought processes. Moreover, these processes operate in part on the domain of time, not sound, and in part in a more abstract, even formal, domain. (p.25, in Karma, 1994, p.22)

These 'thought processes' have been alternatively described as the ability to 'think in sound' (McPherson, 1996) or 'thinking about thinking' (Swanwick and Tillman, 1986). These metacognitive activities include self-reflection, understanding and 'knowing how to connect what

is in the mind with the instrumental fingerings necessary to execute one's thoughts' (McPherson, 1996, p.170). Pragmatically, these abilities are evinced through skills such as improvisation, playing by ear and from memory, and sight-reading. It is the ability to transfer and realise cognitive understanding into functional performance practice that is the essence of an effective performance.

In his research into cognitive strategy in performance practice, McPherson (1996) found that 'older, more experienced subjects reported mentally rehearsing (i.e. silently singing while fingering) music when preparing to perform from memory'. Young, less experienced subjects '...often fail to connect what they hear in their mind with the instrumental fingerings needed to execute these thoughts' (McPherson, 1996). He found that subjects who reported frequently playing by ear and improvising were those who reported aural imaging skills. Perhaps this is the crucial link between the eye, the ear and the hand when sight-reading. Further to this, McPherson (1996) also found that

...the weakest subjects displayed a naive understanding of how to transfer information obtained from the notation or aurally into an appropriate musical response. Their comments show how lacking they were in ability to internalise and co-ordinate musical skills, as evidenced in an orientation to think in symbols rather than in sound...These subjects lacked sufficient understanding of how to monitor and control their performance and were unable to co-ordinate the types of musical relations needed to successfully overcome the problems encountered when performing on each of the measures. (pp.11-12)

More specifically, Hallam (1996) suggests that audiation determines learning strategy, style, and the process of interpretation. This implies that it is the ability to aurally image and monitor the aural feedback that are the fundamental skills; suggesting that if performers are effective in using these skills then the learning strategy by which they are employed is irrelevant. The implications this has for teaching these skills and the manner in which these are to be accessed during assessment will be discussed in chapters IV and V.

McPherson's (1996) research echoes the insights of Seashore (1938) and Hill (1987), which provide some insight into skills and activities required to enhance performance proficiency. McPherson's (1996) study provides support for the theory that the effective use of aural feedback directly

connects with the ability to aurally image; there cannot be one without the other. In turn, awareness and understanding of how these skills functionally and practically facilitate performance is essential; it is the ability to transfer these skills to other performance situations that denotes its acquisition (transference will be discussed in chapters V and VI).

Davidson and Scripp (1994) also identify this need for musical understanding. They describe the essence of a performer's comprehension, explored both 'in performance and outside of performance' as 'ways of knowing'. This is identified in three distinct ways of musical knowing: musical production, perception and reflection. These three concepts can be paraphrased as the ability to know, to know how to do, and to know how to communicate. Both perception and reflection incorporate the combined skill of audiation ( i.e. the combined skills of aural imaging and the use of aural feedback). The concentration required for monitoring and adjusting to aural feedback requires an understanding of what one has heard; only with understanding is one able to develop the ability to use aural feedback. Researchers agree that comprehension is the key to developing aural feedback strategies and without this, effective self-monitoring becomes ineffective. The sense in which understanding is used here denotes an insightful, implicit knowledge of performance-related aural skills; it is procedural knowledge, (which is characterised as 'knowing how to' rather than declarative knowledge, which is defined as 'knowing that') that which does not necessarily have to be spoken (this will be discussed further in chapter IV). When one is able to correct one's performance through the aid of aural feedback, the finger responses required to fulfil this will often follow automatically because one can hear and understand the music, often with an inner 'feel' for the music (Hill, 1987) - the concept of 'feel' will be discussed in chapter IV.

### Memory

We have seen how important memory is to the performing musician, particularly its role in aural imaging and the development of understanding. Indeed, Seashore (1938) argues that 'musical imagery is necessary in all forms of musical memory' (p.169). Truslit's (1938) theory also relates the conception and the relevance of understanding to the memorisation process; it is when



'sequences of tones are conceived as wholes, which provides the psychologically correct foundation for memory performance' (p.68). Halpern (1988a, 1988b, 1989) presents evidence that it is present time and pitch characteristics that are processed as a 'mental image', with time increasing for processing as the interval increases. As Sloboda (1988) has argued above, both memorisation and the utilisation of aural feedback are essentially skills that require the ability to image in sound. Agnew (in Seashore, 1938) echoes Hatfield (1987) and Pegg (1991) when he argues that 'those who are strong on imagery memorise easily' (p.167). Continuing this thought, Pegg (1991) argues that the concomitant ability to memorise enhances interpretation and communication skills. Much complex music needs to be memorised because the musician may find it increasingly unworkable to read a score quickly enough whilst performing (Hill, 1987).

Nuki (1984) found that inner ear training, particularly the solfeggio method<sup>4</sup>, and the degree of understanding as to how music is constructed, is also crucial to memory processing. Indeed, when pianists read a piece of music through before performing it, Nuki (1984) found that they were more able to commit the music to memory than when they only played it through initially (kinaesthetically) or heard the music without having imaged it first. Nuki (1984) argues that these findings imply that pianists are creating images from the notation to enable memorisation of the music. Perhaps this imaging is what is occurring in Cook's (1996) study (c.f. pp.34-36), where trombonists are using imaging but do not need the aural feedback to monitor their performances. Indeed, Banton (1995) concludes that the greater the ability to listen to, hear and visualise a score, the quicker and more accurate the process of memorisation.

However, when we image, it is not simply an act of remembering; it is the 'mental image of it your mind is making' (Reaney, 1995, p.72). It now becomes a focused concept:

The mind has to become receptive to the depth of the imaginal field in order to access insight; it has to 'tune in' to the right 'wavelength'. This process is not under our 'conscious' control because it is a function of what we are, not what we do. (Reaney, 1995, p.74)

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<sup>4</sup> The solfeggio method is a form of ear training which uses singing exercises to the syllables of 'sol-fa'. (Wilson, C., 1986)

## The Nature of Aural Imaging: Domain-Specificity

The difference between...learning through trial and error and learning 'by insight' becomes glaringly obvious if you compare what happens during an elementary violin lesson and an equally elementary singing lesson. The choir boy can rely on his innate, multiple auditory-vocal feedbacks- operating through the air, through his bones, and through proprioceptive<sup>5</sup> sensations from his vocal tract- to control his voice. But there exist no innate feedbacks between the violin student's cochlea and finger-muscles, to control their motions. No amount of theoretical insight into the working of the instrument can replace this handicap; it can only be overcome by supplementing insight with trial and error...human beings are biologically less 'ripe' for learning the violin than for learning to sing. (Koestler, 1966, p.553)

One important ability attached to inner hearing is the ability to image timbre (Ericson, 1975, in Deutsch, 1982, p.124; Henson, 1987). There is still little research into this area yet results suggest that when a performer images, it is the timbre of their particular instrument that is referenced. For example, Stowman (1996) undertook a study to determine the extent to which college level students reference their knowledge of the trumpet during ear training. Trumpeters play particularly by overtone series and related tonal structures; it is these specific timbral characteristics that temper perception of specific intervals. Stowman (1996) shows that these 'expectancies' alter the perception of melodic material on other instruments, e.g. the piano. However, Stowman used pre-recorded trumpet material for the test stimuli which, one may argue, does not present the 'real' acoustic idiosyncrasies of the trumpet. In spite of this potential problem, his subjects successfully detected error of melody ('slight variation') with a written score. Furthermore, when the melodies were played on the trumpet, in place of the piano, subjects were more accurate in detecting error rate. From these results, Stowman (1996) infers that trumpeters specifically reference the timbral qualities of their instrument during ear training, using the overtone series as a tonal reference point.

Furthering these findings, Cziko (1986) proposes that all instrumentalists utilise different reading, audiation, and listening skills when learning to perform. For example:

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<sup>5</sup>. Proprioceptive refers to 'all sensory systems that are involved in providing information about position, location, orientation and movement of the body (and its parts)', (Reber, 1985, p.584). In general, this refers to both kinaesthetic and haptic senses.

...on the piano any given tone can be produced by a multitude of fingerings and hand positions while woodwinds have a much more regular fingering pitch system since a given pitch is usually always produced with the same fingering and hand positions. (Cziko, 1986, p.91)

May and Elliott (1980) also suggest that the extent to which aural skills are employed during ensemble performance may be dependent upon the instrument played. To emphasise this, Yeager (1952, in May and Elliott, 1980) found that wind players, in comparison with pianists, organists and singers, are significantly less able to detect disparities between visually and aurally presented stimuli. Perhaps this echoes Cook's findings, where trombonists rely on haptic and kinaesthetic skills when aural feedback is masked. Furthermore, Stecklein and Aliferis (1957) found that string players were more able to identify disparities between visually and aurally presented stimuli than any other instrumentalist, with pianists following closely behind.

The results of these studies may indicate a possibility that different instrumentalists use different aural skills. However, there may be other factors influencing these results. The instrument on which the stimuli is presented may well affect one's ability to respond effectively. For example, May and Elliott (1980) conclude that the number of years of piano study were significant in the development of aural skills, regardless of other instruments played. It is suggested that the stimuli, which were presented on the piano, may well be biased towards pianists because they will be able to relate to that specific timbre. It is suggested then, that this study cannot draw the conclusion that piano proficiency develops aural skills because the tests themselves are piano oriented. Nonetheless, whether or not the findings can thus be interpreted, authors stress the importance of developing timbral awareness and identifying timbral characteristics. For example, Schumann (1834) asserts:

Start early to observe the tone and character of the different instruments; try to impress the tone color peculiar to each upon your ear. (p.35)

And further

The cultivation of the ear is of the greatest importance. Endeavour, in good time, to distinguish tone and keys. The bell, the window pane, the cuckoo - seek to discover what tones they produce. (Schumann, 1834, p.30)

Mental imagery, then, seems to be affected by timbre; as Edlund (1997) reports, there are differences in motor patterning and in mental representation 'that are encountered when the "same" music is played on various instruments' (p.697). Edlund (1997) argues further that

...knowledge of the motor aspects of music-making is an essential component in our attempt to form a comprehensive understanding of music. When [music is] rendered on an instrument...this musical structure [of repetition, sequence, balance, etc.] is broken against the muscular functions of our anatomic apparatus and the basic conditions of sound production associated with each instrument, as well as against the layout of the tones on the instrument and the technical solution chosen by the musician in each specific case. These conditions join to make up a...proprioceptive structure that...coexists with the representation of the musical structure. (p.697)

From the studies discussed above, it can be argued that both the kinaesthetic, haptic and auditory response, and the specific timbral qualities of a particular instrument, are key references for an effective performance. In concrete terms, the type and degree of aural imaging may vary for each instrumentalist group. The implications this may have for assessment will be discussed in chapters VI, VIII, XI and X.

## INTERIM CONCLUSION

There are several issues that arise from this literature. The aural skills which are thought to be pertinent to performance proficiency are the ability to monitor and respond to aural feedback, via the utilisation of the aural image. Acquisition of the awareness of aural feedback and understanding of the role it plays in performance are vital before one can utilise the aural image. There is a consensus that the inability to bring them to reality in performance is the main reason for an ineffective performance.

Indeed, the ability to audiate internally, and to integrate this skill within performance, is seminal to a musical performance. The implicit understanding of how aural skills are intertwined with performance, and knowing how to manipulate these skills as a function of expression, is paramount to a convincing performance.

There seems grounds for suggesting that a performer references his/her particular instrument when imaging. This not only refers to timbral characteristics, but also to other sensory mechanisms. It was suggested that for some instrumental groups, kinaesthetic and haptic cues are more important than the aural image.

I will end this chapter with a quotation from Schumann (1834), which summarises the aural skills necessary to produce an effective performance.

What do we mean by being musical? You are not so when, with eyes painfully fixed on the notes, you struggle through a piece...But you are musical...in short, when you have taken music not only into your fingers, but into your heart and head.

How may one become musical in this sense? Dear child, the principal requisites, a fine ear and a swift power of comprehension, come, like all things, from above. But this foundation may and must be improved and enlarged. You cannot do this by shutting yourself up all day like a hermit, practising mechanical exercises, but by a vital, many-sided musical activity...(pp.34 - 5)

## Chapter IV Teaching Performance-Related Aural Skills

[The] processes associated with...learning, development and practice must be identified. This means identifying the nature and relationship of cognitive skills underlying musical production, perception, and reflection- prior to, within, and extending beyond the moment of musical performance. (Baxter and Stauffer, 1988, pp.63-4)

### INTRODUCTION

Aural ability is

fundamental to all musical experience and skill. In practice it is often inadequately provided for in the study of music. (Thackray, 1978, p.3)

Chapters II and III have discussed the fundamental importance of aural skills in relation to performance ability yet, as Thackray's (1978) statement suggests, in the 1970s, little work had been done, or was becoming established, in methods of teaching. The necessity to teach 'aural' was now being brought to the forefront of learning and training techniques. Although the majority of researchers and educationalists agree that aural skills should initially be taught away from musical notation, there is still a lack of consensus about how one should teach aural skills in order to facilitate performance efficiency. We now turn to ways in which these aural skills have been taught and developed. In addition to this, the performance behavioural characteristics which make manifest these competencies will be explored.

This chapter will begin by outlining the prevailing views which assert that audiation should be taught prior to reading music notation. After the initial stages of teaching have been explored, there follows a debate concerning the methods of teaching performance-related aural skills. This essentially revolves around the acquisition of knowledge; that is, the teaching methodologies used to develop an understanding of the relationship between aural and performance skills, how to integrate these skills effectively and subsequently, in what way these become manifest.

Fundamentally, this debate will focus on declarative and procedural methods of teaching aural ability and the implications these have for skill acquisition. It will be argued that the methods used to teach these skills are predominantly assessment-driven; it is precisely because of the need for assessment that aural skills are taught in a specific way and are subsequently monitored by precise behavioural manifestations.

## TEACHING AURAL FIRST

This section outlines the most popular approach to teaching performance-related aural skills. It should be noted that this school of thought is primarily adhered to at the initial stage of learning an instrument, and should be read with this context in mind.

There is mounting evidence to suggest that, from both the teacher's and performer's perspective, aural skills are more effectively developed when they are taught prior to reading music notation (Elliott, 1987; Lester, 1987; McPherson, 1992; Priest, 1993; McNeil, 1994). The main theoretical stance for this is based upon the need to develop an understanding of the functional properties of music (e.g. how aural imaging and monitoring feedback are essential to performance). This philosophy is derived from comparable theories of language acquisition; for example, the effective acquisition of aural skills is explained through the sequence of learning. Crane (1915) outlines the succession of development as follows: during the first two years of learning an instrument one should be instructed through the ear; primarily this involves imitating the song of another, a skill which is initially developed away from the instrument (unless the instrument is the voice). Once this singing ability has been mastered, an ability which is arguably vital to developing effective performance skills (discussed later in this chapter), the pupil is then ready to be taught to read and play from notation (Crane, 1915).

Originally a method developed in Japan, the Suzuki<sup>1</sup> principle also draws an analogy with language. Once technique, posture, and tone production are assimilated, only then do Suzuki pupils begin to read notation (Lester, 1995). This way of learning, through aural and oral capabilities, is likened to the way we process language when learning to conceptualise speech (Shaffer, 1989). For example, an infant is highly receptive to both aural and visual stimuli. Neonates can recognise their mother's voice and respond to it by imitation and repetition (Butterfield and Siperstein, 1972, in Shaffer, 1989, pp.205-207; Crane, 1986; Brown, 1995). They can discriminate between aural stimuli that differ in volume, duration, spatial location and frequency (Bower, 1982, as in Shaffer, 1989, pp.193-4). As Shaffer (1989) states:

a baby's general responsiveness to the speech of his [sic] companions (by repetition and imitation) is a characteristic that will help him to elicit the attention and interpersonal contact that should contribute in a positive way to his social, emotional, and intellectual development. (p.194)

Although a performer might need to develop aural skills prior to acquiring reading skills, it is not clear whether Crane (1915) implies that aural skills facilitate and enhance reading ability. Indeed, neither does Crane establish whether reading would inhibit performance proficiency if it was introduced before aural skills were in place.

However, the Suzuki methodology of training musicians does provide us with a more discernible assertion; it argues that if notational vocabulary<sup>2</sup> is learnt initially, this hinders performance progress (Lester, 1987). The methods formulated by Suzuki, Kodaly<sup>3</sup>, and other theorists have been used throughout this century in the teaching of instrumentalists (Lester, 1995). Suzuki students learn initially through listening, imitating and repeating the music produced by their teacher. At home, where parents play a prominent role in musically educating their child, musical reinforcement is a frequent stimulus. Suzuki methodology argues that repeated exposure

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1. Suzuki, S. I. (1898) was a Japanese educationalist, violin teacher, and founder of the Suzuki Method, which was '...not a mere process of music education' but a philosophy (Sadie, S. ed., 1980, p.386).

2. Both Elliott (1987) and the Suzuki methodology (Lester, 1987) refer to reading music as the ability to recognise and identify pitch names and all that music notation encompasses

3. Kodaly, Z. (1882). Kodaly was a Hungarian composer, ethnomusicologist and educationist. The 'Kodaly method' consisted of musical material taken essentially from folk music and from compositions in folk style. Its basic method is corporate singing and sol-fa.



to aural stimuli, particularly at an early age, will train aural acuity. This will strengthen the ability to focus and will ultimately teach the student to 'translate what he or she sees and hears into sound', through reading notation and the use of audiation, or to 'translate what they hear into a verbal explanation using precise vocabulary' (Lester, 1987, p.18). This methodology is influenced by the theory that if one can 'hear' a sound internally, then one can reproduce it.

Substantiating this theory, Elliott (1987), in his study on the assessment of performing musicians, proposes that learning to read music too early often inhibits the development of more important skills; it can be an obstacle to the development of musical memory, to fine technical control, to developing a sense of pulse and pitch, and to listening to others as part of a musical team (chapters II and III have discussed the importance of aural ability to facilitating musical memory and a sense of pulse). Gillespie (1991) further suggests that 'delaying note-reading training does not impair the technical process of beginning students' performance development and 'may help to facilitate it' (p.7). Comparing these learning theories to language development, it is not until two to three years after they speak that children begin to read. Lester (1987) argues that like reading a language, reading music is easier with constant aural stimulation.

Hatfield (1987) also echoes the importance of developing aural ability before instrumental ability:

...previous concentrations upon their instruments condition a finger response rather than an aurally imaginative response. The ideal that should be hoped for is that musical training comes before instrumental tuition. (p.15)

In justification for this argument, Hatfield (1987), in his study with pupils aged 11 and 12, found that they had difficulty in freeing themselves from the written page. In addition, he found that students did not understand how their aural skills related to their other musical skills, proposing that the inability to play by ear, to play from memory or to improvise are indicative of this (chapters II and III have shown that these three skills require aural imaging). Lester (1987) proposes that prior to reading, an aurally based technique of teaching would eliminate this obstacle.

To highlight the gap in his pupils' musical skills, Hatfield renames a paper of his (1987) 'Remedial Aural Training for Talented Young Musicians'; the point being that his 'talented' musicians did not possess fundamental, transferable aural skills. Indeed, chapter III suggests that the mastery of aural imaging provides the necessary understanding of the relationship between aural skills and performance ability, emerging as a transferable skill. In response to the necessity for developing aural imaging and monitoring of feedback, Hatfield (1987) recommends that all music teachers should be teachers of aural skills. He states that:

...there is a danger that students become too self-centred, concerned only with their instruments, with technical progress often being made at the expense of tone reacting and 'real hearing'. (p.14)

In support of this perspective, Priest's (1989) research indicates that 'most teachers regret that their pupils are not more spontaneous and enthusiastic in their music-making, that aural reactions are not more accurate and quicker' (p.173). He argues that:

the aural experience is the central core of musicianship. If musicianship is the central aim of instrumental teaching...then teaching methods should be aurally based. (Priest, 1989, p.177)

The research findings of Davidson and Scripp (1988) and McPherson (1995) also suggest that 'exclusive emphasis on music reading may be detrimental to the development of those audiation skills which are considered by the profession to be of vital importance' (McPherson, 1995, p.158). This was denoted by subjects' inability to play by ear or to improvise, only being able to play from the written page (comparable to Hatfield's (1987) study above).

It could be hypothesised then, that musicians who learn to read music before becoming competent on their instrument, develop poor aural skills (as they are traditionally perceived); perhaps they do not readily develop an understanding and comprehension of the way aural skills are reflected in their performance. However, it could also be argued that an understanding is established, but it is simply a matter of the inability to express this understanding. Indeed, it could be argued that the essence of understanding is a mode of knowing which does not need to be (and perhaps cannot be) expressed explicitly. Perhaps those who can verbally express musical

concepts have categorised their knowledge and understanding into different schemata<sup>4</sup> from those who cannot express verbally. This, however, does not reflect understanding or any lack of it.

Sloboda (1985) agrees that a cognitive stage which involves forming an 'abstract or symbolic internal representation of the music' should be developed, yet adds that it is the understanding a performer attaches to these representations that is vital for a musical performance to ensue. The difference in these two types of understanding, and whether it needs to be implicit or explicit, will now be discussed.

## DECLARATIVE VERSUS PROCEDURAL KNOWLEDGE

This section fundamentally concerns the strategies used to teach performance-related aural skills. We have already seen that aural ability should arguably be taught prior to reading notation and only when this has been mastered should reading ensue. Indeed, reading prior to the development of aural skills may prove detrimental. The majority of authors agree that once audiation has been mastered, reading notation and the ability to declare that knowledge is a sign of the performer's understanding of the link between aural skills and performance ability. However, it is precisely the means by which the performer communicates this understanding that authorities disagree on; primarily, this debate centres around a performer's need for declarative versus procedural knowledge.

The dichotomy between declarative and procedural knowledge relates to, and to some degree maps on to, the 'aural first/notation second' philosophy. Essentially, two arguments for effective methods of learning and subsequent assessment will be put forward. On the one hand, it will be argued that teaching skill acquisition through declarative knowledge, whereby something is

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<sup>4</sup>. Schema is an 'organised pattern of thought or action that a child develops to make sense of some aspect of his or her experience; Piaget sometimes uses the term *cognitive structures* as a synonym for *schemata*' (Shaffer, D. R., 1989, p.59, italics in original).

consciously known by the pupil and the knower is able to explicitly verbalise this knowledge, is primarily used for the purposes of assessment, whether it be part of a lesson or a performance examination. On the other hand, it is argued that procedural knowledge, which is an implicit type of learning, is just as valuable to a performer; and further, that this knowledge can only be demonstrated operationally. The acquisition of these two types of performance knowledge will be shown to reflect the teaching strategies employed. However, it should not be assumed that one form of understanding should be taught or acquired before the other.

In 1915, the Crane symposium began to explore the role of teaching and learning in performance skill acquisition. Crane (1915) examined what, when and how learning influences performance skills, placing particular emphasis on the role of perception and understanding in the development of performance-related aural skills. Crane (1915) argues that one's learning capacity, and one's ability to understand concepts and communicate ideas, varies with, among other things, age, musical achievement, physical size and psychomotor dexterity (Cziko, 1986). There is also consensus that motivation and music practice are two key components for learning to succeed. It should be noted, however, that students have variable requirements and will need a teacher to encourage motivation and develop cognitive style. Indeed, Sloboda (1985) states that 'no matter how much scientific information is available, teachers and learners must still make decisions on a largely intuitive basis' (p.231) because each pupil's cognitive system is unique and unknowable.

In chapter III, it was proposed that the effective use of aural imaging and feedback is dependent upon the ability to understand and integrate these aural skills within performance. Some authorities argue that aural skills are more effectively taught and learned in the context of performance. It is the active integration of performance-related aural skills that is arguably the objective for learning; to this end, these skills are mainly taught procedurally, through demonstration (Cziko, 1986; Clarke, 1987; Bruner, 1990). It is important to note that the focus is on the product of performance, not on the technique or the process (Cziko, 1986). For example, 'implicit teaching depends upon the provision of [musical] stimuli...from which the student

naturally and unconsciously acquires knowledge' (Cziko, 1986, p.97). Cziko further argues that explicit verbalisation is only necessary when there is a block in the performer; once this is released, the skills acquired through demonstration and imitation will develop the appropriate sensory receptors.

Let us now explore the contrasting view where it is argued that verbal, declarative learning and knowledge is necessary for a performing musician. Theories by Scholes (1938), Dorian (1966), Harnoncourt (1982) and Sloboda (1985) propose that to understand and interpret stylistic awareness of pulse and tempo, performers need to comprehend their different meaning and usage. These theorists and researchers differ from the previous school of thought in that they argue that conceptual and categorical understanding, and the ability to express this (i.e. declarative) knowledge, are vital for performance proficiency. Indeed, as Bohm and Peat (1989) argue, '...naming an object and forming concepts about it plays a crucial role in giving a definite shape and form to sense perception' (p.188). Of particular importance to this theoretical perspective is the development of memory capacity and understanding the function of music. However, this theory does not provide age-related advice and so the philosophy may well be aimed at more experienced performers. Sloboda (1988), within his study of cognitive psychological inquiry, also asserts that the performer needs to create conceptualisations of musical elements in order to understand and commit information to memory.

We have seen in chapters II and III that musical memory is an important aspect to performance and that the mastery of aural imaging and aural feedback leads to an implicit, gestalt understanding of the music (McPherson, 1995). Cook (1996) has shown how important haptic and kinaesthetic memory is for trombonists and posits, along with Truslit (1938), Nuki (1984) and Sloboda (1988), that the development of aural imaging interacts with memory and understanding. However, Sloboda's (1988) study suggests that it is the method used to train musicians that heightens categorical perception in music, whereby notes are learnt by name and scales by terminology. Sloboda (1985) argues further that the acquisition of verbal labels (musical vocabulary) enables musicians to extend their musical memory capacity through the process of

'chunking'<sup>5</sup>, enabling the trained musician to extract and store significantly more meaningful categorical information than the non-musician. He draws a distinction between musicians and non-musicians: musicians can verbalise explicitly about their performance, using technical terminology, whereas non-musicians learn procedurally. It is, for Sloboda then, the development of musical concepts through naming them that produces the difference between musicians and non-musicians. Indeed, Seashore (1938) agrees that to enhance tone production the 'correct technical terminology' needs to be used (p.159).

Sloboda's (1985) theorising, however, has its drawbacks; he compares the musical language acquisition of musicians with that of non-musicians. Lamont's (1997) work has shown that there does not exist a standard classification for the category of non-musicians; as a result of this, there is a variety of distinctly different, even opposing, definitions used by researchers. Subsequently, Lamont (1997) suggests that comparable studies between populations of musicians and non-musicians may be irrelevant.

Bruner (1990) also proposes that 'what does *not* get structured narratively suffers loss in memory' (p.56). He argues that we store and encode information in a meaningful way with reference to our internal framework of understanding. This is often achieved by means of metaphor. Indeed, metaphor has been shown to facilitate effective transfer skills in music (Edwards, 1986), the importance of which will be discussed in chapter V. Additionally, Petzold's (1966) research found that in music, children aged 6-10 years merely imitate melodies and phrases mechanically, and when asked to verbalise about what they had done, showed little understanding. They knew how to imitate a melody but had no cognitive representation of that process which could be then described in speech. Perhaps the rigidity of the performance, indicative of little musicality, suggests that his subjects had little aural awareness and so were unable to bridge the gap between listening and playing.

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<sup>5</sup>. Chunking is a term 'first suggested by George A. Miller for the organisation process whereby distinct "bits" of information are collected together perceptually and cognitively into larger, co-ordinated whole, or "chunks"' (Reber, A., 1985, p.122).

Some concrete examples, grounded in musical expression and rehearsal, may help to explain the concepts of declarative and procedural knowledge. Cziko (1986) asserts that the fundamentals of music, pitch and rhythmic discrimination and production, are learned implicitly; they are neither taught nor acquired through verbal, declarative explanation. Crane (1915) also agrees that these foundations of music are taught and learned implicitly, through movement, song and games. However, Crane argues that this procedural method of teaching is only appropriate for expressive elements of music; for technical skill, she adheres to declarative methods of teaching. Cziko (1986) and Priest (1989) assert that a successful interpretation of a piece of music is largely a result of the ability to communicate an implicit understanding of how the music works, through expression. Further to this, Cziko (1986) argues that experts perform many different expressive renditions of one piece of music, yet 'it would appear highly improbable that these artists possess explicit knowledge of these rules of performance practice' (p.96; Clarke, 1987; Bruner, 1990). This, he argues, indicates the performer's implicit understanding of the function of music, which neither requires declarative understanding, nor does the absence of declarative knowledge inhibit or hinder the performance in any way. Additionally, Cziko (1986) argues that it is the music environment which is overwhelmingly important for efficient learning to occur, not necessarily the teaching of explicit or implicit skills.

Another example that favours procedural learning can be seen in rehearsal (Davidson and Scripp, 1992), where the musician as interpreter primarily develops a global understanding of macro and micro-structures within the music and how these function together. In rehearsal, 'considerable "deconstruction" and "reconstruction" of the score' is involved (Bruner, 1990, p.85); the performer is continually informed through 'perception-in-action' (Bruner, 1990). Again, this perspective emphasises acquisition of relevant knowledge through performance itself; action has to be situated (Bruner, 1990). Although Godoy (1997) agrees with Sloboda (1985), stating that 'the production of chunks or overview images of musical sound is in fact the very condition for discrimination and knowledge in music' (p.557), Godoy also adheres to the philosophy that learning and 'insightful' understanding is more effective when acquired through performance; that is, 'there is a need for "stimulus support" in auditory imagery...meaning that images of

sound-producing actions are involved in the recall and contemplation of auditory images' (Godoy, 1997, p.558).

Cziko (1986) also argues that '...learning via music reading requires a thorough knowledge of the complex symbols and special language of musical notation and the ability to translate these written symbols to psychomotor responses either by using direct visual-psychomotor associations or by first audiating the music...and then invoking the psychomotor responses to match what has been audiated' (p.91). This suggests that the ability to read and interpret musical notation is not necessarily indicative of declarative learning or declarative knowledge; it requires the ability to utilise visual, aural, haptic and kinaesthetic imaging relative to one's instrument-domain (Seashore, 1938). Therefore, 'the dimensions for cognitive skills must be directly linked to the domain for reasons of interpretability and use' (Davidson and Scripp, 1992, p.393). The literature suggests that implicit learning can be more profitable than explicit learning; at least there is no necessity for this knowledge to be declared explicitly (Cziko, 1986; Clarke, 1988; Bohm and Peat, 1989; Priest, 1989; McNeil, 1994).

We have seen that the argument for the acquisition of declarative and/or procedural knowledge seems to relate to the teaching strategy employed (McPherson, 1996; Tafuri, 1996). Tafuri (1996) examined teaching and learning strategy in music performance education, highlighting the need for the acquisition of 'musical competence'. Here she refers to the essence of musicianship as being able to know, to know how to do, and to know how to communicate. These suggest both the acquisition of procedural and declarative knowledge. As Dewey (1902), Papert (1980) and Sloboda (1985) have shown, the most effective mode of teaching is concerned with understanding; the teacher always needs to reference new material to previous knowledge and learned concepts. If there is no reference point for the learner, understanding and the ability to transfer this information to other performance situations is found wanting. Indeed, Seashore (1938) proposes that aural training is most effective with the '...refining of knowledge of what the factor is, the will to recognise it, the power of application, and the recognition of its significance' (p.158).



Further to this, Aiello, Tanaka and Winborne (1990) found evidence that listeners either listen holistically or with a more detailed, analytical approach, regardless of their instrument of study. Indeed Salaman (1994) suggests that two types of learning theory are dominant in music teaching, that of Gestalt or linear-based learning. The Gestalt form of learning is primarily achieved through intuition, that of procedural knowledge whereas linear learning involves a more step-structured approach. However, Salaman (1994) argues that performers who learn by procedural knowledge may not easily fit into the examination regime. Indeed, Salaman (1994) suggests that those who are 'undeniably musical' may be frustrated in failing 'to match the requirements of syllabuses that are based so solidly on assumptions of the linear progress'.

The ability to name notation and use technical terminology may indeed facilitate categorisation and the memory process, but can we conclude that the ability to explicitly articulate this knowledge enhances performance ability? It may be possible that, as Cziko (1986) argues, researchers fundamentally agree that one needs to learn procedurally and only then should labels be attached; with this in place then explicit, declarative 'handles' will aid understanding. However, this is not stated by the literature; indeed there seems to be some confusion about the value and need for each type of understanding. One way in which declarative knowledge could be useful is by offering constructive criticism to peers about pieces they already perform. This will develop one's awareness of performance nuances whilst developing and enhancing musical vocabulary and cognitive processes. Here the gap is bridged between aural perception and performance through discussion (Lester, 1987). Indeed, as Elliott found (1987), self-assessment provides a 'realistic' appreciation of one's performance, enthusiastically endorsing a move towards young people self-assessing and assessing their peers. Seashore (1938) also emphasises the necessity for self-recognition of error.

It has been suggested that an understanding of the integral relationship between aural ability and performance proficiency may provide the key to an effective, musical performance. This theory is in accord with music researchers such as Clarke (1988) and Priest (1989, 1993) in that the mind and body are integrated when musical understanding ensues. This understanding may not

necessarily be declarative, however. Perhaps the knowledge is not only procedural, but also something more than this. Perhaps this is the definition of musicality, the term which is so frequently ill-defined. The ramifications of this statement will be discussed in chapter V - testing and assessment.

In addition to Clarke (1988) and Priest (1989, 1993), Bohm and Peat (1989) propose that 'a very large part of what may properly be termed *consciousness* or *knowingness* is not normally accessible to awareness, and indeed, there is no reason why it should be accessible' (p.213). They further assert that '...although the boundary of awareness may be moved...conscious awareness is, broadly speaking, only a small part of the total field of consciousness or knowingness' (p.214). Indeed, Edwards (1986) proposes that declarative knowledge 'is knowledge about something, and it seems...that aural knowledge and images may be a form of [declarative] knowledge' (p.152). Perhaps attention is a more appropriate word to describe the processes involved in developing a knowingness, an 'inner activity that is needed to grasp the object of interest mentally' (Bohm and Peat, 1989, p.214).

Although these two theories of learning may seem disparate, they are not fundamentally opposed. The performer's procedural style of learning is concerned with the overall interpretation of a piece of music, the means of expression through which to communicate to the listener. Conversely, the need for a declarative style of learning, although it involves interpretation and expression, ultimately concerns the 'verbal' understanding of written expressive markings in the music. Where these two perspectives differ, however, is in the realms of assessment. It is possible that the ability to verbalise is only desirable because it provides a means of assessing and examining a performer's knowledge. Indeed, assessing and monitoring declarative knowledge may be the easiest way to establish whether the performer does understand, yet this may be inappropriate (as was discussed earlier). The validity of this assessment approach to performance ability will be discussed in chapter VI, where an analysis of this means of assessment will be explored in the context of performance examinations.

This section has demonstrated that there are varied views on learning. The discussion followed a debate over whether a performer needs an understanding that is declarative or whether procedural knowledge is just as effective for the performing musician. It was suggested that the need for declarative knowledge may be primarily due to the need for assessment. The implications this may have for the teaching of aural abilities will be discussed next.

## **TRAINING AURAL SKILLS**

As an integral part of the discussion above, this section concerns the training of performance-related aural skills. Let us now see how teachers and educationalists actually do this.

The means by which teachers and educationalists most frequently train aural skills are demonstration, kinaesthetics, improvisation and singing. The importance of procedural and declarative methods of teaching and learning will be discussed in relation to the extent to which these aural skills need to be monitored and assessed. That is, the extent to which declarative knowledge is needed as a part of assessment and the extent to which methods of training aural skills are a product of assessment.

### **Demonstration**

Demonstration and imitation are teaching tools that are used for developing aural skills. Indeed, Gillespie (1991) advocates that the best mode of instruction for young students is for the teacher to provide the model from whom the pupil imitates, 'accompanied by a minimum of verbal description' (p.7). However, he does not provide an age framework for this to be undertaken whereas other authors do. For example, Lester (1987) argues that between 3- 6 years of age, children delight in the notion of repetition; one only has to attend a nursery play group to observe the love of chant and repetitive verse. Garvey (1977) also found in his research on children's play that they often imitate the skills they see around them. Indeed, Greer (1980) stresses that to learn

any type of behaviour, there is a need for models from which to imitate. It will be seen that, for some educationalists, the use of teacher demonstration is seminal in facilitating a performer's ability to convey expression, communication and 'feel' (feel is used here to denote a performer's inner sense of movement). For example, Sloboda (1985) suggests there is no satisfactory way of describing expression, it is taught through demonstration. Clarke (1987) elucidates this further in performance style where a performer brings out 'expressive principles' that convey a certain 'expressive characterisation'; it is the development of knowledge and understanding that enables the performer to do this. It is the bridging of the gap between performance-related aural skills that is identified as the means to an effective, musical performance (Clarke, 1987).

Crane (1915) asserts that imitation is the ideal starting point for teaching music as it is the means through which children have acquired all that they know when they enter school and therefore need no instruction in the art. Indeed, modelling and demonstration are argued to be the key to sustaining motivation (Sloboda and Davidson, 1996). It seems logical, then, that the training of aural ability is integrated within this framework. Cziko (1986) also proposes that teaching strategy develops related learning i.e. modelling by imitation develops implicit learning whilst teaching by instruction develops explicit learning. It will be seen that teachers primarily require either a sung response or a response on one's instrument.

The Suzuki method of teaching recognises children's' enjoyment of imitation through song and exploits this desire in order to attain early technique and the ability to memorise. Warburton (1971) also argues that imitation, through a sung response, is an ideal method to teach children aural skills and performance proficiency. One of the principal methods that advocates imitative singing is the solfeggio system of instruction, alternatively known as syllabic singing (Crane, 1915). For example, the teacher sings in words, adjusting pitch and length according to the individual, and the pupil responds by repeating the same tune with solfeggio syllables. The solfeggio system operates on musically significant syllables, which leads Crane (1915) to assert that the ability to sing the correct syllables indicates that the child hears correctly, identifying this as advancement in pitch recognition. It is the meaningfulness of these demonstrations that

facilitates a pupil's ability to grasp and emulate expressive and communicative qualities; the frequency of demonstrations is the vital factor.

In parallel to the Suzuki and Kodaly models of instrumental teaching, Gordon (1980), in his learning sequence theory which is based on his own research into musical aptitude, identifies discrimination and imitation of tonal patterns as fundamental to performance learning, denoting the use of aural skills to enable the acquisition of performance ability. All these theories, some backed by empirical research, assert that an effective means of performance teaching and learning is through demonstration and active participation; there is no need for the verbal declaration of one's skills.

Priest (1993) argues that imitation is an important modelling strategy employed during teaching. He emphasises the importance of visual stimuli; modelling and exploration of sound on one's instrument more effectively enhances aural development when the pupil is able to directly relate the visual example provided by the teacher, to his/her specific instrument. Priest (1993) calls this 'imaging the action', where 'the idea of cognition that comes from practical action [is] associated with sound but is independent of signs and labels' (p.109).

Sloboda et al (1996) note that 'it has long been established that mere repetition does not necessarily lead to improved performance'. However, Sloboda (1985) asserts that 'the cornerstones of any procedural learning are...*repetition* and *feedback*' (p.225, italics in original). The difference between 'mere repetition' and active learning can be summed up by Seashore (1938). He asserts that meaningful and effective learning, rather than learning by rote, occurs when the performer approaches '...it with the habit of intending to master it...instead of listening in a blank manner' (Seashore, 1938, p.151). And further, '...practice each unit, bind the successive units together, but always by recall and not by repeating impression' (Seashore, 1938, p.152). Pilcher-Clayton (1996) also proposes that, to develop effective imaging and feedback skills, demonstration provides the forum for a performer's self-criticism. She suggests that

demonstration is 'an effective method which requires the student to listen carefully' (1996, p.9).

For example

If a pupil is holding a note through a rest; play the phrase with and then without the rest, and ask him to spot the difference. Once the pupil has done so...discuss the sound, and he will learn to hear the rest as a positive part of the music. This style of aural teaching can be used for inaccurately read or pitched notes, dynamics, rhythm, articulation, tempo, style, and more subtle shading of tone colour and phrasing, relevant to the pupils stage of development. (Pilcher-Clayton, 1996, p.9)

Rooley (1990) similarly stresses the importance of self-observation, which 'is essential to the performer, in order that a finer knowledge of one's own changing condition can temper the specific performance of the work in hand' (p.62). For example, he proposes that through imitation and repetition, and through monitoring one's performance and refining it, one develops the ability to co-ordinate a series of aural, visual, and kinaesthetic cues and acts that enable the performer to hear 'inwardly'. It was seen in chapters II and III that active learning, through monitoring and adjusting to feedback, is imperative for the development of performance-related aural skills.

Sang (1986) researched the effectiveness of declarative and procedural training techniques on learning. He found that performance modelling and demonstration were more effective for learning than any method of verbalisation:

...a teacher's ability to model *and* the degree of use of demonstrations in the instrumental class do indeed have bearing upon pupil performance levels. Teachers who have stronger modelling skills *and* apply those skills in teaching are more likely to produce students who perform better than teachers who do not. (Sang, 1986, p.47, italics in original)

Priest (1993) endorses this view in his statement that pupils and teachers should 'have their eyes free for each other rather than fixed constantly at the tutor-book' (p.106). Dickey (1991), in his study on the effects of learning through verbal instruction and through non-verbal modelling, examined gesture as a means of communication; this was based on the assumption that it is common for a conductor's gesture to communicate more than words. He found that demonstration, through imitation of melodic patterns, led to 'significantly improved ear- to- hand

skills' (p.137), more so than for those subjects who were instructed verbally. Not only did modelling improve aural skills, but pupils were more able to transfer these learnt skills to other performance situations than were the declaratively taught subjects. Dickey (1991) also found that non-verbal modelling enhanced rhythmic movement through the development of a kinaesthetic response (discussed below). He suggests that aural skills are most effectively communicated, and thus learned, through procedural demonstration; and further, that demonstration should encourage a kinaesthetic response which promotes a 'feel' for tempo and metre. Moreover, Dickey (1991) concludes that modelling should be used for 'virtually any musical phenomenon that is encountered in the instrumental music class' (p.141). Indeed, Brown (1996) in his research into 'feel' and rhythm, found that, psychologically, imitation, particularly rhythmic imitation, is essential for good learning in general. Sloboda (1988) similarly proposes that demonstration and imitation are essential to the appropriation of 'feel'.

The literature in this section tends to suggest that non-verbal demonstration is the most effective means of training aural skills. Indeed, the presence of a model from which the performer can imitate, both visually, aurally and kinaesthetically, provides a performer with the opportunity to explore how the music feels, sounds and looks in relation to the model. It is the act of doing, through imitation, that seems to develop aural ability.

### **Kinaesthetics**

The importance of movement to the development of aural skills was expressed by Crane (1915) over eighty years ago:

At the Transition Period, from the sixth to the eighth year, during the first and second years in school, music should be presented to the child almost exclusively through the ear. Through songs and games, through marching and dancing, experience with the fundamental elements of music is gained. (p.94)

Indeed, Revesz (1946) echoes these thoughts when he stated that, from the age of 2- 4 years, 'music and movement go together and cannot be divorced one from the other' (p.172). Lester

(1987) also asserts that at this age, the exploration of movement through game playing is essential for the development of aural skills.

Some of the most innovative teachers use movement to train aural skills. Priest (1989) proposes that the best way to teach aural ability, at least initially, is kinaesthetically because '...the feedback of the sound produced by the action is the greatest aid' (p.109). Regelski (1975) also recommends that the teacher begins training aural ability by drawing students' attention to kinaesthetic cues, allowing them to learn how their muscles should feel during performance (Edwards, 1986; Priest, 1989). It has been proposed in chapter III that the act of memorisation is partly based on kinaesthetics; that is, the nervous system encodes movement and stores the appropriate sensory response (Cook, 1996; Stowman, 1996; Brodsky, 1997).

Kinaesthetic learning is achieved through monitoring the physical feel of a certain position or posture and it is this sensory feedback that is committed to memory. An additional type of 'feeling' which is used to train and develop aural ability is movement. This is the extent to which one can move one's body to the music in a meaningful way, for example to indicate the pulse or rhythm, so that one's movements express the music (Priest, 1993; Brown, 1996). The mastery of this movement will lead to the ability to inwardly 'feel' the music, as opposed to inwardly hear the music. To educate the ear and the body with a sense of motion in music performance, Truslit (1938) proposes that we move the body as a melodic whole, not focusing specifically upon rhythm but still maintaining it. Additionally, kinaesthetically the body may be too tense to develop muscular reactions. If this occurs, movement of the arms is suggested as a remedy for allowing the body to respond to the music (Truslit, 1938; Davidson, 1993).

These activities all point towards the philosophy that learning is best achieved through active participation, and only then will an inner sense of 'feel' develop. Indeed, Seashore (1938) argues that music can only 'be expressed by active feeling'; it is the expression of this feeling, not the feeling in itself, which is communicated. Reaney (1995) provides evidence in history to why this may be so. He claims that 'our natural response to...music is to move ourselves, which is why the



word "melody" comes from the Greek root-word "melos" meaning "limb" (p.90). Sloboda and Davidson also emphasise the importance of movement to musicality. They (1996) propose that

Many expressive intentions are generated and monitored by the application of a gestural process that is verified against the recognised emotional...outcomes of the performance [due to] the application of a well- developed emotional reactivity to the aural outcomes of [trial and error of gesture]. (p.185)

Much of the literature asserts that allowing a performer to physically move their body to music facilitates the ability to 'feel', for example, the pulse and rhythm.

...rhythm alone (as tapped with the finger) can suggest a motion that is different from that which emerges when the melody is added. The melodic motion carries and absorbs the rhythmic motion, without suppressing its inner pulsing. That the two motions spring from different sources is also evident from encounters with students who have a highly developed rhythmic sense but no feeling for melodic motion, as well as from clinical cases which show that melody production can be impaired while rhythm production remains intact. (Truslit, 1938, p.61)

Warburton (1971) and Cheek (1979) also identified movement, 'the body rhythmic', to train young children in pulse recognition. Warburton's methodology enables the pupil to mark the pulse 'in some way while the music containing nothing but pulse notes is played'. Only after physical movement are pupils then asked to respond to rhythms by clapping them. However, Warburton (1971) does not discuss how the child initially responds to the pulse. Nevertheless, other researchers and teachers have expounded on the merits of exploring physical movement to teach performers a sense of 'inner feel' (Priest, 1989, 1993; Kemp, 1990; Cohen, 1996). Kodaly's teaching philosophy also stresses the value of 'feel'. It asserts that musically educated children are better at arithmetic than those who have not received music education because

numbers are not abstract notions for them; they can feel them in their bodies through rhythms. They also learn to read fluently more quickly because they can feel and convey coherent musical pattern in a sentence. (cited in Nicolls, 1991, p.272)

The communication of music through performance, operates in a similar way. Indeed, in order to train the concept of pulse in children, its expression and communication, many expound upon the virtues of movement (Warburton, 1971; Bruner, 1990; Pegg, 1991; Davidson, 1993 & 1995; Cohen,

1996; Krumhansl and Schenck, 1997). Blacking (1976) emphasises the need for the bodily experience of movement which increases the ability to 'feel' what one is playing. This, in turn, enhances the ability to 'convey the meaning and spirit of the music, the joy and innate awareness of the art of performance as conveyed to the listener' (McNeil, 1994a).

In a similar vein, Cohen (1996), a music and dance teacher in Jerusalem, also associates the development of pulse with body movement. Cohen's (1996) research reports that, in Jerusalem, the majority of educational programs concentrate on training the 'musical ear'. Cohen (1996) additionally trains the development of a child's schema. In order to mature these schema, Cohen (1996) centres on actively involved listening; children 'move' with the music, compose, sing, and analyse at a level suitable to their developmental level. Cohen (1996) argues that movement enables the performer to form concrete conceptions of the music which are revealed through the integration of themselves with the music. For example, a performer's sense of pulse and direction can be seen through the performer's ability physically, visually, and subsequently aurally, to distinguish levels of rhythm and pulse. Ultimately, movement is an overt behaviour by which children can explore their inner expression of the music and explain what they are doing to the instructor. It is also a medium for assessment as the product, not the process, is overt. Indeed, as Sloboda (1985) argues, one cannot observe internal representations, one can only infer them.

Movement and dance are utilised as a means of developing a sense of pulse because they are activities which require meaningful interpretation through inner self-expression (Ericson, 1997).

Truslit's (1938) following quotation elucidates this:

The impression that a certain tone has been played too loud or too soft, too long or too short, can only result from a conscious or unconscious *comparison* of what has been heard to a motion-based inner experience of the tonal events. The expressive quality of a tone can only be judged in the context of other tones, and only as expression of the particular local tension of its motion trajectory. If we do not move along (inwardly) ourselves, then we have 'no sense' for irregularities. Even though the vestibular [whole body] reactions are automatic, they are easily 'drowned out' by tonal sensations, metric impulses, etc. (p.64, italics in original)

Here Truslit (1938) shows how the essence of performing is integrated with both inner and outer movement; fundamentally the 'feel' for music. For example, to perform 'musically', Truslit (1938) emphasises the need to schematically experience the motion of the music, creating a natural move towards a specific goal, achieved through the attachment of meaning to the music which in turn enables understanding (Truslit, 1938). However, Truslit's theory of inner motion does pose a problem when considering stylistic awareness, an anomaly acknowledged by him, but not dealt with. Truslit (1938) argues that the 'expression of *inner motion*', classified by him as 'inner emotion' and 'motion sensation' [the way in which the whole body responds to music], is made manifest by the sensation of motion through movement and the voice. He argues that the performer's internal movements, if truly musical, are organic and are not visible externally due to the prevalence of motor sensations, acoustics and visual presentation. This, however, seems scientifically untestable: how then are we aware if this is present? Truslit maintains that if original motion is not extant, disharmony occurs between the lines of the music performed, with 'deviant dynamic shaping'. Cheek (1979) proposes that the notion of 'feel' is a natural motion which gives even the fastest piece inner calm. And further, that movement-based instruction aids underlying pulse recognition.

An additional form of symbolic representation is also employed to train this sense of 'feel'. Truslit (1938) recommends that performers use graphical representation (e.g. drawing) of movement to improve their aural attention, which, he argues, will develop a sense of melodic line in performance. He claims that graphical representation is effective because 'our eyes are extremely sensitive to...small deviations...our ears...have largely lost the ability to attend to the pure motion-determined progress of melody' (p.58).

Crane (1915) also advocates movement through drawing, an activity which enhances a pupil's ability to indicate and 'feel' contour of music. Priest (1993) reiterates this point, asserting that '...sounds should be enjoyed, worked with, chosen and arranged independently of any signs, until the children feel the need to fix their musical ideas graphically' (p.106).

Again we have seen that predominantly, both research and theory suggest that the ability to 'feel' is taught procedurally, through demonstration. And further, that the bodily (rather than mental) involvement in producing and responding to music aids the acquisition of musical ability.

## **Improvisation**

All musical playing is by ear, learned sometimes by imitation, sometimes by invention and sometimes by a combination or synthesis of both of these. Encouragement to play 'known tunes', in various keys, will aid free invention. (Priest, 1989, p.187)

Priest (1989) echoes the thoughts of Regelski (1975) in suggesting that the ability to play by ear and improvise helps in the development of aural abilities and these activities 'make prime use of this capacity' (p.217). Indeed, many agree that improvisation is one way of developing and enhancing the ability to audiate and relate one's external aural performance to the inner ear (Clarke, 1987, 1988; Hatfield, 1987; Hill, 1987; McPherson, 1992). However, Priest (1989) found that although teachers confess that playing by ear and improvisation are essential for performance training, few actually teach these techniques and skills within the lesson. Moreover, he found that the majority of teachers did not encourage playing by ear because '...it removes them even further from pre-specified outcomes which are amenable to easy assessment' (Priest, 1989, p.185). Here we have the means of assessment influencing what is taught.

The skill of improvisation, and the extent to which one structures this genre of performance, greatly develops one's understanding and listening skills in performance (Clarke, 1988). It is the understanding of relationships within music, whether this is tacit knowledge or not, that is the pivotal point for aural development to ensue. Piaget and Gibson (cited in Clarke, 1987) have developed theories which emphasise active understanding as the key to effective improvisation. However, as Clarke (1987) relates, this understanding or representation 'may not be at a level that is conscious or verbalisable, but its absence is reflected in dramatically poorer performance' (p.43). As Clarke further elucidates:

This understanding, or representation, may be the link between aural ability and performance acumen; a combination of aural feedback, stylistic and structural awareness all complement the art of improvisation. These skills strongly inform the interpretation of a piece. Indeed, if one's memory fails in a recital, improvisatory skills are indispensable; the interpretation of a cadenza is very much informed by the aural skills. (1987, p.47)

Cziko (1986) also argues that the skill of improvisation, to the extent that it relies on aural feedback, reveals a procedurally learned system of production rules, rules which one would in all likelihood be at a loss to explain. Indeed, Cziko (1986) proposes that for those who learn a wind instrument purely by ear, fingering, breathing and embouchure were probably first taught implicitly, with explicit learning occurring with 'what sounds right' (p.113).

For those few authors who expound upon the necessity of understanding the role of aural skills in performance, improvisation is suggested as a means of facilitating this (Clarke, 1988). This allows for developing understanding away from written notation, where the ear is free to concentrate on improving aural ability and its role in performance. Bohm and Peat's conclusion may be the way forward in this field:

When serious contradictions in knowledge are encountered, it is necessary to return to creative perception and free play, which act to transform existing knowledge. Knowledge, apart from this cycle of activity, has no meaning. (1989, p.56)

This statement has implications for the assessment of verbal knowledge employed in aural testing. For example, to reproduce a melody on one's instrument, one needs to assimilate performing or theoretical knowledge of intervals and intervallic sounds. A jazz performer may not necessarily read music yet the aural ability to know what intervals sound like is imperative to this musical form based primarily upon improvisation. This expresses the need to know what a musical phenomenon is, not necessarily what it is called. It will be shown in chapters V and VI that conventional aural testing, in relation to higher education, is in decline. At City University, the traditional 'ABRSM' aural tests have been replaced by free improvisation, the aim being to:

...encourage students to develop an intelligent and critical approach to listening, incorporating an understanding of some aspects of basic musical structure acquired through a mixture of analytical and compositional activities. (Clarke, 1987)

Indeed, City University trains performers to integrate musical experience with musical knowledge, eradicating the common emphasis upon correctness in aural work at the expense of understanding. As part of aural training, City employs improvisation classes that aim to develop the student's ability to express, in words, aspects of their experience, both as listener and performer, using their '...conceptual and practical knowledge to analyse and evaluate that experience on the spot' (Clarke, 1987, p.44).

Priest (1989) additionally suggests that the art of improvisation also establishes a 'feel' for the music. However, when he asked performers to describe the process of their improvisations, none found it easy. These subjects were professional performers; it seems unlikely therefore that amateurs will be any more able to declare their knowledge. Indeed, one of Priest's (1989) subjects reported that improvisation bridges 'the gap between what you can hear and what you can play...that's why I improvise' (p.183). Priest (1989) also asserts that spontaneous improvisation enhances expressive, technical and imaginative capabilities. For effective improvisation, 'what was necessary and present was the sound of the music (real or imagined), fluency with an instrument to attempt to produce it and strong emotional identification and desire to play' (Priest, 1989, p.187). Indeed, Priest (1989) argues that spontaneous playing develops a sense of fluency which is so necessary to performance proficiency. Schumann also emphasises the value of improvisation:

It is very nice indeed if you can pick out little melodies on the keyboard; but if such come spontaneously to you, and not at the pianoforte, rejoice even more, for it proves that your inner sense of tone is awakening. Fingers must do what the head wills; not vice versa. (Schumann, 1834, p.36)

Improvisation then, is frequently discussed as a means of developing aural skills. Indeed, it has been argued that the skill of improvisation demonstrates an instrumentalist's ability to utilise aural imaging and aural feedback. However, the majority of teachers do not encourage the art of improvisation because, they argue, it is unrelated to examination syllabi.

## Singing

Try to sing at sight, without the help of an instrument, even if you have but little voice; your ear will thereby gain in refinement. If you possess a sonorous voice, however, do not lose a moment's time but cultivate it immediately, and look upon it as a most precious gift bestowed by Heaven. (Schumann, 1834, p.31)

Singing is one of the tools increasingly used to train and monitor aural imaging (Warburton, 1971; Lester, 1987; Priest, 1993). As Sloboda relates (1988), 'listeners grasp a work of music by attempting to sing or hum parts of it, or by engaging in some form of rhythmic movement' (p.34). Dunnett (1994), of the Voices Foundation, further proposes that singing 'provides the best, the cheapest and the most sophisticated grounding in musical understanding' (p.22). Dunnett (1994) continues that 'an intuitive aural grasp of pitch, interval, rhythm, harmony and musical structure - the 'natural' musicality- can only be attained through exploring music with the voice from the start' (p.22).

Warburton (1971), on teaching inner hearing, encourages her pupils to 'sing the phrase mentally' before attempting to externalise it on their instrument. She claims that singing concentrates the mind and ear on pitch, providing the necessary skills to generate intonationally accurate music, or at least to identify pitch exactitude. Warburton (1971) also argues that singing is the most effective method for training rhythm; the voice is not only able to provide precise durational values but is also an effective vehicle for monitoring, and adjusting to, aural feedback. Pratt (1990) also proposes that sight-singing is an effective way to train aural imaging. This is based on the philosophy that if one can sing accurately, then one must be adept at aural imaging. Indeed, Pratt (1990) further asserts that singing is the best method to train sight-reading skills. This is arguably analogous to silent reading of a book, for instance. One initially reads out loud, finding it difficult to internalise the sound. As one develops, one is able to internalise the sound. Indeed, Seashore (1938) proposes that sight-reading is a form of aural training in that it develops the skill of imaging. Experiments have show that we actually verbalise with our glottis whilst remaining silent (Brodsky and Henik, 1997); the ear has learnt the sound and the mouth utters it in silence. This may also relate to sight-reading music. It could well be that sight-singing facilitates sight-

reading and the learning of a new piece. Indeed, Edwards (1986) found that goal imaging is only successful when instrumentalists sing before they play. Brodsky and Henik (1997) also propose that to develop aural imaging, one must first be able to sing.

Thackray (1978) also advocates singing as an '...admirable medium for rhythmic communication [which enables one] to sustain sound and use varying inflexion' (p.viii). However, Thackray (1978) provides a wider system for developing aural awareness. He also advocates 'body percussion, conducting, use of percussion instruments, simple melodic instruments and the piano' (p.26), along with discussion about these activities. He promotes this interactive, exploratory method of learning and discussion to increase musical understanding.

Through the desire for self-expression and communication, we learn to sing before we are able to speak (Hargreaves, 1986). Deriving his theory from this, Cziko (1986) claims that singing is the most natural way to train performance-related aural skills because of its direct communication properties and further, that it is the simplest way of securing procedural learning.

Both Schumann (1834) and Pratt (1990) extend the merits of singing to ensemble practice. They suggest that ensemble singing enhances and further develops a performer's imaging and feedback strategies. As Schumann exhorts:

Regularly sing in choruses, especially the middle voices. This will make you musical. (1834, pp.34-5)

And

Lose no opportunity for making music in company with others, in duos, trios, etc. This will render your playing more fluent and sweeping. Accompany singers oftentimes. (Schumann, 1834, p.33)

We have seen that the literature promotes singing as a means of developing and communicating aural ability, in particular aural imaging. Indeed, some authors advocate singing as a medium for communicating aural acuity because of its ease of assessment. However, it has been argued



previously that the inability to sight-sing does not necessarily indicate incompetence of the ability to aurally image.

Before closing this section on singing, I will leave with a caution. Regelski (1975) argues that whilst studies that involve singing games may well promote enjoyment, they do not develop 'feeling' (p.166), i.e. an inner sense of movement or pulse. This does not mean that singing has no effect on a performer's aural ability, it simply means that one must be aware of its limitations. It may not help to transfer aural skills that are learned through singing directly onto one's instrument. It may indeed develop the ability to image aurally, but this may not be generalised to a performer's ability to apply these skills to his/her instrument domain (previously discussed in chapter III).

## INTERIM CONCLUSION

As well as possessing the cognitive skills necessary to develop and execute a plan, performers need the musical skills required to transfer these thoughts into instrumental fingerings; the emphasis of learning is placed on the doing and is achieved through synthesis of thought, action and understanding.

The arguments which revolve around the need for, and efficacy of, procedural and/or declarative knowledge may not be diametrically opposed. It could be suggested that the synthesis of the role of aural skills within performance, with the imperative addition of comprehending this role, is fundamental to the development of the musician. Indeed, one type of knowledge may complement, support and extend the other; it is the observable response and behaviour which is of importance. Perhaps it is the training of aural ability that is the key to developing understanding.

Paradoxically perhaps, all four areas of training performance-related aural skills seem to point to the importance of procedural knowledge. This contrasts sharply with the necessity to develop declarative knowledge in order for performance efficiency to ensue. It is quite clear that the integration of the learning theory based on acquiring declarative knowledge is not revealed through instructional objectives. Perhaps, as Cziko (1986) asserts, the act of performing requires both procedural and declarative learning.

The most imperative component for learning is that of treating one's pupil holistically, listening to what they say and do, being able to converse freely. For example,

the learning of the fundamentals of music *per se* is not so much the learning of a body of content as it is the development of skills. It is not something the student learns about, it is something he learns to do. It is not something he talks about, it is something he does. (Spohn, 1962, p.25)

As Schumann (1834) wrote:

Among the causes of the decline of music are bad opera houses and bad teachers. It's almost incredible how the latter affect whole generations either beneficially or destructively through primary and secondary education. (*Raro*, p.49)

This is the reason to concentrate upon educating teachers.

## Chapter V Examination: Testing and Assessment

In chapters II and III, the necessary aural skills required for an effective performance were identified. Chapter IV has discussed the teaching and subsequent learning of these skills. This chapter attempts to provide an historical overview of assessment procedures for performing musicians, with particular reference to the testing of aural skills. It will then specifically explore the ABRSM's aural test component of its performance examinations.

### HISTORY OF TESTING

...all aptitude tests are to some extent achievement tests, just as all achievement tests necessarily reflect the initial aptitude of the individual. (Shuter-Dyson and Gabriel, 1981, p.7)

Throughout the past century, aural skills have been assumed to be pertinent to a musician's training. The assessment of performance ability, musicality, musicianship (and the aptitude to possess any one of these) all incorporate tests assessing aural ability through an oral or written response to aural stimuli. The variety of these performance examinations, however, purport to be measuring different concepts, such as musical intelligence and aesthetic appreciation, yet all incorporate tests of aural ability. In particular, aural ability has been, and is, an expected part of a performer's proficiency, demonstrated through the variety of aural tests present in the assessment of performing musicians.

However, during the last hundred years different methods for assessing performance proficiency and musicality have been designed throughout the world. Aural examinations did not emerge as a form of psychological testing, though. Rather, they emerged as a means of auditioning performers, to assess their potential for success in a college of music, or they were developed to assess the level of achievement of performing musicians (Shuter-Dyson and Gabriel, 1981).

However, some psychologists did implement aural tests for predicting success in performing

(Bentley, 1960), while other psychologists have tended to focus upon very specific aspects of music performance, such as pitch, rhythm and memory, developing batteries of tests to assess these (Seashore, 1919, 1938; Wing, 1939; Revesz, 1953; Shuter-Dyson and Gabriel, 1981). However, they do not specify how these particular aspects of music relate to an effective performance. Therefore, the test validity is often suspect, with some evaluators define the validity of the test batteries in terms of their duration (Shuter-Dyson and Gabriel, 1981). This seems inadequate because the time it takes to complete a test battery does not provide any indication of content or an assurance of its validity. In contrast, musicians have been inclined to judge a performance intuitively, relying upon 'informed consensus' to validate their opinions. The criteria used for assessment varied in content and purpose.

Over the past three decades, psychologists and musicians, as well as physicists, mathematicians and educationalists, began to exchange and integrate information on testing and assessment into their respective fields; this grew into the now firmly established and ever increasing field of music psychology. As music psychology as a discipline continued to expand, 'constructs' were developed to establish the related validity of various test functions. Although batteries of tests have been developed, these are not widely used for recruiting instrumentalists to music courses due to their poor predictive validity. The different test objectives include measures of: musical intelligence, for example as a means of assessing musical memory (Drake, 1954); music aptitude (Gordon, 1979a, 1984, 1987); musical ability (Seashore, 1938; Shuter-Dyson and Gabriel, 1981); music sensitivity and aesthetic appreciation (Gordon, 1965; Wing, 1939/1961); predictive testing, for example tests used as a predictive measurement for allocating pupils to violin training (Bentley, 1960); and music performance achievement (ABRSM, 1993/1995).

In 1863, Helmholtz established music psychology as a discrete scientific area for study, contributing to the trend towards a split between educationalists and psychologists. Despite this, there remained little consensus as to the validity of the terminology used to define 'musical ability' (Boyle, 1992). As music psychology became more accepted and respected in the twentieth century, and under the influence of 'comparables' in cognitive psychology, such as intelligence

tests, a number of standardised tests of musicality were developed, all consisting of tests which include the assessment of aural ability. Seashore (1919) provided the impetus for this work with his measurement of aptitude for musical talent, provoking a debate around the traits that distinguish musical ability (Seashore, 1919/1938; Shuter-Dyson and Gabriel, 1981). Chapter II of this thesis has shown the importance of this debate and that it is ongoing.

Meanwhile, in an attempt to establish a reliable measure of musical aptitude, Revesz (1928) developed batteries of tests. In 1946, Revesz greatly extended the number of Seashore's test batteries, which involved testing musicianship through the singing back of melodies. He defined the musical ear as 'the ability to distinguish, apprehend, and recognise acoustic-musical relationships' (Revesz, 1946, p.95). Revesz' (1946) test batteries required the candidate:

- a. to imitate, through clapping, rhythmic patterns played upon the piano;
- b. to sing back both notes of a 2-note chord played upon the piano;
- c. to sing back melodies played upon the piano. For example, nine bars of a tune are played to the candidate, the first 2 bars are then repeated and the candidate is then required to continue the melody;
- d. to undertake a regional pitch test. This consisted of 8 notes, between G<sub>2</sub> and A<sup>3</sup>, played on the piano in irregular order. The candidate is then asked to find each note on the piano after having heard it.

Revesz placed particular emphasis upon test 'c', awarding lower grades of musicality to those who could only identify rhythm, regional pitch and 2-note chords (1946, p.15) -chapter VI will show that the previous ABRSM aural tests also reflected this view of musicality. For higher level musicians, relative pitch, harmonic apprehension and response, playing familiar tunes by ear and

improvisation were expected. Revesz' subject population consisted of 7-12 year olds. However, in relation to test 'b', Revesz (1946) recognises that

very consonant notes are much harder to discriminate in a note complex than dissonant ones...The more easily a person can retain a note in his memory or reproduce it spontaneously, the more reliable will be his judgements. (p.110)

Again, the ability to retain and reproduce a note or melody is reminiscent of the more recent ABRSM's tests.

Diverging from the debate about musicality and the assessment of traits that make-up musical ability, Oregan (1935) preferred to develop discrimination tests which involved questions of 'taste' and 'appreciation'. These tests required the candidate, for example, to complete melodic phrases within the appropriate tonality. This requires the candidate to recognise and conform to harmonic and tonal conventions of musicality. It does not allow the candidate to explore tonality 'aesthetically', but rather obliges the candidate to restrain their tonal completion to convention. Franklin (1969) also ascertained that music ability is demonstrable through identifying the final tone of an incomplete melody, presupposing that the melody ends on the tonic.

In 1939 and 1961, Wing standardised tests of musical intelligence for 14-16 year old males, utilising tasks of cognition and appreciation. These tests can be seen to incorporate the ideas and objectives of Revesz (1946), Seashore (1919/1938) and Oregan (1935) in that Wing (1939/1961) used both the assessment of musicality and aesthetic appreciation in a combined test to assess overall musical intelligence. In the style of his predecessors and contemporaries, Wing utilised tests of aural acuity. The first of these proved to be a reliable prediction of maintaining perseverance of boys learning an instrument, recognised by Bentley (1955) whose tests were used as a predictive measurement for allocating pupils to violin training. Wing's (1939/1961) tests included memory and tonality tasks to assess musicality, a theme that recurs as part of the ABRSM's examinations (discussed below).

Stumpf (1883/1890) also developed tests to assess cognitive musicality and aesthetic appreciation. His tests successfully discriminated 'between experienced musicians and fourteen self-confessed "unmusical" students' (p.14). His tests involved the following:

- a. singing a note which had been struck on the piano;
- b. judging the higher of 2 notes played successively;
- c. judging degrees of consonance for pleasantness.

As can be observed, test 'c' is a subjective measurement based upon aesthetics. With so few subjects used for Stumpf's (1890) experiment, and with 'musician' remaining undefined, this value-laden test cannot be reliably standardised.

From the literature already documented, it can be seen that tests of musical ability, aesthetic appreciation and musical intelligence purport to assess types of aural ability. In education, Buttsworth et al (1993) continued this trend in the design of a battery of tests to assess aural development in tertiary education, which were developed by musicians and psychologists. The tests were mostly of pitch discrimination and intonation. Students were judged by their level attained at the end of year, in comparison to the start. The assessors looked at achievement levels of aural abilities, termed by them 'listening skills'. They specified secure intonation as a vital aural ability, identified when the performer plays 'in tune'. Indeed, 'accurate intonation is accepted as one of the foremost considerations leading to successful musical performances' (Buttsworth et al, 1993, p.115).

Many of the tests outlined above have been designed as a measurement of aptitude. The following section will discuss the ABRSM's performance examinations, which are designed to assess actual achievement rather than potential or aptitude. Some of the features of Revesz' (1946) test batteries, for example tests 'a' and 'c', provide common material with the ABRSM's aural tests. However, the majority of previous tests are in contrast with the ABRSM's tests.

## THE ABRSM PERFORMANCE EXAMINATION: AURAL TESTING

### The Aura surrounding Aural Testing

Aspin (1981) defines the term examination as

...a scrutiny or an inquiry into something simply to establish its present state, operation and functioning by a particular model of assessment. (pp.35-39)

The ABRSM concerns us here in that it has, since the turn of the last century, designed syllabi to teach instrumental and vocal performance ability, culminating in an examination of performance achievement. Performance evaluation is an integral part of most vocalists' and instrumentalists' career development. However, it must be clear that a performance examination is not the only means of assessing performance ability; some teachers do not enter their pupils for examinations, considering it unnecessary for musical development.

The ABRSM's instrumental performance examinations incorporate four constituent parts, prepared performance, sight-reading, scales and aural tests. The area concerned here is a series of sub-tests that fall under the umbrella of 'aural tests'. As the fundamental factor for assessment in these examinations is performance achievement and musicianship, the other constituent parts of the examination are intended specifically to reflect the skills, developed through training and conceptualisation, which are central to these competencies (Mundey, 1994a).

The ABRSM annually examines numerous musicians, most of them children or adolescents, in over eighty countries throughout the world. Every examination includes an aural test. These tests were introduced in 1921 (Mundey, 1994a). Previous research has shown that aural tests have sometimes been controversial (Da Costa, 1994; McNeil, 1994a). Indeed, Da Costa (1994) found that her pupils who had obtained Grade 7 of the ABRSM's performance examinations, could not relate their aural skills to their performance, neither were they transferable to other performance situations. It has long been suggested that many musicians disliked the aural component of the examination above all the other elements. McNeil's (1994a) research involved interviewing



teachers and pupils concerning their opinions and achievements in practical, academic and extra-curricular musical activities and experience. It was found that both pupils and teachers were uncertain of the purpose of aural tests and their relationship to performance, with some teachers and educationalists denying any relationship between the two. In 1989, the ABRSM recognised and responded to teacher's disparity, with syllabi and methods for examining undergoing radical change. The new aural tests were introduced with the explicit intention of moving away from the assessment of memory skills, which was stressed in the old syllabi, placing a new emphasis on 'perception and listening with awareness' (ABRSM, 1993/1994). Indeed the Board's tests were symptomatic of a great change throughout the whole of music education, a prime example being the development of the National Curriculum in 1992, with the introduction of stage based assessment. In particular, the ABRSM introduced substantial changes to their philosophies and syllabi of aural assessment. The new tests were designed by a panel of people this time (rather than by a single person, as before), with the aural assessment syllabus revised in 1993 and 1995 for Grades 1-5 and Grades 6 - 8 in 1996.

These aural subtests aim '...to ensure that aural training is part of a musician's training [in order to] acquire listening skills' and focus listening (Harvey, 1990, p.5). This aural component is singled out as being necessary to develop aural skills alongside performance skills, so that aural ability enhances performance ability. However, these modifications generated a hot debate about the role and purpose of aural training and testing; it is thought that teachers and pupils still express disquiet about the existence of aural tests as part of a performance examination. For example, one pupil remarked that 'I still don't understand why I have to sing to play the flute' (McNeil, 1994a). Some teachers and educationalists remain loyal to the previous tests, others finding these new tests refreshing, relating more towards actual performance skills. It remains to be established whether the relationship between the new tests and performance achievement is realised.

In an attempt to satisfy the needs of teachers, the ABRSM made information available in the form of workshops, educational support networks and publications. All the literature of the ABRSM's

examinations is based on published examples, both written and on tape. During teaching, teachers are expected to use these specimen tests to 'devise exercises using the music their pupils are playing, thus emphasising the relevance to the [aural] tests' (Mundey, 1994a). The reality of teachers devising their own exercises is an area to be explored in chapters VI and VIII. In 1995, the information gained through workshops, where teachers were given the opportunity to express their opinions about the new aural tests, precipitated the ABRSM's revision of Grades 4 and 5.

Salaman (1994) maintains that 'the stated purpose of founding the ABRSM was to raise the standards of performance among applicants for places to the Royal Academy of Music and the Royal College of Music' (p.210). This has implications, both economic and educationally, for the way the ABRSM assesses performers; in particular the feedback it gives to the performer.

Salaman (1994) identifies the varieties of weightings that may all add up to the same description of achievement within the context of an examination:

Within the context of musical examinations, a measurement that results in a 'merit' might have a number of manifestations: it could reward a sound technique applied to otherwise routine playing; it could denote strong musical awareness insufficiently supported by technical expertise; it could suggest solid preparation that lacks true spontaneity. (p.211)

Harvey (1982) observes that these examinations are 'for amateurs in so far as they are intended to cover what may be learned within the first 10 years of musical development' (p.4). As regards testing in general, and in particular aural testing, Harvey (1982) does point out one vital element regarding age and maturity. One will often find that the most talented young musician, who can perform with outstanding ability, still lacks 'something'. This 'something' concerns the notion of musical and emotional maturity. As Dorian (1966) illuminates:

...there is still that intangible quality of emotion that makes the difference between a great and an ordinary performance. (p.36)

Maturity, in music, is a phenomenon that is very difficult to measure, indeed the essence of musicality is ill-defined due to the inability to measure it in its finality. After all, tests are designed to measure what can be measured, not necessarily what one wants to measure. Indeed, Munday (1994a) asserts that the ABRSM's aural tests assess 'examinable things which are learnt through teaching', though he acknowledges that they are not 'the be all and end all' of performance. Harvey (1995) suggests that progressively weaker aural test marks are obtained as one reaches the higher grades of 7 and 8, though of course this is not true of everyone. She suggests that this is due to the 'insufficient appreciation of the maturity required in musical perception and understanding' (Harvey, 1995, p.9). However, the ABRSM has no age-related criteria yet we do know that people of all ages take these examinations. At an ABRSM workshop recently, Munday (1994a) stated that these examinations are aimed at the majority who take them, these being between the ages of 8-18. It is of note that Crane (1986) asserts that the 'highest levels' of performance are reached from 18 years plus.

Before outlining the framework of the ABRSM's performance examinations, we must first outline the revised aural tests along with their aims and objectives. These tests are 'carefully graded from basic recognition of rhythm and memory of short phrases to tests demanding well-developed aural perception and discrimination' (Harvey, 1990, p.26). The ABRSM abolished the traditional alternative to aural tests in 1996, keyboard harmony (the application of cadential progressions, transposition and extemporisation on the piano), making aural testing compulsory for all performance candidates; 'if aural tests are an important part of all round musicianship then all candidates must do them...it makes the whole thing much more objective' (Munday, 1994a). This highlights the increased emphasis placed upon the importance of aural skills to the performing musician. Indeed, keyboard skills are now examined under the heading of the assessment of 'Practical Musicianship', in which candidates can use their own instrument if they prefer. It should be noted here that the aims of these examinations are 'enjoyment through achievement' (Munday, 1994a).

## **The Aural Tests.**

This section begins with a layout of how the ABRSM marks the aural tests, followed by the requirements of the aural tests themselves, and continues with a comparison with tests of other examination boards.

### For all grades, responses are marked:

- 18      Quick and perceptive response
- 15-17    Good response  
          Minor errors or hesitation
- 12-14    An adequate response  
          Some hesitation and error

### Below Pass standard:

- (11 and under) Slow response  
                    Inaccuracy in majority of tests.

Test A for Grade 1 is a template used up to Grade 3, where tapping the pulse to music is required and identifying the time signature. The complexity of time signature increases up to Grade 3. For Grades 4 and 5 the candidate is required to sing or play a melody which the examiner has first sounded. For Grade 6 to 8, the candidate is required to sing the upper or lower parts of a 2 part melody played by the examiner. At Grade 8, cadential progressions need to be identified.

Test B uses Grade 1 as a template up to Grade 3. One is required to sing 'as an echo' phrases played by the examiner, with complexity increasing with Grade level. Grades 4 and 5 require the candidate to sight-sing in free time. Grades 6 to 8 require the candidate to sing a melody from score with the accompaniment of the piano.

Test C is used as template up to Grade 3. The candidate is required to identify a rhythmic change played by the examiner, progressing to either a melodic or rhythmic change by Grade 3. Grades 4

and 5C require the candidate to identify musical characteristics of a piece played by the examiner, and to clap the rhythm and state the time of a short extract taken from this. Grades 6 to 8C require the candidate to identify cadential progressions and state the music's modality, with Grade 8 also requiring the ability to identify modulations.

Test D, for Grades 1 to 3 and Grades 6 to 8, requires the candidate to identify musical features of a piece of music played by the examiner. There is no test D for Grades 4 and 5 (see Appendix I for test rubric).

The ABRSM has not identified the objectives of these aural tests. However, it can be hypothesised that Test A is designed to assess a sense of pulse and the ability to identify time signatures.

Across Grades 1 to 8 the ABRSM seems to be assessing the development of a sense of key. Test B seems to be assessing the ability to sing in tune and, progressively, to sing in time. Test C seems to be assessing one's sense of rhythm and, progressively, one's harmonic sensibility. Test D appears to be assessing a performer's musical knowledge such as a response to elements of articulation, dynamics and texture.

Having outlined the ABRSM's aural test requirements, let us now turn to how the other two major performance examination boards assess performing musicians: Trinity College London and The Guildhall School of Music and Drama. Trinity College London (1995) argues that

the more efficiently they perceive and evaluate what they hear and judge the sounds they make, the better the performance. Playing back on their instrument what they hear promotes additional instrumental facility. (p.13)

However, Trinity still use the piano as the examination stimulus. In comparison, the Guildhall School of Music and Drama (GSMD) introduced, in 1994, Initiative Tests as an alternative to their previous aural tests. These are based on a similar philosophy to that of Trinity in that they both include extemporisation. The performance examination consists of performing prepared pieces, scales and arpeggios, sight-reading, aural or initiative tests and musicianship questions on the candidates understanding of the pieces they have just performed. For example, questions could

include the structure, character and style of the piece, interpretation and the reasons why they use certain techniques to communicate specific ideas. These questions 'relate directly to the performance...[with the] aim to encourage an attitude that understanding the music itself provides the most appropriate path towards realising the music in performance' (GSMD, 1996-1998, p.26). The Guildhall focuses on assessing 'musical awareness as communicated through performance' (p.26).

The aural test section of the Guildhall's examination is clearly divided into assessing rhythmic and pitch elements of music. The rhythmic tests assess the ability to clap a rhythm and conduct the beat, progressively complex through to Grade 8. The pitch tests range from the ability to sing and name an interval through to identifying modality, cadential progressions, modulations and chord positions.

The initiative tests are also an expression of one's ability to use rhythmic and melodic material. However, the candidate now concentrates his/her responses on his/her own instrument. Grades 1 to 8 range from the ability to play a rhythmic pattern at sight, then making a melody from this rhythm, through to extemporising on a rhythm with modulation and returning to the tonic. Candidates are also required to play intervals and complete phrases, sight-read, and to recognise the key and identify and define the modulations.

Trinity College's ear tests also employ tests that require the candidate to clap rhythms, name and sing intervals and identify modality. Gradually, the candidate is required to identify cadential progressions, sing melodies that the examiner has just played, identify positions of chords and identify modulations. All these separate tests are awarded individual marks. In comparison to the Guildhall's musicianship questions, Trinity College's include a viva voce where the candidate is required to answer questions about their prepared performance pieces. Although the candidates can be prepared for this by their teachers, understanding is related to what the performers know in practice.

In essence, The Guildhall School of Music and Drama (GSMD) uses specialist examiners for each candidate whereas the ABRSM and Trinity College do not. Trinity's and Guildhall's ear tests are much the same as ABRSM's, except that the former are allocated individual marks. Both the Guildhall and Trinity incorporate a viva voce, asking musical questions relating to the prepared pieces candidates have just performed; in contrast, the ABRSM requires discussion of the musical aspects of a piece played by the examiner. The most pertinent difference between the ABRSM's tests and Trinity's and the Guildhall's is that the latter two boards both provide an alternative option to the 'traditional' ear tests, which promotes technical development. Trinity focuses on 'creative musicianship and performance', stressing 'aural awareness and extemporisation' (syllabus 1, option 2, 1995, p.13). Trinity's aim is to 'sharpen memory and promote perception of rhythm, pitch and mode'. The candidates' responses are played on their own instrument. The Guildhall 'initiative tests' are also based on improvisation and the candidates respond on their own instrument. Fundamentally, the ABRSM's aural tests assess technical development whereas both Trinity's and Guildhall's provide alternative assessment of creativity and improvisation relating directly to the candidates' instrument domain.

## INTERIM CONCLUSION

This chapter has shown that the history of testing and assessment of musicians is organised around tests of aptitude and tests of achievement. One could surmise that the ABRSM's aural tests are extremely innovative; however, a thorough investigation is needed before such conclusions can be drawn.

Despite the extraordinary influence of the ABRSM's aural tests and of attitudes towards them of teachers and pupils, or perhaps because of the ABRSM's wide spread use, rigorous objective research needs to be carried out on them. Although the examinations have undergone revision in recent years, their validity may yet be questionable. Given that the tests were not developed in a way which systematically related achievement on them to performance proficiency, their face

validity seems in need of further investigation. In the next chapter, therefore, there will be an attempt to provide an answer to this question by analysing the ABRSM's aural tests.



## Chapter VI A Critique of the ABRSM's Aural Tests

A test should only be used when there are no more direct signs of achievement to examine. Instrumental or vocal performance which shows technical and expressive mastery provides better evidence of musical ability than any test can do. (Sloboda, 1985, p.234)

This chapter will provide an analysis of the ABRSM's aural tests. In particular, Tests A to D will be examined in relation to how they cater for the performing musician and related aural skills. With reference to the literature, the content validity of Tests A - D will be examined, particularly with regard to what constitutes desirable aural skills in a performing musician. An exploration of the strengths and weaknesses of certain further aspects of the tests will be undertaken, such as the use of sung responses, the use of verbalisation, and the implications that age-related abilities have for specific test responses. These analyses will attempt to identify any aspects of aural ability which have a direct impact on performance and that appear to be neglected or inadequately covered by the ABRSM's tests. Only Grades 1 to 8 will be looked at. Finally, some conclusions will be drawn about the need for and the role of aural tests.

### THE VALIDITY OF THE ABRSM's AURAL TESTS

Let us now examine the contents of these aural tests in relation to whether they are assessing what they purport to be assessing and whether the examination of these particular skills is in agreement with the literature documented previously. That is, whether the ABRSM's aural tests assess skills that have been shown to directly relate to performance ability.

Before embarking on a critique of the ABRSM's aural tests, the rationale behind the presence of the tests needs to be stated:

The purpose of aural tests is to establish the link between listening to music and playing music...The speed and accuracy with which candidates respond to the aural tests can tell the

examiner a lot about the candidate's musical make-up and help to form an overall picture of the candidate's abilities. (Munday, 1994a)

### **The Relationship Between Tests A to D and Aural Skills**

One of the most basic musical skills is that of identifying the time signature of a piece of music. (Windsor, 1993, p.127)

#### Test A - Pulse recognition

The skill of recognising pulse, accent recognition and explicitly identifying metre are requirements of Test A. By Grade 2, the tests are moving into compound time but examiners are prepared to accept answers that the time is in 1, 2 or 3. First, the acceptance of these answers obscures the validity of this test; why use examples of compound time if the candidates are not required to respond using compound time? Surely this provides a level of ambiguity that is unnecessary and perhaps unfair. Can we be certain that this test is indicative of musicality if ambiguous metres are used? However, in favour of the Board's tests, Warburton (1971) proposes that if the concept of compound and simple time has not been introduced then there is no reason why duple and triple time should not just be simple. Indeed, Shuter and Taylor (1969) assert that we do not yet know how far these sequences of testing are in accordance with the child's natural development. From the examiner's perspective, they assert that candidates never have to propose a time signature, only the number of beats. For example, examiners are instructed that time signatures of  $6_8/9_8/12_8$  are just as good as  $2_4/3_4/4_4$  (or indeed  $2_2/3_2$ ) for this purpose; the instructions for examiners indicate the tempo required to ensure that ambiguity is eliminated, even though the time signature might be  $6_8$  or  $9_8$ . Only Grade 7 requires identification of the time signature, that is, discriminating between simple and compound time; even here though,  $6_8$  is the only possible compound. In Grades 1 to 6, candidates are never asked 'how does the beat divide?...into 2 or 3', but only 'how many beats?'. In fairness to the Board, the inclusion of compound time as well as simple time is a reflection of the music the candidates play. However, for candidates who are unfamiliar with the timbre of the piano, metrical perception is related to intensity variation. Indeed, metrical types of accentuation are salient and as important as

duration or pitch in determining metre (Windsor, 1993); as Windsor argues, '...the metrical stability of a sequence is a result of correctly placed intensity differences between events' (1993, p.133). Lehrdahl and Jackendoff (1983) also assert that

..accented events...are *phenomenal accents* and are to be distinguished from...*metrical accents*...Phenomenal accents are characterised by attack points of pitch events, local dynamic stresses, sudden dynamic or timbral differentiation, melodic disjunction and local harmonic differentiation. Metrical accents are mental constructs derived from temporal regularities in the occurrence of phenomenal accents and must be...coincident with note onsets and spaced at equal time intervals. (In Windsor, 1993, p.128)

However, as Windsor (1993) pinpoints, 'whilst such tests assume a single correct answer and materials are chosen that conform to this criterion, one cannot assume that metrical structure is always unambiguous or that all music provides sufficient information of the necessary type to provide the listener with a sense of metre' (p.127). Contrary to this, Sloboda (1985) suggests that only one bar of music is needed for metrical sense to be established. While Windsor (1993) is clearly referring to the context of examinations, Sloboda's (1985) perspective pertains to the actual participation in producing the music itself. Sloboda's (1985) point of view relates to the ability to 'feel' the metre through performance.

The importance of assessing musical metre is depicted by Povel (1981, cited in Dowling and Harwood, 1986). He states that a:

...steady beat pattern serves as a cognitive framework with reference to which the listener structures musical time, also, the performer uses...metrical beat patterns as cognitive frameworks with which to judge and produce precise rhythmic patterns. Metrical structure thus functions as the temporal analogue of the pitch scale schemata. (p.186)

In the new aural tests, the ABRSM has altered the behaviour required to identify the beat; it has been changed from conducting to tapping to the music, stressing where the strong beat falls; although individual examiners stress that most of their candidates clap rather than tap. Munday (1994a) explains that this is because children find tapping 'great fun' as opposed to conducting. It has been shown in chapters II and III that enjoyment is an important part of learning an instrument and so a case can therefore be made. However, there is evidence that tapping may not

provide the appropriate information for the examiner to assess achievement. For example, Penel and Drake (1997) have shown that whilst tapping to music there is a delay between the beat and the tapping. They also found that tapping itself provides auditory interference. However, Drake et al (1997) argues that 'extraction of temporal regularities to identify the underlying beat is a process fundamental to music understanding' (p.286). Indeed, she found that musicians tap slower than non-musicians, indicating a more global approach which is relevant to these tests and to conducting. Tapping, therefore, does seem to be an effective way of assessing rhythmic and beat perception. Indeed, Seashore (1919) advocates the method of audibly tapping to a rhythmic metre as this is pertinent to performance in the development of eye - to - ear co-ordination (p.360).

By Grade 5, the pulse indication test now becomes an exercise in singing and pitch development and so will be discussed under that heading. However, the pulse indication test does appear elsewhere in the tests, for example, the requirement to clap a rhythm and identify the number of beats as part of Test D.

The preceding chapters have indicated that a developed sense of pulse is essential for a musician to perform effectively. However, the ABRSM creates unnecessary ambiguity in this test; before the performer has, theoretically, been introduced to the essence of compound time, this task incorporates both simple and compound time signatures. As the candidate is only required to state the time in simple terms, it seems an unnecessarily confusing aspect of this test to include passages of music in compound time. However, examiners are trained by the ABRSM in ways of communicating the music to the candidate. For example, examiners are provided with a tempo marking and a rubric to follow, surmounting possible ambiguity by stressing accentuation and playing at an appropriate tempo.

### Test B - Singing in tune

Test B comprises the 'echo' tests, which are purported to develop a good sense of pitch and a 'quick response' (ABRSM, 1994/1995). They are concerned with the imitation of a melody, tempo recognition and with developing a sense of key (Munday, 1994a). Previously there was the

option of responding by either voice or on ones' instrument. However, the instrumental option was dropped because the ABRSM already assesses responses on ones' instrument in the practical musicianship examinations. The sung response to this task became compulsory in January, 1995. This was introduced because 'music's all about song and singing' (McNeil, 1996). As Munday (1994a) further elucidates, '[Instrumentalists] have to make decisions for phrasing...If they could just internalise as they go...they must be able to sing; you know the reasons'. This statement reiterates the importance of the ability to internalise music to develop performance proficiency, as was discussed in chapters II and III. However, Munday is unclear about the reasons for this; it is as though one must accept that it is so. Munday (1994a) argues that the ability to sing back a melody is indicative of the ability to internalise. This may indeed be so, yet one cannot generalise and assert that the inability to sing back a melody is indicative of the inability to aurally internalise.

Bentley (1969) argues that pitch and duration are the basics of a melody, and so recognition is based on memory for pitch and rhythm. He asserts that rhythmic memory develops first.

Bentley also argues that we need to discriminate 'at least a quarter tone apart, otherwise the semitones would be blurred' (p.43). This denotes that intonation should be assessed because this is a more reliable way of establishing whether the performer can distinguish 'at least a quarter tone apart'. This will be discussed further in the latter part of this chapter. Carlsen (1969) argues that the basis for aural perception is constituted of melody and the complexity of the scale. This supports the B tests in that the perception of key and its relationship to melody is being assessed. However, as children tend to reproduce melodic contour before individual phrases, with key stability following later, it might be more relevant for examiners to overlook a degree of pitch inaccuracy in the early grades if contour is correct (Welch, 1994).

One issue of contention surrounding Test B in Grades 1-3 is that rhythmic information dominates pitch information (Fraisse, 1978/1982; Carterette et al, 1982; Monaghan, 1983/1984; Dowling and Harwood, 1986). As the ABRSM states that Test B is concerned with identifying a performer's

sense of key then perhaps this test should simplify rhythmic information so that respondents can identify pitch and key more easily.

Another issue concerning Test B in Grades 1-3 is that the respondent is required to 'echo' the phrase, presumably so that a sense of pulse can be maintained; examiners prefer to maintain that continuity demonstrates 'alertness'. Miller (1956) argues that sequences are organised in memory in chunks of rhythmic blocks. He asserts that anything below 7 items of information can be successfully held in immediate memory. Further to this, sequences of phrase lengths are remembered by 2-5 second duration and this does not radically change with development from early childhood (Dowling and Harwood, 1986). Indeed, the mental representations are formed within a

solid framework (beat or tonal) on which more elaborate patterns (rhythm or melody) are laid. The development of these mental representations appear to follow a closely parallel course for both pitch material and rhythm. (Dowling and Harwood, 1986, p.201)

The B tests are in line with these findings in that the respondent can maintain a sense of pulse whilst singing back the short melody.

Tests 4 and 5B were introduced to prepare candidates for the development of sight-singing, which is required by Grade 6. Tests 4 and 5B are without rhythm whereas Tests 6 to 8 require singing with rhythm. This task is an extension of Tests 1-3B in that inner hearing through aural stimuli was, supposedly, being developed and assessed whereas Tests 4 and 5B begin the assessment of inner hearing through a candidate's ability to aurally image written notation. This is specifically an exercise in 'reading a key' where examiners will put candidates right if they go wrong (Mundey, 1994a). Indeed, Mundey concludes that 'youngsters seem to enjoy the new 4B immensely' (1994a). By the time candidates reach Grade 5, they are expected to possess technical facility, basic stylistic understanding and understanding in how aural skills relate to performance ability.

Test B, in that it is intended to assess a sense of key, pulse and the ability to sing intonationally correct, is adequate in doing so. However, the means of assessing aural imagery, through a sung response, may be deemed inappropriate. Previous chapters have outlined the importance of the role of aural imaging in developing performance ability and the way in which this is taught. Indeed, chapters III and IV have indicated that some teachers train and monitor the ability to image aurally through singing responses. However, it was argued that a performer's inability to sing is not necessarily indicative of the inability to aurally image. Indeed, it was debated that a singing response is perhaps required because it is easily assessable.

### Test C - Rhythmic and harmonic sensibility

Tests 1- 3C examine the ability to 'recognise' and identify changes of rhythm or melody in a short phrase. This test reflects the psychological milieu for assessing musical ability (Shuter-Dyson and Gabriel, 1981). The candidate's age and ability in verbally expressing concepts are taken into account so that the candidate can describe the change, raise their hand where the change occurs, or sing it. Regelski (1975) agrees that observable behaviour which manifests learning can be assessed by raising 'a hand when each statement of the subject...is heard' (p.72); by 'subject' Regelski is referring to the main theme. He also stresses that this can be used to 'identify meter [and] place measure lines' (p.72).

The ability to register and take into account more than one musical aspect at a time develops with age and cognition, with young children of different ages focusing on different aspects of melody and having different perceptual responses (Michel, 1973). Children aged 3-4 years are only able to attend to one parameter at a time (Bertrand, 1996). Between 5-6 years development accelerates and children's way of thinking is characterised by the capacity of decentration, the ability to attend to more than one parameter at one time (Bertrand, 1996). For example, the detection of changes in musical parameter increases with age, with changes in timbre and intensity being detected earlier than changes in tempo or in harmony (O'Hearn, 1984; Zimmerman, 1984). Test C requires the candidate to decentrate, holding the initial rhythmic melody in memory whilst comparing it against the new, melodically or rhythmically altered version. Although the ABRSM

does not specify this as an age-related task, research clearly suggests that it is. The candidate needs to be six years plus to be able to carry out the required decentration. ABRSM examiners have indicated that very few candidates are younger than six years old, suggesting that Test C is not an unrealistic test.

A vocal response to Test C is particularly encouraged from the candidate as this is 'often how a conductor communicates with an orchestra' (Munday, 1994a). The examiners tend to exaggerate the changes so the candidates can at least locate where the change occurred (Munday, 1994a). However, neither covert nor overt behaviour are necessarily evidence of something. For example, in Test C the overt behaviour of singing the difference in rhythm or melody may not necessarily indicate that the candidate understands the difference. The candidate who verbally explains the difference in musical terms possesses a declarative knowledge that the previous example may not possess. The choice of responses required, that of raising a hand, singing, or verbally explaining, are fundamentally different processes which require different levels of knowledge and understanding. Perhaps for the lower Grades of 1-3, examiners will accept a raised hand response. If this hypothesis is correct then the progression from assessing procedural to declarative knowledge needs to be examined. This will be discussed in relation to Test D, where the need for declarative knowledge is dominant.

The presentation of a harmonised melody played twice, the second time being altered in melody, rhythm or harmony is part of the Indiana-Indianas Test (Parker, 1997), which, in turn, is part of the Oregon discrimination test. Parker (1997) asserts that this method of assessment is useful for education and listening tasks but does not expound on its relevance to performance. The test is administered on the piano and the candidate responds verbally, or through musical expression. Depending upon the age of the candidate, the respondent should have the musical knowledge to recognise and express this difference. Sloboda (1985) relates that 'fine differences in timing or tuning may be noticeable in very short sequences, but be completely unrecoverable in longer ones' (p.153). The ABRSM does use short sequences, usually of four bars length, and only 2 bars in Grades 1 and 2. However, Sloboda (1985) continues, '*failures* of discrimination in the



experimental task may be due to lack of cues that would be supplied by a more extended context' (p.153). If true, then this seems a 'no win' situation. Halpern (1992) posits the problem that 'mental manipulations [for music] are more reliant on short term memory [and so] there is a problem of presenting truly perceptual tasks as almost always some memory component will enter into auditory comparisons' (cited in Brodsky and Henik, 1997, p.3). However, as most musical tasks require some memorisation ability, can this really be resolved? Sloboda (1985) asserts that:

When listeners hear a melody, their processing of it normally involves the attempt to retrieve implicit harmonic and rhythmic structure. Representing the melody to themselves *means* recovering this structure. In contrast, a chord sequence can be heard without any attempt to recover an 'implicit melody'. (p.52)

This statement would tend to indicate that the structure of Tests 1-3C is an effective means of assessing changes in melody or rhythm. Furthering Sloboda's (1985) argument, melodic perception can be affected by stimulus length, tonality and contour (Bartlett and Dowling, 1980; Hargreaves, 1986; Gudmundsdottir, 1997). Indeed, Gudmundsdottir (1997) argues that there is difficulty in remembering target melodies and 'lures' with the same contour and key but with altered intervals. He suggests that this indicates the salient nature of contour information but that interval information is harder to extract from novel tonal melodies and atonal melodies. The ABRSM could perhaps take this into consideration when designing melodies for test stimuli. Indeed, Gudmundsdottir (1997) suggests that there is no isolated variable that controls the perception of pitch or rhythm changes; frequency, pitch, timbre and loudness all affect this perception.

Much of the psychological research that underpins testing has concentrated on the perception of single tones using simplified sounds in a laboratory (Sloboda, 1985; Halpern, 1992; Sergent, 1993). Sergent (1993, cited in Brodsky 1997, pp.3-4) criticises this approach, asserting that 'although sensory and acoustic abilities may be a pre-requisite to musical processing, they cannot be considered a representative of musical experience as such, and therefore, the use of tones and fragments are not acceptable experimental stimuli for Music Cognition studies'. Furthering this

argument, Sergent (1993) asserts that the three note sequences often used in the laboratory are irrelevant to the cognitive processes of a musician and that, for assessment to be reliable and valid, 'experimental stimuli must contain all the parameters of music' (in Brodsky, 1997, p.30). The implications of this argument relate to Test C yet also go beyond it.

The literature suggests that Test C could well be a viable measure of a performer's ability to identify rhythmic or melodic change. However, the response that the ABRSM requires needs to be gauged against the performer's age-related ability, particularly when a verbal response is sought. Whether these changes in perception occur due to age or experience or both, it remains advisable that the ABRSM must be aware of the implications that Test '2C' onwards may have if candidates are not old or experienced enough. However, the Board could recommend a 'lowest suitable age', perhaps, but 'experience' would be much harder to prescribe. If experience is the key then the ABRSM needs to indicate the importance of this in their teaching rubric and syllabi.

The assumption that a singing response is a measure of inner hearing, and conversely, that the inability to produce a sung response indicates a lack of audiation, should be approached with caution.

#### Test D - Musical knowledge

Test 1D is where the principles are established for the remaining of the aural tests; they do not alter up to Grade 8. In Grade 4 and upwards, Test D now becomes labelled as Test C. Test D requires performers to discuss compositional and stylistic nuances of a piece of music played upon the piano by the examiner. Munday (1994a) asserts that these tests encourage one 'to listen to music properly...they reveal technical terminology and they use these terms as a matter of course...there is not a penalty for not knowing'. The examiner asks questions in English and credit is given for an Italian response, yet 'the examiner will not ask what the Italian term is for that' (Munday, 1994a).

Whilst recognising that Italian is the 'lingua franca' of music and so early familiarity is desirable, McNeil (1994a) found that children aged 8 or 9 'feel very silly when responding in Italian and so Italian terms should be used in the question...But they [the candidates] do find it difficult to express [the technical term required]'. This implies that age is pertinent in considering the developmental stages of cognitive abilities and when to assess them. However, Revesz (1928) argues that it is experience and knowledge, not age, that develops cognition.

As in Test B, examiners are instructed to exaggerate dynamics because it is important that there is no ambiguity. In Grades 4-7 only, compound or duple time is not asked for in Test D, just the numerical response of 2, 3 or 4. The implications of this timing response have been discussed at length, in relation to Test A. Munday (1994a) emphasises that the clapping task is offered as the final test because 'most youngsters get it right'. This almost seems a token gesture from the Board, rather than a reliable and valid assessment of aural ability. However, there is an argument that tests should include some very easy, and some very hard, items to discriminate between candidates properly.

Test D is of relevance to performance ability because it covers aspects of stylistic awareness, technique and context, all of which are needed to develop and facilitate performance interpretation. As the objective for candidates is to 'identify' features, 'some means for labelling, or referring to the identified factors must be either a part of the student's present abilities or provided in the activities' (Regelski, 1975, p.289); the ABRSM concurs with Regelski. There are a lot of implicit rules associated with different musical genres, which are taught and learnt in actual practice. For example, there are numerous 'deviations' in timing, dynamics, and intonation from what seems prescribed in the score. These are different for different types of music, instruments, and individual performers (Gabrielsson and Juslin, 1996).

However, one of the most controversial aspects of these tests is the necessity for the candidate to verbally express their opinion and understanding of the musical stimuli (McNeil, 1994a). Da Costa's observations (1994) raise particularly pertinent questions regarding verbalisation for

performing musicians. She found that whilst discussing their own performance pieces, accomplished musicians (ABRSM achievement standard of Grade 7 and upwards) 'looked vacant at the mention of related musical compositions or composers'. Chapter IV has discussed the necessity for a performer to possess and develop procedural and declarative knowledge; it was argued that the need for declarative knowledge may purely be a means of assessing understanding which would otherwise be difficult to access. This area remains controversial and more research is needed before we can assert that declarative knowledge should, or should not, form a part of a valid and reliable assessment of a performing musician's musical understanding.

Test D aims to ascertain the candidate's understanding and grasp of the musical knowledge. As the Grade level increases, greater demands are placed upon the knowledge of the candidate, with assessment criteria developing along side this. However, it has been argued that 9 to 12 year old children 'are not mentally capable of comprehending questions and tasks put to them and of reporting their own self-observations' (Revesz, 1928, p.176). This is due to their, as yet, underdeveloped schema and conceptualisations of musical theory and its relationship to performance. However, Sloboda and Davidson (1996) argue that 'a performer needs to listen to, analyse, and discuss, much music'. This would suggest that discussing the parameters in Test D is a viable assessment of understanding. However, Sloboda and Davidson (1996) continue that 'we need to measure the development of the ear through skills, not tests'. Indeed, Reaney (1995) asserts that 'speech is an endless balancing act, forever falling off the edge of understanding' (p.43). In other words, whatever the pros and cons of assessing aural abilities through performance, at least verbal inarticulateness and ambiguity will not distort the aggregate result.

These are certainly the problems teachers have raised regarding these tests (Da Costa, 1994; McNeil, 1994a). Indeed, Argyle (1988) asserts that 'music is expressing the verbally inexpressible', with Persson (1992) agreeing that performance is about 'the laws of emotional dynamics rather than those of verbal logic' (p.31). Sloboda (1988) and Hargreaves (1996) argue that children's changes in their organisation of mental constructs are age-based. In essence, these arguments raise the question of how we perceptually encode constructs that support performance ability,

and at what age. How do performers perceive, encode, organise, remember and understand, and how do the structures of external stimuli influence these processes? As Kielian-Gilbert (1996) suggests, an interpretation is a set of mental representations. And further, is Test D trying to access something which is verbally inaccessible? Indeed, how these 'skills' and abilities should be acquired, taught and tested is unclear. It is of interest that Baxter and Stauffer (1988) state that 'with the exception of the language used in singing, performance skills that are necessary to the development of musicianship are non-verbal' (p.51). Regelski (1975) also questions the notion of verbalising the non-verbal in test situations. He stresses that:

Rather than a particular conscious interpretation of the *name* of the note, an aural image should arise. The player's technique responds to the aural image as a cue, not to a separate intellectual or verbal interpretation...this is why the 'inner ear' must be cultivated in any instruction of skills involved in musical performance. (p.217)

Chapters III and IV have discussed the nature of aural ability and the way in which it is taught. Frequently, non-verbal procedures and demonstrations are effectively employed to train aural skills. This raises the issue as to whether the assessment of aural ability through verbalisation is a valid means of examination. As yet this issue remains unresolved.

This section has drawn from the enquiries of music educationalists and music psychologists. This research shows that recognition of timbre and intensity seem to be the first music parameters to develop, yet there is little research that specifies the age at which the ability to conceptualise these parameters develop. Bertrand (1996) indicates that the ability to recognise and respond to various aspects of music is dependent on age and one's ability to decentre. Sloboda (1985) proposes that critical reflection begins to occur around 8 to 10 years of age and that this is due to heightened awareness of stimuli and the ability to form conceptual meanings (Woodruff, 1970; Zimmerman, 1970). This seems a critical age; perhaps the ABRSM should recommend a lowest suitable age for their performance examinations, with particular attention paid to the requirements of the aural tests.

The ABRSM's tests and their relation to performance proficiency have been discussed. Now let us examine in more detail a number of specific issues which have been raised concerning certain features of the ABRSM's aural tests.

### **The Effects of Timbre on Sensory Perception**

#### The sung response

The first half of this chapter has shown that most assessments of musicality and performance proficiency use singing responses as a gauge. Munday argues that 'there is no culture of singing out there; there jolly well ought to be and we'll do our damndest to make sure this is important' (in McNeil, 1996). If the ability to repeat or echo a phrase relates to the ability to access the aural image mentally before being able to produce the sung response, then the ABRSM's tests do seem to be assessing what has been collated as being most valid for the performer's aural development.

Aural feedback and the ability to monitor one's aural image are assessed in a fashion, through the required sung response. The Suzuki school of thought would agree that if one can 'hear' a sound internally, then one can produce it through song. However, some candidates have expressed the concern that although they can hear the pitch in their head, they are unable to sing this image externally; they knew their external pitches were wrong (McNeil, 1994a). Indeed, many pupils find singing irrelevant to their performance skills; some cannot understand the necessity for this at all (McNeil, 1994a).

Sight-singing is generally regarded as demonstrating inner hearing (Regelski, 1975). As Schumann (1834) states: 'should anyone place an unknown composition before you, asking you to play it, first read it over' (p.31). However, the 'reading over' may largely consist of noticing tempo, rhythm, dynamics and so on, but pitch much less so, particularly in keyboard music. Regelski (1975) asserts that performing also demonstrates inner hearing, in activities such as improvisation and concluding a 'question and answer' phrase. Indeed, Regelski argues that the real value of sight-singing is 'to help assess the student's ability to hear inwardly' (1975, p.289).

He continues that if in sight-singing 'the student performs poorly they may profit from some other form of overt behaviour by which he [sic] can manifest his ability to hear inwardly, and, thus, a new objective can be constructed' (p.289). This focus of the goal is apparent where comprehension of the objective is established rather than passing tests. Regelski (1975) further concludes that

if the inner ear is important to a musician, it is mainly through its use in musical contexts, such as playing and conducting. As evaluation procedures of the operation of the inner ear, sight singing...activities are *not valid* when a student who performs well in all of them is unable to identify errors in his own performance or the performance of others. (p.297, italics in original)

### The instrument response

The ABRSM uses imitation through a vocal response to stimuli played on a piano, not through the candidate's own instrument. Revesz (1928) asserts that musicians recognise keys easier on their own instruments, concluding that melodic memory is best developed on one's own instrument. Indeed, this raises issues concerning a performer's awareness of timbral variations and the very validity of the tests; that is, the effect of the piano timbre on a performer's response to the aural tests.

Timbre has long been an area excluded from assessment as part of conventional aural testing (Henson, 1987). It could be argued that the ABRSM is unwittingly examining timbre when their tests are administered on the piano, and the candidate responds with the voice. However, timbre is not an element the Board have set about testing separately, they argue that this is assessed through the performance of the set pieces. Indeed, they do not see these tests as timbral at all. This seems a little strange as different instruments produce different sound qualities and registers; perhaps the performing musician needs to be aware of these, being able to recognise and respond to and control register variations and variations upon the same pitch. However, the harmonics, frequencies and overtones produced by different instruments may play an important role in pitch identification. Indeed, Revesz (1946) adds that by far the greatest number of musicians possess pitch sense in relation to the timbre of their instrument.

A fundamental question relating to the use of the piano in aural assessment is approached by Warrier and Zatorre (1996). This study, based upon the interaction of pitch and timbre within differing contexts, extends the research of Semal and Demany (1991) and that of Singh and Hirsh (1992). The dependence of pitch perception upon timbre was examined, first using the presentation of two tones in isolation, and secondly, in the context of a familiar melody. Three timbres were presented, created by varying the relative intensities of 11 harmonics.

In the isolation task, two tones were presented where the second tone could differ in pitch and/or timbre. Subjects were required to indicate whether the second tone was the same or different from the first, making judgements on pitch perception only.

In the melodic context, the  $F_0$  and timbre of the last tone were altered as in the isolated context. The results indicate that in isolation, timbre influenced pitch perception; in the context of a melody, it did not. These findings indicate the importance of contextualisation when identifying pitch.

A study exploring the importance of reference pitch points within a melody and the application of long-term memory traces ensued. Warrier and Zatorre (1996) found that when a pitch is part of a melodic context, or a familiar tune, subjects' identification by pitch was unaffected by timbre. However, in isolation, with no point of reference or memory trace, timbre differences overwhelmed pitch perception.

Warrier and Zatorre (1996) conclude from their findings that spectral elements of timbre<sup>1</sup> can affect pitch perception, yet do not extrapolate from their findings any practical implications for the realm of 'real' musicians. Potentially, this has great ramifications for application, particularly for the design of aural assessment for performing musicians. However, various issues need to be researched further before these results can be implemented. First, Warrier and Zatorre (1996)

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<sup>1</sup>. The 'amplitude and frequency of the component vibrations composing a complex oscillation' (Handel, S. 1993). The timbre perceived depends on the onset characteristics and harmonic spectrum of the sound. The sound spectrum consists of 'all audible frequencies that are components of a given complex sound' (Griffiths, P, 1986, p.84). Timbre is the 'quality of sound disregarding frequency and intensity' (Handel, S., 1993, p.556)



used non-musicians as subjects; a study comprising both musicians and non-musicians may well reveal a more reliable conclusion regarding the nature of timbre differences and pitch perception to musicians. For example, different instrumentalist groups may vary in their perception of pitch, depending upon the timbre used.

Secondly, synthesised tones were used as stimuli, in themselves a very useful tool to manipulate the harmonics within a given tone. However, musicians, particularly 'traditional' performing musicians, operate with 'real' timbres of acoustical instruments, rather than synthetic tones.

Utilising the timbre of a variety of acoustical instruments would produce some interesting results to compare. Perhaps we need a wider context to determine these effects, such as the 'practical' world of music.

We have seen that timbral awareness is important for an effective musician, yet it is often overlooked in assessment. Both pitch and timbre are rooted in the frequency dimension of sound. Research tends to suggest the importance of context in denoting the perception of timbral differences; when a tone is produced in isolation, with no point of reference or memory trace, timbre differences eclipse pitch perception (Singh and Hirsh, 1992), when tone stimuli are presented as part of a melodic context, or a familiar tune, the ability to identify pitch is unaffected by timbre (Semal and Demany, 1991). With the complexity of the timbre of a piano, used in testing aural faculties, this concept may prove harder to grasp than with an instrument with less overtones. As the concept of an octave is learned, it can be highly confusing for a non-pianist child to be told, when hearing two different notes played on the piano, that they are fundamentally the same. The complexity of harmonic frequencies would surely affect identification due to timbral differences. As Revesz (1928) elucidates:

The form of the vibration depends on the number of the harmonic overtones and their mutual intensity. And this *form* determines the *quality* of the note that is played. (p.11, italics in original)

The ABRSM's tests may be, perhaps pragmatically, biased towards pianists, with solo instrumentalists and vocalists finding it hard to cope with chordal and linear questions of

discrimination. For example, the mechanism of the piano provides no room for the fine intonation adjustments which may have some relevance to a singer or string player. Indeed, it could be argued that the ABRSM's musicianship examinations provide a more appropriate context for using the piano as the stimulus. Gephardt (1978) looked at whether timbre affects response to aural perception, that is, whether the timbral information a musician gains through intimate contact with the timbre of their instrument affects their response to tests administered on the piano. Gephardt (1978) found some evidence for this, with one of his subjects commenting that 'the timbre of an instrument sometimes gives the pitches away' (p.272). Perhaps those non-pianists who enter for the ABRSM's performance examinations have become familiar with the sonority of a piano, indeed many teachers accompany their pupils during lessons, but is this the most effective and reliable way to assess such skills? Gephardt (1978) found that pupils would kinaesthetically finger or sing audibly or internally to enable themselves to respond to the aural stimuli. This suggests that performers do use their instruments as a reference for aural ability examinations. Mainwaring (1931) and Seashore (1938) also stress the importance of imagery and kinaesthetic cues in responding to aural stimuli. Work by Cook (1996) and Stowman (1996) tends to suggest that some instrumentalists, such as the trumpeter or trombonist, utilise kinaesthetic and haptic imagery to produce an effective performance. These two kinds of imagery are directly related to timbre referencing as each particular pitch and register stimulates a kinaesthetic or haptic response from the timbral-related image. If an inappropriate instrument forms the audio stimulus then the respondent has few kinaesthetic or haptic cues to render a successful and appropriate response. This may suggest that these cues aid memory. Luce (1958/1965) concludes that ear tests administered on one's own instrument are increasingly beneficial to musical development, but only if the performers can already read music (c.f. chapter IV).

Furthering this argument, Gabrielsson and Juslin (1996) found that different instruments have different limitations for musical expression. For example, a pianist can vary dynamic accent through rhythmic delay (Seashore, 1938). This could well be a flaw in using the piano for aural stimuli as it lacks intonation differentiation, vibrato of the 'human' kind, and because of its complex timbre. Additionally, Thostenson (1967, cited in Gambie, 1989) found that melodic

instrumentalists were disadvantaged, relative to harmonic instrumentalists, in tests of harmonic perception.

In contrast, violinists need to be aware of the function of notes and their harmonic implications, where pitch 'bending' is often employed (Seashore, 1938). However, the ABRSM does not specifically test for these important characteristics. Singers also use sharpening and flattening of intonation for expression; indeed '...a rigidly true intonation without vibrato would be uninteresting and intolerable in the singing voice' (Seashore, 1938, p.267). Seashore (1938) continues, 'the singer expresses his musicianship primarily in two ways: in the control of the quality of tone and in phrasing', with musical phrasing being an expression of 'personality and musical interpretation, and phrasing is largely a matter of time and intensity' (pp.76-7). And further, flutes and stringed instruments have additional noise through breath and bow, respectively, before resonance. Perhaps this timbral difference also affects aural perception.

This again raises the question of whether aural skills are more pronounced for different instrumental groups. In chapter III, the possibility that aural skills may be domain-specific was introduced. Indeed, it was argued that aural imaging also requires the ability to image timbre. Gephardt (1978) found that pianists tend to do better in melodic dictation and especially on harmonic tasks, suggesting that timbral familiarity is the reason for this. Gephardt (1978) also speculates that kinaesthetic cues influence perception in that one perceives by tonal quality and that one is 'ultra sensitive' to the tonal differences of one's own instrument. Indeed, Elliot and May (1980) 'suggest that learning piano as a second instrument may be a significant independent factor in the development of aural skills' (in McPherson, 1996, p.158). This statement can be interpreted in many ways. It could be that the piano provides precise pitch, or that, more probably, one becomes accustomed to the timbre and kinaesthetic timbral cues of the piano when this is used as the instrument for test stimuli. Scheirer (1996) raises the question:

How hard is it for humans to hear out pitches from chords? What is the percept of a 'chord'? (Is it just the sum of the percepts of the component notes?). (p.320)

Lester (1995) argues that a pianist's aural ability develops slower than that of string players due to the need for string players to continuously adjust, whereas pianists are either right or wrong. That is, string players, unlike pianists, have to 'make' their own notes, so that, especially when playing with a fixed-pitch instrument, their life is one long 'aural test'!

Thus, while existing methods of assessing aural, which rely on singing, may well be valid, it is possible that other methods need investigation. For example, it may be argued that 'inner hearing' is evidenced in performance, or through responding on one's instrument (an option rarely chosen by candidates); the reasons behind candidates rarely choosing to respond on their own instrument will be addressed in chapter VIII. More importantly, such methods may have the additional benefit of appearing more directly relevant to their performance ability for the candidate. Indeed, Pratt (1990) focuses on the development of memory and aural awareness through operationally participating in activities. Perhaps assessment centred around a performer's instrument would provoke better responses and achievement, rather than responding to the piano. This would provide the necessary timbral, haptic and kinaesthetic imagery to evoke the optimum response.

### **The Use of Verbalisation**

Naming is treacherous  
for names divide  
truths into less truths,  
enclosing them in a coffin of counters  
give the spell no name! (Robert Graves, in Reaney, 1995, p.43)

We have seen that the ABRSM's aural tests require the ability to verbalise musical knowledge. However, chapter IV has already raised the issue surrounding the necessity for procedural and/or declarative knowledge, which perhaps indicates that the Board is requiring that we render 'speakable' what is necessarily 'unspeakable'. The inability to do this may purely be the result of the development of performance skills through procedural knowledge, unmatched by a parallel development of broader musical awareness and knowledge. However, there is a problem

here in that it may be difficult to distinguish the procedurally knowledgeable performer from one who is simply an inarticulate performer. The research discussed in chapter IV suggests that the inarticulate performer may lack the necessary understanding of the relationship between aural skills and performance to verbalise it. Indeed, Da Costa (1994) and McNeil (1994a) found that both pupils and many teachers do not understand the purpose of these aural tests in relation to the other components of the performance examination. Additionally, both McNeil (1994a) and Da Costa (1994) found great concern regarding the necessity for pupils to verbalise about their musical knowledge, even though level of verbalisation required is 'unofficially' age-related. Priest (1993) also criticises the demands for unnecessary 'oral description of notation' in examinations, arguing that the stress on verbal fluency is too strong. Indeed, Salaman (1994) calls into question the reliability and validity of tests requiring verbal responses. The simplicity of the performer and listener just 'knowing that something musical is happening' (Salaman, 1994) provokes the question as to how one can assess this implicit knowledge that seems to be inaccessible.

There are two issues that this section raises: whether the assessment of a performer's understanding of the relationship between aural skills and performance ability needs to be declarative and whether the inability to do this reveals a gap in the performer's knowledge and understanding. One cannot assume that the inability to verbally articulate, specifically in relation to Test D, provides conclusive evidence for lack of understanding.

### **The Age of the Performer**

Most of the previous measures of musical ability have taken into account the importance of age-related abilities, yet the ABRSM's examinations are not age-specific. For example, Seashore's (1919) and Wing's (1939) tests were designed for 8 year olds and upwards. In direct relation to Test 2 to 3C, Zenatti (1969) found that 5 year olds were unsuccessful in identifying a pitch change as part of a three note melody, using both tonal and atonal stimuli. In practice, however, 5 year olds do not usually take Grade 2 plus, though they are not barred from it. Six and 7 year olds

were slightly more successful with tonal sequences rather than atonal sequences. These findings suggest the importance of global features, whereby the overall structure, phrasing and context of the music is most pertinent. Global features always involve memory, whereas local features are mostly determined by 'straightforward and automatic operation of the listener's sensory systems' (Dowling and Harwood, 1986, p.160). Further, 'the listener's prior experience with sets of similar pieces provides for the building up of schemata knowledge that allows for the filling in of aspects not explicitly stated (Neisser, 1976, in Dowling and Harwood, 1986, p.160); these are what Gibson terms 'invariants'<sup>2</sup> (1979). It is these invariants that determine style and shows that a listener 'knows when the beat occurs even when it is not explicitly stated in the audible rhythmic pattern' (Weaver, 1939).

'As was shown in chapter II, task demands have to be related to context (Dowling and Harwood, 1986; Sloboda, 1988; Pratt, 1990; O'Neill and Sloboda, 1997); only then can an internal schema be formed. For example, Imberty (1969) found that 8 year olds could distinguish between major and minor only in the context of moving from one to the other, not in isolation. This was also revealed in a study by Cuddy (1968/70/71). Cuddy found that training methods which emphasised the acquisition of a framework of reference, that is notes among all notes, rather than equal note attention, led to better pitch identification. That is, identifying a note depends on being able to relate it to its context in a major or minor scale. This is the essence of training and learning that is discussed in chapter IV. Each note is pointless without its companions.

This section has emphasised the importance of age-related assessment and the necessity for contextual significance. The ABRSM's examinations, although clearly developmentally presented, do not specify the importance of age-related tasks or response. For a valid and reliable measurement of a performer's achievement, age-related tasks may prove to be more effective. As the Gulbenkian Report (1982, cited in Ball, 1987) states, examinations should consist of '...highly structured instruments of assessment which are intended to test specific...abilities at particular

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<sup>2</sup>. Invariance refers to, 'in general, in the study of perception and learning, those aspects of the stimulus...that display the higher invariances, relative to other aspects, are learned most quickly and easily' (Reber, 1985).

points in pupil's development' (p.83). However, this quotation must be approached with caution; those 'particular points' could take place at many different ages, if this refers to musical development rather than general, physical or intellectual development.

## **IMPORTANT OMISSIONS FROM THE ABRSM's AURAL TESTS**

This section will explore two aspects of performance that the ABRSM has omitted from its aural assessment, intonation and audiation. This will be undertaken by drawing from the specific key elements that the literature denotes in chapters II and III.

### **Intonation**

Fogarty et al (1996) identify the need for intonation training and the assessment of it as part of general aural training. When the focus of attention is on sound production '...it is important that musicians have a highly trained sense of what "sounds right", especially when using instruments which do not use a keyboard to generate the tones' (Fogarty et al, 1996, p.157). Taylor (1969) and Duke (1985) also highlight intonation as the most important element for effective musical performance. Seashore (1938) underlines the importance of utilising deviation from the pure tone, arguing that artistic intonation expresses musicality; what is commonly referred to as 'feel'. Truslit (1938) asserts that 'feel' or 'inner motion' cannot be found intellectually, however this suggests that performance is the area in which intonation as a reflection of musicality should be located. The ABRSM does not assess intonation separately from performance; perhaps it does not need to if it is assessed during the prepared pieces and technical exercises. However, if good intonation is a reflection of the ability to monitor aural feedback and aurally image then it could be argued that this should be assessed within the aural tests. After all, the tests should highlight weaknesses. This theme will be discussed further in Part II.

## On Measuring Audiation

Are those [sounds]...becoming real only as they appear [externally]? Are they not real in the mind that makes them? Or finds them? [We are] projecting into the realm of physical reality formed images that have their origin in imaginal reality. (Reaney, 1995, p.76)

Seashore (1919) expresses the need to measure auditory imagery because '...it is in terms of this [auditory imagery] that we relive music...and express new music in creative imagination' (p.339). However, Seashore adds that this can only be measured by introspection, through the subject's own self-report. Indeed, mental imagery '...does not lend itself accurately to psychophysical measurements' (Seashore, 1919, p.161). However, there has been some research which purports to demonstrate the existence of aural imagery through observable consequences of internal processing, that is, through singing (Zenhausern, 1978; Kosslyn, 1980; Shepard and Cooper, 1982; Finke, 1986, in Welch, 1990, p.2). This research often incorporates sight-reading tasks as stimuli from which the ability to aurally image can be gleaned. If sight-reading is indeed a task that provides overt evidence of aural imaging then perhaps the sight-reading component of the ABRSM's performance examination is where aural imaging and the ability to monitor and respond to aural feedback can be adequately assessed. However, in the current form of the ABRSM's tests, candidates are required to continue playing or singing if they are aware of having made an error. If one stops to correct that which does not concur with one's aural image, the ABRSM penalises this. In fairness to the ABRSM, it perhaps does this because in the real world, sight-reading ability is measured as much through fluency and continuity as through accuracy. For practical purposes, a degree of inaccuracy and omission is acceptable by the Board, so long as one can 'keep going'. Stopping and correcting is obviously more vital for learning and practising a piece of music, which is the opposite of sight-reading.

This section has identified that there are aspects of aural ability which are necessary for an effective performance which the ABRSM's aural tests do not assess. The literature suggests that secure intonation and the ability to manipulate this is central to a musical performance. The essence of this skill seems to be labelled 'feel', the ability to 'inwardly move' with the music and to use pitch expressively to communicate this. It has also been shown that sight-reading tasks are



often employed to assess the ability to aurally image. The ABRSM's inability to recognise sight-reading as an aural skill, preferring sight-singing as an expression of audiation, is perhaps a little remiss. However, it does assess sight-reading *per se*, where fluency is more important than stopping to correct.

The following section will debate the ultimate question arising out of the literature, that is, whether the ABRSM's aural tests are a valid and reliable means of accessing and assessing the aural skills that are employed during performance.

### THE NEED FOR AURAL EXAMINATIONS

Much of the literature indicates concern and uneasiness regarding the assessment of aural skills as part of the ABRSM's performance examinations. The literature has revealed three schools of thought on the nature of the assessment of aural skills. There are those who argue for the necessity of separate tests, those who assert that aural skills can be assessed within performance, and also those who argue that the nature of traditional aural testing is obsolete.

It is clear that aural skills are important for the development of performance efficiency. However, the ability to monitor aural feedback, to image aurally and to develop understanding are skills that are not necessarily immediately accessible or assessable due to their covert nature. It is argued that a musician's developed aural skills are revealed within the actual performance, as this is the realm to which they are directly related. Indeed, Munday (1994a) states that 'the central objective of the examining service [is] namely that examiners will "judge the performance"', though clearly not the only objective as things stand. The problems that have arisen with the aural tests and understanding is that performers and teachers are often unable to relate the aural skills assessed to performance ability. This is why we need to be clear about what aural tests tell us. Indeed, Salaman (1994) questions the whole idea behind aural tests as part of performance examinations. He argues that aural tests are irrelevant to the assessment of aural ability,

professing that aural acuity can be assessed through instrumental performance, by the examination of intonation and timing. However, this would cause problems for the ABRSM because it could not happen in piano and organ examinations; the tests need to be common across all instruments. According to Salaman (1994), these examinations could embrace 'a broader repertoire and a broader range of music skills such as playing from memory and by ear and improvising' (p.219), discussion of the music being an important element. Perhaps the ABRSM's newer aural tests have moved closer to assessing aural skills in that the candidate needs to understand the relationship between aural skills and performance proficiency. However, ABRSM examiners have expressed the opinion that many candidates who do well in the aural tests do not possess an understanding between these two skills (Personal Correspondence, 1999). Ultimately, there is still a gap, perceived by teachers, performers and educationalists, between the aural tests and their relevance to performance.

Bohm and Peat (1989) propose that assessing aural skills separately limits the context, for

...without the need to question related concepts...this only acts to prevent a clear awareness of the ultimate connections of the problem to its wider context and implications. The result is to produce an artificial and excessively sharp division between different problems and to obscure their connections to wider fields. (p.23)

Indeed, Seashore (1919) argues that factors which are not directly measured should still be noted, that is:

voice-quality, register, volume, evidences of training, general motor control-shape of hands, grace and precision of movement, and general alertness. Evidences of rhythmic tendencies, vividness and fertility of imagination, characteristics of memory...the expression of musical feeling...temperament. (p.340)

These must surely all be revealed through actual performance and so it is the responsibility of the examiner to tap into manifestations of these. However, it is questionable how efficient an examiner would be in evaluating many instruments, styles and capabilities and be able to determine the presence of aural skills. By using separate tests, perhaps we are filtering out the richness of performance, '...cramping your awareness into this wafer-thin monolayer of reality we

call this present moment and this shrunken circle of reality we call this present place' (Reaney, 1995, p.69).

The problem with assessing all aspects of musicality through performance is the examiner's inability to distinguish the musician from the influence of their teacher. Indeed, it may be that if 'the same task is encountered under relatively unchanging conditions...the responses will become stereotyped, flexible skills will degenerate into rigid patterns, and the person will more and more resemble an automaton...whose actions and ideas move in narrow grooves' (Koestler, 1966, p.118). One definition of good teaching is when the pupil not only 'does what teacher does' but becomes increasingly independent and capable of teaching him/herself. One might expect this sort of progression through the Grades, although as the present ABRSM 's examination stands, it would be hard to detect; a quick-study might show it better than sight-reading. This perhaps gives a reason for examining aural ability outside of performance so that the skills are examined through their transferability. As Regelski (1975) relates, Piaget's conservation principle asserts that 'learning is shown when the learner displays the ability to respond to a new situation (stimulus) in terms of successful behaviour(s) used previously under different conditions or in a different context' (p.6). In accord with the Board's philosophy, Boyle and Radocy (1987) propose that the examination of relevant musical skills and knowledge pertaining to performance, should involve 'responses to (or production of) aural musical stimuli' (p.43).

Harvey (1990), inadvertently perhaps, admits the concern surrounding this area. Clearly, lack of teaching these skills may be one reason why people often turn away from these tests. However, Harvey (1990) argues that the candidates' 'lack of proper focus of listening in the pitch tests is apparent from the response itself' (p.5). Previously, the ABRSM's old tests stressed duration, pitch and the naming of intervals in their aural perception examination, basing these assessments upon that which is overtly testable.

We use behavioural objectives to elicit and assess 'demonstrable indications of conceptual learning' (Regelski, 1975, p.169). We must be able to ascertain to what extent overt behaviour is a

reflection of mental processes. Munday (1994a) asserts that we need to know that the candidate can think for him/herself and in an examination situation this cannot be wholly assessed by listening to prepared pieces. To test the pupil's understanding, and not just the interpretation of their teacher, it could be argued that candidates need to possess some knowledge of the context of the piece, of the style and structure of the piece and their reasons for performing it in such a way. Of course, young candidates taking the early grades will not be intellectually developed enough to respond to these types of questions, but it may be argued that there is a place for them as one matures, both musically and intellectually. Older candidates sitting the lower graded examinations may be aided in their development if this criterion is considered with the factor of age. In order to assess the effectiveness of the candidate, one has to examine elements outside of a prepared performance so that judgements and cognitive skills, combined with technical competency, can be ascertained independent of the teacher (ABRSM, 1994). However, some professional musicians may not be able to complete the aural tests successfully. Does this mean that they are not musical; is their performance hindered by this apparent void? We would hardly say so. Perhaps the mastery of these skills inevitably becomes stored procedurally; the expert performing musician having no need for declaratively stored skills.

Thackray (1978) asserts that we need to concentrate on developing rather than testing, advocating a 'multi-sensory approach in which ear, voice, eye and finger are all involved' (p.48). However, Ball (1987) asserts that the world of competition, often denoted by peer comparison of marks attained in examinations, is dangerous if it rests solely on performance, given the argument previously made. He argues that this is the reason why other tests must supplement the results. However, validity and reliability of the tests must be present, as variation could mean entirely different results and predictions (Harlen, 1980, in Ball, 1987). Indeed, 'one can assess or measure...providing there is some clearly defined or appreciated standard which can be used for comparison' (Harlen, 1980, p.57). The ABRSM's tests are not normative.

This section has demonstrated that there are opposing views about the presence of aural tests within performance examinations. Some writers agree that separate tests are necessary for an

effective and reliable measure of aural ability. Other authors propose that performance is the natural realm for the assessment of aural skills. There is a further argument which suggests traditional aural testing has no place when measuring and developing a performer's aural ability. It is therefore suggested, and is implicit in the literature, that aural skills are important and we need to assess them.

## INTERIM CONCLUSION

This chapter has explored the validity of the ABRSM's aural tests. This was achieved by identifying specific aural skills which the Board assesses and comparing these with the necessary aural skills in the previous chapters. More specifically, the required responses to the tests were scrutinised and debated.

The need to assess sense of pulse is adequately provided for in Test A. However, the ambiguity surrounding the identity of the time signatures, the issue of compound and simple time, needs to be addressed. Indeed, it was suggested that this ambiguity may hinder the development of a performer's ability to 'feel', that which is arguably the essence of musicality. Additionally, the ABRSM's performance examinations also measure one's sense of pulse through sight-reading ability. However, in sight-reading many other factors may hamper the delivery of a steady pulse, and so it is not such a 'pure' test as the aural one.

Test B adequately provides for the necessity to assess pitch as this test does appear to examine key perception and its relation to melodies. However, singing may not be appropriate to ascertain this. Additionally, Test B may be susceptible to developmental issues, for example, the development of the conception of melodic contour versus individual phrases, the importance of global features and their context.

With Test C, like Test B, there may be some developmental changes which make age an issue, for example the problem of decentration, or perhaps these are due to experiential differences. Also, like Test B, the issue of a sung response begs the question of whether this is an appropriate form of assessment.

Concerning Test D, while agreeing on the need to encourage discussion and analysis of music, differences in the age-related ability to comprehend and respond to such questions needs to be considered. Also, the procedural/declarative debate raises the question whether such knowledge can be externalised anyway. Indeed, it was suggested that the need for understanding to be verbally declared is purely because of its ease of assessment; the inability to do so does not necessarily indicate lack of aural skills.

One of the major issues discussed is the use of a singing response to these tests. The ABRSM asserts that this response is evidence of the ability to inwardly hear, yet one cannot assume that the inability to produce an accurate singing response is evidence of the lack of aural imaging. Arising from the discussion on singing, it became evident that using the piano as a source of test stimuli may be deemed inappropriate. This is because when using aural imagery to perform, a musician may reference his/her instrument for timbral, kinaesthetic and haptic cues. This would mean that the use of a piano for administering the ABRSM's aural tests does not provide a valid assessment of aural imaging in particular, and of domain-specific aural skills in general. There is some evidence that sung response and sight-singing are of benefit to the performing musician. However, difficulties are introduced by timbral differences; the ABRSM may be biased towards pianists. This raised the important issue that aural skills are developed in relation to a specific instrument.

Two of the major weaknesses of the ABRSM's aural tests are revealed in what they do not assess, intonation and audiation. These skills do not seem to be presently assessed directly and the literature suggests that they ought to be. The ability to aurally image was discussed in previous

chapters as being the most important skill to master for the performing musician; the present tests even seem to discourage it when candidates are penalised to stop and amend their mistakes.

This chapter shows that there are varied opinions about the need for and the role of aural tests. The evidence and literature seem to suggest aural skills are important for a musical performance and that we do need to have a form of aural testing. The ABRSM's present tests have a number of strengths but they also have limitations. It has been shown that the very nature of assessing aural ability is controversial; there is no agreement about how this should be approached. In spite of this, there is some evidence to suggest that the ABRSM's aural tests may not be adequate; the time is ripe for a new approach to the definition and assessment of aural skills. We need to explore ways of building on these strengths by looking at alternative modes of assessment which are demonstrably valid.

## Chapter VII Summary and Aims of Research

In musical performance, the only measurable attributes are the aesthetically insignificant. In the unlikely event of two listeners agreeing on the accuracy of a performance in respect to pitch, rhythm and dynamic variation, this would still leave out of account the most important aspects of individual interpretation, and so, in performance (as in music examinations) the greater the accomplishment of the performer the less valid are attempts of 'grading'. (ESEA<sup>1</sup>, 1984, p.17, in Persson, 1993, p.105)

### INTRODUCTION

Part I of this thesis has gathered theories and evidence concerning the nature of aural ability and its role for the performing musician. Indeed, specific questions, such as whether and how aural skills enhance performance ability, have led to an examination of the literature from a diversity of fields, including general psychology, music and developmental psychology, music education, musicology, aesthetics, philosophy, examinations and the nature of assessment, and physics.

The aim of this chapter is to summarise the major issues which have arisen from this review of the literature and to show how they lead to the research questions posed by the present study.

Chapter II demonstrated different methods of assessing performance skills and musicality. Despite the need for psychologists and music examination boards to establish jointly a working definition of musicality and performance ability, they have continued to focus on different objectives which have resulted in the development of separate tests; ultimately, 'musicality' remains vaguely-defined. In 1985, Sloboda recognised a gap which needed to be bridged between the disciplines of psychology and music. He identified two separate areas of specialism: psychologists focus upon processes involved in the perception of tones involving scientific rigour, whilst musicians provide experience of and insight into music theory and practice. Although authors and practitioners appear mostly to agree about what aspects of performance competence

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<sup>1</sup>. ESEA stands for the 'Elementary and Secondary Education Advisory' of 1965. See Mark, M. L. (1992) for further clarification.



are important, the criteria widely overlap and differ in some detail. Research has neglected areas of 'feel' and 'musicality', perhaps because these terms are too vague. As well as cognition and psychomotor skills, a good performer is 'efficient at recognising the relevant visual and aural clues...increasingly able to eliminate his conscious or specific attention to mediating responses and increasingly able to evaluate the accuracy of his performance on his own...making adaptive behaviour if required' (Regelski, 1975, p.45).

It is proposed that by combining psychological knowledge and musical experience, the way will be paved for a more cohesive and valid understanding and evaluation of musical performance. The fundamental concern here is not necessarily how performance aspects are categorised and compartmentalised; it is to amalgamate and draw upon the research findings from the disciplines of psychology, education and music and thereby to establish the aural skills that actively enhance performance ability, and to identify the tools needed to facilitate the development of these skills. It is hoped that this will establish a more effective and useful means of assessing aural ability within the performing musician.

## **CRITERIA FOR AN EFFECTIVE PERFORMANCE**

In order to identify the relationship between aural ability and performance proficiency, it was first necessary to clarify what is generally meant by 'effective performance'. Chapter II outlined how authors and practitioners have tended to define musicality as a means of establishing the criteria needed for an effective performance. However, musicality was found to be variously defined, and indeed many agreed that it was indefinable. In order to investigate empirically and systematically 'musicality' and its relation to aural skills and performance ability, a working definition of musicality must be established; the literature confuses this issue by providing numerous and broad definitions. In spite of this, both psychologists and musicians have designed specific tests to assess performance proficiency, often without establishing the skills required for an effective performance. The variety of terms that researchers have decided upon,

encompassing intellectual, physical and emotional elements of a performance, perhaps imply certain aspects of musicality, but this implication has not been explicitly recognised. This is particularly true of aural training, which was discussed further in chapters III, IV and VI. So, although it seems that authors broadly agree upon what constitutes good performance, the specific elements that make up such a performance have not been explicitly investigated.

Regardless of opinions of authors (either psychologists or musicians), in the end it is the understanding, perception and conception of teachers and students which will provide insight into the current relation (or lack of it) between aural ability and performance, as it is the student-teacher relation which in practice defines what constitutes aural ability, and how it is trained. As Robson asserts:

Those who are closest to the problem and process are in the best position to come up with solutions and then to implement them. (1993, p.437)

## **THE RELATIONSHIP BETWEEN AURAL TRAINING AND ASSESSMENT**

Chapters II and III identified the relationship between aural skills and performance ability. The most significant skills identified were the competence to image aurally and effectively monitor aural feedback, the capability to manipulate timbre for expressive and communicative purposes, and to perform with an increased sense of 'feel', pulse and rhythm. These skills were all described as being vital to a 'musical' performance.

It has been argued that the content and methods of teaching aural skills to performers is driven by the presence of aural tests in performance examinations. As Priest (1993) comments, the teaching of aural skills is often '...unrelated to the pupils' instrumental playing and to music they know...using only the piano' (p.105). Indeed, Thackray (1978) calls for a 'broader approach' to aural training, which he asserts is too narrowly defined in aural tests; aural training needs to be balanced with perception and practical skills. Additionally, Pratt (1987) questioned whether aural

training materials are relevant and whether they reflect the real needs of musicians. This expresses the concern that aural training may indeed be examination driven and queries whether this is an acceptable and effective means of training aural skills. As Salaman (1994) so rightly expounds 'we have to acknowledge that the methods of teaching closely allied to graded examinations represent just one approach, an approach that depends heavily upon the successful acquisition of musical literacy' (p.219). There thus appears to be a need to investigate aural ability and aural training as it relates specifically to performance efficiency, although not necessarily in an assessment context. It is the perceptions of teachers and professionals that need to be brought to the forefront, not, which has been the focus of research previously, the test objectives.

The literature has indicated that there are four main ways of training aural skills; these are through imitation and demonstration, through singing, through kinaesthetics and through improvisation. Most of the literature also suggests that teaching by demonstration is the best way to train aural ability. In particular, the role of movement seems to play an important part in developing the ability to 'feel'; it was suggested that, perhaps, the importance of movement advances the meaning of musicality. Additionally, if one is taught through demonstration then it is highly likely that skills will be learned procedurally. This leads to the investigation as to how teachers actually do train aural skills and is linked to the previous question of their definition of aural skills.

## **ASSESSING AURAL SKILLS**

So far, aural ability has been addressed independently of the issue of how to assess aural skills. However, the literature suggests that training methods may also be ways of assessing these skills. For example, it has been argued that performers who cannot utilise aural imagery and feedback effectively are unable to improvise musically or play by ear. The literature suggests that the ability to improvise and/or play by ear may be a vehicle for devising and employing assessment

procedures. This raises the question: can, and should, aural skills be assessed away from the context of performance?

Chapter VI has demonstrated that there are opposing views about the presence of aural tests within performance examinations. Some writers agree that separate tests are necessary for an effective and reliable measure of aural ability. Other authors propose that performance is the natural realm for the assessment of aural skills. There is a further argument which suggests traditional aural testing has no place when measuring and developing a performer's aural ability.

The literature review has indicated that the ability to audiate internally has been hailed as the key to understanding, which in turn develops schema, memory and conceptualisation. It was proposed that an increased sense of communication and 'feel' in performance indicates that a performer is effectively audiating. There is a consensus that inability to understand, realise and integrate aural skills within performance is the main reason for an ineffective performance. It has been suggested that closing the gap between aural skills and performance competence, through an understanding of the relationship between the two, is the means to an effective, musical performance (Clarke, 1987). However, the characteristics of this understanding are yet to be explored.

The ABRSM's aural tests are non-instrument specific; it was suggested that this might limit their validity if aural skills are specific to the instrument-domain. It may be inappropriate that different instrumentalists receive the same aural training and, more specifically, that their aural skills are assessed using the same tests. It was suggested that aural skills may relate specifically to the instrument domain and consequently, the degree to which different instrumentalists use aural skills may vary. If this is so, the development of domain-specific assessments may be called for.

One of the major issues discussed is the use of a singing response to these tests. The ABRSM asserts that this response is evidence of the ability to hear inwardly, yet one cannot assume that

the inability to produce an accurate singing response is evidence of the lack of aural imaging. Arising from the discussion on singing, it became evident that using the piano as a source of test stimuli may be deemed inappropriate. This is because when using aural imagery to perform, a musician may reference his/her instrument for timbral, kinaesthetic and haptic cues. This would mean that the use of a piano for administering the ABRSM's aural tests may not provide a universally valid assessment of aural imaging in particular, and of domain-specific aural skills in general. There is some evidence that sung responses and sight-singing are of benefit to the performing musician. However, difficulties are introduced by timbral differences, with the suggestion that the ABRSM may be biased towards pianists.

Two of the major weaknesses of the ABRSM's aural tests are revealed in what they do not overtly assess, namely intonation and audiation. These skills do not seem to be presently assessed directly and the literature suggests that they ought to be. The ability to image aurally was discussed in previous chapters as being the most important skill to master for the performing musician; the present ABRSM sight-reading tests seem to discourage this by not allowing candidates to stop and amend their mistakes.

Chapter VI shows that there are varied opinions about the need for and the role of aural tests. The evidence and literature seem to suggest that aural skills are important for a musical performance and that we do need to have a form of aural testing.

## **THE ROLE OF UNDERSTANDING**

The generic categories that contain the elements of an effective performance can be summarised as technical, musical and communicative. Within these categories, the majority of authors express the need for complete understanding of how these elements inform performance so that the performer is able to transfer this knowledge to other performance situations. However, exactly what is meant by 'understanding' is often not explained.

This leads into a further two areas of inquiry: How does understanding of the role of aural skills when performing enhance performance ability? And following on from this, and in relation to chapter VI and assessment, does this understanding need to be explicit or implicit? The necessity to be verbally explicit about aspects of music was discussed and it was hypothesised that some performers may learn procedurally, and thus, the need for declarative knowledge may be an inappropriate method of assessment. Perhaps the ABRSM requires candidates to verbalise about aspects of music because of its ease of assessment, as opposed to the assessment of procedural knowledge through the activity of performance. This has implications in particular for the final item in the ABRSM's aural tests. A candidate may know implicitly about the musical extracts that the examiner plays but may be unable to verbally access that knowledge due to its implicit nature.

This question relates to the findings of chapter IV where two contrasting theories were discussed about the need for, and nature of, musical understanding and how this can be made manifest. The first argues that musical knowledge needs to be conceptualised and categorised to the degree that it becomes declarative; that is, that musical understanding needs to be verbally expressed by the performer. The other viewpoint argues that musical knowledge can be wholly procedural and is evidenced through the performance itself, for example through a sense of 'feel' and communication. It was suggested that perhaps the current emphasis upon declarative knowledge is assessment-led; that which is easily accessible can be assessed. However, there is some evidence to suggest that an understanding of the role between aural ability and performance adeptness is necessarily implicit; there is no need for it to be otherwise. In chapter IV it also becomes apparent that teaching aural skills and the need for assessing these are in sharp contrast. That is, aural skills are primarily taught through visual and aural demonstration whereas the assessment of these skills require declarative knowledge. Training seems to point to the importance of procedural knowledge and the involvement of motor and vocal factors in learning and understanding music, in strong contradiction to the advocates of the need to develop declarative knowledge. It is quite clear that the theory of learning which is based on acquiring declarative knowledge is not revealed through actual teaching. For example, an observable

response is a frequent method of monitoring a performer's learning. We have seen how various techniques have been employed to train aural ability, although the literature is divided as to whether a performing musician needs to develop declarative knowledge to enhance performance adroitness. It could be suggested that the musician needs some form of 'understanding' which may be implicit. Perhaps it is the nature of training in aural skills that is the key to developing non-assessment-led understanding. Teachers' and pupils' apparent lack of understanding of the relation between aural skills and performance, and ultimately the relation of both within an examination, needs to be explored.

## **AIMS OF RESEARCH**

- i. To identify empirically the elements of a good performance from the perspective of those involved directly in teaching and learning.
- ii. To identify and define the aural skills that are perceived to actively influence, inform and enhance performance proficiency.
- iii. To investigate the relationship between aural training and aural assessment, as perceived by teachers, educators and professionals, and in particular to evaluate the need for assessment during performance.
- iv. To investigate the role of 'understanding' in the development of, and in producing, a 'good' performance.
- v. To assess the validity of the ABRSM's aural assessment in the light of i - iv above.
- vi. To investigate new methods of developing and assessing aural ability which are demonstrably valid in the light of the findings of this thesis.

## PART II

...an object which was so small beneath the clear sky of our certainty can be suddenly magnified many times over on the appearance of a tiny cloud of danger. (Proust, vol. 3, p.1104)

...the data has no meaning separate from the software that organises it. (Reaney, 1995, p.49)

Perhaps we can access the 'poetic' truth long before we can affirm it...whose logic is not accessible by means of language. (Reaney, 1995, p.63)

The only knowing that has depth is that which occurs without between-nesses, when there is no gap between speaker of and spoken to. (Reaney, 1995, p.43)

...reality is inexhaustible and whatever we say a thing is, it is something more and also something different. (Bohm and Peat, 1987, p.210)



## Chapter VIII Study One: An Investigation of Teachers' Perceptions of Performance and Aural Skills

Combining accurate test and measurement data with the enlightened, thoughtful, and professional judgements of experienced music teachers and administrators should facilitate better decision in the evaluation of music ability than judgement without a strong data-base. (Boyle, 1992, p.247)

As outlined in chapter VII, in order to investigate the possibilities for training and assessing the aural skills pertinent to performance, it is first necessary to gain insight into (i) what those involved in the teaching and assessment of musical ability consider to be the essence of a good performance and how to teach it, (ii) how they view the role of aural skills in producing such performance and what these skills are, and (iii) the teacher's approach to training aural skills.

This study, through the use of semi-structured, in depth interviews with 23 teachers, all of whom were also either educationalists, performers, examiners, adjudicators or psychologists, aimed to formulate a thorough understanding of how these issues are seen by those involved in the teaching and learning of musical ability.

### METHODOLOGY

#### Design

#### Rationale for method

The extended use of qualitative interviews as a research method in the social sciences is a new phenomenon of the past decades, and related to the change in the concept of knowledge...Historically, the conversation as a systematic tool for the creation of knowledge can be traced back at least to...Socrates. (Kvale, 1996, p.45 & 46)

A qualitative approach was taken to extract meaning from subjects rather than a quantity of information. Quality refers to what kind, to the essential characteristics of something. Quantity refers to how much, how large, the amount of something' (Kvale, 1996, p.67). Within the qualitative perspective, as opposed to a survey or grounded theory, semi-structured interviewing was chosen to access a mode of understanding, 'alternative conceptions of social knowledge, of meaning, reality and truth in social science research' (Kvale, 1996, p.11). I was concerned with knowledge that the subjects constructed through interaction with them, the 'logical conceptual knowledge, emotional personal knowledge, and empirical knowledge' of the world experienced as a practical musician (Kvale, 1996, p21). This qualitative approach was particularly amenable to gathering theme oriented information, that is, how performing, aural and the ABRSM traditional tests are perceived in the field and meaning that is attributed to them. I was concerned with attitudes, opinions. and belief systems, the 'intersubjective interaction' (Kvale, 1996, p.66). The interview method allows for an openness of emotions and dynamic interactions, not the closed system of the positivists, where quantified data is offered based on abstract theories' (Kvale, 1996, p.85). The interview is employed as a guide to obtain the reflective approach to knowledge and the interrelatedness of context. The qualitative coding of interview transcriptions identified the interaction between components, concepts and phenomenon which reflected the mode of knowledge and understanding from subject's own perspectives and the importance attached to them. In this sense, one could advocate a phenomenological approach to analysis. However, phenomenology was rejected due to its lack of 'considerations about the origin or course of an experience' (Kvale, 1996, p.53). The interview study was used to ascertain the source of such opinions. Post modernist theory is assumed in that construction 'the qualitative research interest is a construction site of knowledge' (Kvale, 1996, p.42). However, the interview strategy is 'not merely the result of internal development in social science methodology, but reflects a broader historical and cultural question and construction of social reality' (Kvale, 1996, p.45). Thematically, the interview is concerned with 'a common focus on experience and intentions of individual subjects' which contrasts with the post modern approach to the decentering of the individual' (Kvale, 1996, p.45). The transcriptions, however, were also quantified during the stage of analysis. Through a content analysis, quantification was used to locate the frequency of

themes, attitudes and descriptions discussed. It is stressed that this quantification was employed purely as a measure for the frequency of which concepts were described, which were otherwise wholly qualitative. The view was upheld that the 'access to knowledge interview is sensitive to qualitative differences and nuances of meaning which may not be quantifiable and commensurate across concepts and modality' (Kvale, 1996, p.44).

To gain insight into the meaning of teachers' perceptions, rather than quantification, in-depth interviewing was chosen for this study. Direct contact with the client group would also be made, which was vital to ensure confidentiality and anonymity and which, in turn, facilitated a rapport. This assurance encouraged the client group to discuss and elaborate on issues with which they would perhaps otherwise have felt uncomfortable. Because of the in-depth nature of the response needed, a questionnaire would have been inappropriate. This qualitative approach was necessary to ensure that the meaning of many of the terms and concepts used by participants was addressed, and that the processes interviewees went through to determine their response could also be noted. The sample was selected so that most instrumental/vocal domains were represented, encompassing both private and peripatetic teachers whilst making sure that different teaching methodologies were represented. During this study it became apparent that the interviews generated such a wealth of data that the information gained from 23 interviewees was substantial for the purposes of this study.

An interview with a Senior Representative of the ABRSM was also included. This was necessary to provide insight into the theories and principles behind the development and implementation of the performance examinations in general, and specifically the aural tests, since this information is not publicly available.

### Interview schedule

The initial interview schedule for the teachers was designed by isolating the issues raised in the literature review and by informal discussions with key informants (who were professional performers, performance examiners, educators and instrumental teachers) with regard to their

opinions about the ABRSM's performance examinations; in particular, their views concerning the previous and present aural test component of these examinations. Teachers and pupils who use different performance examination boards were also questioned, as were those teachers who did not enter their pupils for performance examinations. Having collected these informant's views, questions were then formulated which addressed the issues raised. Whilst designing this interview schedule, the decision was taken to first address issues of performance proficiency and training in general; these included questions about the criteria interviewees would use to evaluate an effective solo performance and the techniques they would use to train relevant skills and abilities, as well as if and how the developmental level of the performer would alter their assessment criteria and the training for these. After interviewees had responded to these issues, the specific context of examinations was addressed, focusing upon the aural tests of the ABRSM's performance examinations. Questions were raised concerning the nature and importance of aural skills in relation to performance ability, identifying particular problems and benefits of the ABRSM's testing methods.

A pilot study was then undertaken. This was carried out with 5 interviewees. These consisted of performance graduates who were active teachers and performers. It emerged that the majority of interviewees found it difficult to provide detailed information about performance proficiency and the role of aural skills within this; they needed more time to think and prepare their answers. It also became apparent that they could not divorce aural skills, as defined in examinations, from aural skills needed to produce a 'good' performance. Revisions were made to the interview schedule which would encourage interviewees to discuss aural skills away from the context of performance examinations. To enable interviewees to think about the issues raised, the interview schedule was sent to the interviewees a week prior to the interview itself. (See copy of final interview schedule in Appendix II).

The interview schedule for the ABRSM's Senior Representative was designed using the issues arising from the literature review and the teacher interviews. The aim was to clarify the objectives of the ABRSM's performance examinations and to compare this view with that of

teachers. In doing so, it was important to gather information about the ABRSM's perspective on aural skills in relation to performance ability and how the aural tests reflect this. In particular, issues of stimulus timbre (that is, using the piano for test administration), required singing responses and the need for verbalisation were addressed. (See copy of the interview schedule in Appendix III).

### Sampling strategy

The sample was chosen by (i) identifying music teachers within the boundary of West Yorkshire from the 'Register of Professional Private Music Teachers' (ISM, 1995/1996), (ii) contacting the head of music of Kirklees Music School, from which a number of peripatetic teachers agreed to participate, (iii) approaching teachers from both the music and psychology faculties of universities and colleges within the North of England. This sampling strategy was chosen so that teachers of different instrumentalists at different levels would be represented, both private and peripatetic would be represented, and different teaching methodologies would be represented. The sample would thus be representative of the target population, which is teachers of different instrumental groups. The 23 interviewees were chosen from this pool by specifically selecting teachers, who taught different instruments, from the 'Register of Professional Private Music Teachers' (ISM, 1995/1996). Eight were purposely selected from the area of West Yorkshire, by selecting a mixture of string, brass, woodwind, voice and piano teachers who lived in the areas of Sheffield, Leeds, Huddersfield, and Halifax. Another 8 were chosen by the principal of Kirklees Music School, who was first approached by telephone. Eight copies of the interview schedule were then sent to him, along with a letter detailing the contents of the telephone discussion previously held; this detailed the framework of my research and the reasons for requiring interviews with teachers under the remit of Kirklees. In particular, he was asked to identify 8 teachers who, as far as possible, taught different instruments, and then approach them about agreeing to an interview. The remaining 7 interviewees were chosen from the music, education and psychology departments of 4 universities and 1 college. All were either known of by the interviewer or were recommended by mutual colleagues. All of these 7 interviewees were

teachers and professional/amateur performers who were also either music psychologists or educationalists.

### Participants

The 23 teachers provided biographical information which consisted of their specific musical training, their occupation(s), instrument(s) played and over how many years, and the instrument(s)/ voice(s) they taught and at what levels. They covered a range of ages, from 25 to 73 and consisted of 10 males and 13 females. The majority of interviewees had a wide range of experience and training, frequently playing and teaching more than one instrument. For example, out of 9 who played the piano, 7 taught it; out of 2 interviewees who sang, 1 taught it; out of 11 string players, 7 interviewees taught stringed instruments; out of 4 brass players, 6 different instruments were taught; and out of 8 woodwind players, 5 interviewees taught woodwind. The sample covered many instrumental domains, those of brass, strings, woodwind, voice, percussion and piano, with all graded levels being taught.

### **Procedure**

Contact with interviewees was first made by telephone. They were informed that the interviews were part of research into performance ability and examinations, with particular emphasis on aural ability and its testing. They were specifically told that the information gained would be strictly confidential and that they would remain anonymous. Once teachers had agreed to participate in an interview, the interview schedule was sent out a week prior to the actual interview along with a covering letter (Appendix IV), briefly explaining the nature of the research. This ensured that interviewees were given the opportunity to survey and digest the issues to be covered during interview, prior to the interview itself. An average of seven days was allowed for this. Immediately before the interview, interviewees were asked whether they had browsed through the schedule and taken time to consider the issues proposed. A significant majority reported that they had indeed contemplated the ideas concerning the interview. On average, the interview lasted about an hour and a half. The interviews were conducted at the

interviewee's home address. All interviews were recorded and transcribed verbatim. Overall, the study generated 37 hours of interview material.

For the ABRSM interview, the Senior Representative was first contacted by telephone by a mutual friend who is also a key figure working for the ABRSM and an ABRSM examiner. The research aim was outlined in brief and it was stressed that an interview with a Senior Representative of the ABRSM could be of mutual benefit in that the Board stood to gain further insight into teachers' opinions of its performance examinations and its aural tests in particular. A meeting was arranged in London, where the interview was conducted on neutral ground. With the permission of the Senior Representative, the interview was recorded and subsequently transcribed verbatim. This interview lasted for about 2 hours.

### **Ethical Considerations**

All interviewees were assured of complete confidentiality and anonymity, by the use of allocating numbers to the tape recordings and transcription documents, before the interview proceeded. The tapes of the interviews will be destroyed after the completion of this thesis, including the recording of the interview with the Senior Representative of the ABRSM. The questions concerning teaching methodologies and aural skills were potentially sensitive areas of discussion and so it was important for the interviewer to be aware of possible confrontational and defensive reactions. To prevent this from occurring the interviews were conducted in a friendly and conversational manner, but without compromising the aims of the interview.

### **ANALYSIS I: INTERVIEWS WITH TEACHERS**

...beware of allowing criticism to be so clinical and objective that it ignores the unique contribution of the human spirit. (Pratt, 1990, p.68)

A thematic analysis<sup>1</sup> of the interview transcripts was performed. This involved reading and re-reading the transcripts, highlighting passages of direct relevance to the question. Index cards were used to cross-reference interviewees' opinions, systematically recording common and differing views. This produced four major issues dealt with by the interviewees. These were: the skills and abilities, along with their associated training, which make for an effective performance; the role of aural skills in the development of performance ability; the teaching of aural skills; and the assessment of aural skills. Each of these themes will now be presented in turn.

### **1. The Skills and Abilities which Make Up an Effective Performance**

This section primarily contains the results of interviewees' responses to the first question of the interview schedule. This question probed the criteria used by interviewees when evaluating an effective music performance.

Interviewees, either consciously or implicitly, referred to three main categories, those of musicality, communication and technique. Whilst analysing the data it became increasingly apparent that these three categories produced an abundance of overlapping concepts. However, the presentation of these results does not seem to obscure the clarity of definition and the reader is asked to bear in mind that these categories are not finite, conclusive nor definitive.

The 'musicality' category contains skills which enhance and add to technical and communicative skills; for example, demonstrating a sense of 'feel'. The 'communication' category refers to the skills necessary to convey the music to the audience, and these indeed denote an awareness of the audience and a sense of performance. The 'technical' category subsumes skills which are predominantly attained through technical development; for example, articulation. However, concepts inevitably overflow between categories. Nevertheless, some distinction must be drawn for the sake of analysis.

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<sup>1</sup>. See appendix IVa for example of the Audit Trail



## Musicality

"...being musical comes from within...it's the ability to feel the music...to communicate expression. It's so much more than technique." (Interviewee no.2)

All interviewees reported that a performance must contain 'something more than technicality...it must be musical'. The majority of interviewees identified musicality as the awareness of, and the ability to convey, what one thinks the composer intended. Inevitably this is a part of interpretation. Others also took this definition further, defining it in more self-expressive terms, as 'a flair or a personality', or simply as a 'depth of feeling'.

"...obviously there's got to be the basics...but with a performance it's got to be more than that. The music has got to speak, so the tempo is very important, intonation, articulation; all have to be part of it to such an extent that it's part of your performance, it's not separate. It's not 'oh we've got to put a bit of expression in when we know the notes', it's got to be part of it." (Interviewee no.23)

"...those who naturally have a good sense of rhythm and pitch play much more musical [sic] than those that find that difficult." (Interviewee no.21)

Over and above the need for technical accuracy, interviewees unanimously agreed that a persuasive performance requires an unmitigated sense of musicality. The areas this envelops are a 'feel' for the music, often denoted as musicality, dynamic variety and an overall sense of direction.

"Does the music create a suitable mood and have musical interest through dynamic markings to engage and hold the listeners' interest?" (Interviewee no.5)

The majority of interviewees included dynamic and articulation variety in their definition of expressive features. This denotes 'a great range of shadings, pressures of dynamic changes then legato, staccato and shadings of these' [sic]. All of these encompass the manner in which dynamics are used for expressive purposes, frequently termed by respondents 'dynamic subtlety'.

The majority of interviewees also stated that the performer's ability to play within the 'context' of the music is essential; context is subsumed under 'expressive features' because it essentially

concerns the necessity for the performer to convey a sense of 'good musical knowledge'. This comprises the knowledge of, and the skill to express, socio-historic means of performance (by which is meant the musical conventions of the period the music was written in). 'Stylistic awareness' is a term that the majority of interviewees used to describe a performer's interpretation. For example,

"I like Mozart to have shape, with Mozart inflections. Obviously this in advance of getting the right notes, the fingering, the basic rhythm and technical expression e.g. vibrato."  
(Interviewee no.4)

This not only denotes a knowledge of historical performance practice, but also an obvious sensitivity to it. Within this context, interviewees also expressed the need for observing historical sensitivity towards the use of dynamics:

"One needs to understand dynamics in context e.g. knowing that one doesn't use a Beethoven forte when playing Haydn." (Interviewee no.7)

In addition to expressive features, although only raised by a minority of interviewees, is the category of 'structural features'. Interviewees considered that performers need to convey an understanding of the overall structure, style and character of the piece:

"...because if they don't have that structure you would end up saying some of that was wonderful, but what happened there?" (Interviewee no.22)

"They need to understand the overall mood...but not technical [details]." (Interviewee no.7)

And further:

"You need to understand the style of the piece beforehand because the piece of music makes more sense, you can see the light at the end of the tunnel. If you don't understand it, it becomes all note learning and rather academic." (Interviewee no.14)

Within this conception of the whole, performers should also display their knowledge and understanding of the minute structures within music. For example, demonstrating one's

awareness of the micro structure of phrasing and dynamics within the macro structure of phrasing and dynamics in the overall piece. As one interviewee comments:

"Does the music have 'logical' musical development, a sensible phrasing, climax, release?"  
(Interviewee no.14)

Furthermore, interviewees stressed the need for a 'sense of continuity which depicts the performer's structural grasp'.

Additionally, interviewees explicitly explained that a good performer needs to show an inherent understanding of the music they are performing. This covers all the areas within the whole of performance criteria, which particularly include the overall structural features of the music, stylistic awareness and an understanding of harmony and of expression. Primarily, they perceived understanding as the ability to attach meaning to what one is doing in performance.

As one interviewee reports:

"One's got to play with understanding of what the music's about." (Interviewee no.17)

Another description of understanding concerns what music is for, not necessarily how it works.

One interviewee elucidates this definition rather nicely:

"Understanding doesn't come from knowing note names, though it may be useful as background stuff. I would want kids to develop an understanding of what music is for, which is expression. How it works is a means to that expression...What understanding is, is that it's a sad piece and is faltering in the middle and not played as marching, that it doesn't necessary need to be metronomic...Attaching meaning to what you're doing is absolutely what it's for. How the instrument works follows on as a necessity. It serves the greater need of being able to make a sound like that." (Interviewee no.7)

And

"Understanding is performance. If there isn't something to express you're best leaving [the instrument] in the case. To understand is what's possible to convey, not note names. We are in danger of assuming we have to know names in order to understand the concept. Children understand the concept of jealous, etc., long before they hear the words. The same can be applied to music." (Interviewee no.4)

This expresses the need for a knowledgeable understanding that is gained through experience, without the necessity to verbalise this understanding (which will be discussed in section 4 of this chapter). The most frequent responses were that if one performs without understanding, a musical performance will not ensue. For example,

"...identifying the cause of mistakes and rectifying them needs knowledge and understanding." (Interviewee no.11)

And

"One can perform without understanding...but something is lacking." (Interviewee no.1)

This 'lack' was frequently described as the missing evidence of musicality and expression.

The majority of interviewees also cited rhythmic accuracy as the 'basic requirement' in a performance. Rhythm was defined as a technical ability, but equally defined as something more than this, as a vehicle for expression and communication. Rhythm is seen as providing an essential structure for the music to 'make sense'. One interviewee reported:

"If the notes were correct but the rhythm wasn't, the music wouldn't make sense. Whereas if the notes weren't completely accurate, the music can still make sense in four bar phrases...rhythm is the foundation. One could express emotion without the right rhythm but will it really make sense in the way in which the composer wanted it to make sense? Pulse is incorporated into rhythm, though rhythm and timing are two different things. Rhythm sparks off a feeling of rhythm, when you hear music and you want to tap your feet, some people don't seem to feel that as much as others...one needs to communicate the 'feel' for the rhythm in performance...If they can communicate rhythm and pulse, they will produce a good response to whoever's listening." [sic] (Interviewee no.1)

Here rhythm is inextricably bound up with a sense of 'feel' for the music, a recurrent theme throughout interviewees' discussions about rhythm and also of pulse. It is the inner ability to 'feel' the rhythm that aids the performer to portray musicality. This category inevitably flows into other categories, particularly that of technique. However, rhythm takes its place here due to the interviewees' overriding sense of rhythm being used as an expressive feature. For example, rhythm can be used to manipulate melodic shaping or key relationships.

The essential ability to 'feel' the music was expressed by most interviewees who regarded a 'sense of pulse' as a fundamental requirement for an effective performance. The majority of interviewees freely interchanged the terms 'metre', 'pulse', and 'a feel for the tempo' without any distinction between the three. Unanimously, the ability to possess an 'inner sense of pulse' and communicate this through the music to the audience was the underlying principal concept.

However, many interviewees found it difficult to describe what they meant by 'pulse' or 'a feel for the tempo', using illustrations to show how they would teach this phenomenon (discussed in section 3, of this chapter). Only one interviewee defined pulse as a means of organising notes into groups of stress.

### Communication

All interviewees included the ability to communicate the music to the audience as an essential feature of a good performance. For example, one interviewee commented that an effective performance is

"...the way you put it across...the performer needs to communicate with the audience...to communicate the emotion or the message of the music." (Interviewee no.14)

Some interviewees used the word 'commitment' to refer to the need for a sense of authority and ownership which is portrayed through the performance. In order to project this, one has to 'metaphorically stamp one's identification upon the performance' (interviewee no.7). As another interviewee defined it:

"Commitment to the music on the part of the player is an apparent sense of ownership of the music, as if they'd composed it themselves." (Interviewee no.1)

This 'expressive power' is what makes a performance 'convincing...so that it sounds as though it's being expressed and not run over' (interviewee no.18).

Interpretation was paramount to most interviewees when they expounded on the performer's ability to communicate ideas, '...by which I mean personal interpretation...it's the interpretation of the music and how the music can speak to the audience' (interviewee no.4). Hand-in-hand with this, interviewees stressed the need for a 'sense of performance':

"You've got to look good...in a lot of ways it's how you put it across." (Interviewee no.15)

Interviewees frequently referred to aspects of the performer's *visual* presentation as a means of conveying a 'sense of performance'. This incorporates the way in which performers use body language (gestures which 'encourage the engagement of the listener's ear', their physical presentation including their dress code), and their posture.

All of the above, interviewees argued, would aid the establishment of a rapport with one's audience. Some interviewees saw this as attained through holding eye contact with one's audience, particularly for vocal performers. The performer's 'character and personality' should permeate the music, 'drawing the listener in (let's hope their personality is agreeable)'. This intuitive idiosyncratic response of the listener was particularly important to some interviewees; their evaluation of a performance is based upon how they personally are affected by it. This is the most subjective level of assessing performance. The interviewees' affective responses were perceived as indicators of a performer's sense of communication, expression and musicality. The ability for a performance to 'move' the listener was paramount for most interviewees:

"I want to come out feeling that I have taken something from that performance, at an expressive level...to feel that I've got inside the head of that singer at least once...feeling that I've sucked something from them", "...if it touches me", "It would have to please me", "It is such an aesthetic thing", "...it's the emotional...aesthetic appeal." [sic] (Interviewees no.17, no.4, no.21, no.16, no.4 respectively).

Almost above all other considerations, the majority of interviewees regard the ability to 'feel the music' as an essential characteristic of a good performance. It is defined as the quintessential meaning of 'musicality'. For example, one interviewee explained that a performer has

"...got to have a very good imagination and inner conception which they are able to communicate and connect through the music". (Interviewee no.2)

However, it is not only regarded as an *inner* response to the music, but also the 'feeling' has to be *communicated* to the audience. Due to the unanimous agreement that communication is the accessible aspect of the inner expression of the performer, 'feel' is also included under this main category of communication. As interviewees remarked:

"They have to understand music, phrasing and the feel of a piece...what it's about. A lot get too emotionally involved and then they're lost...they've always got to be outside it and have a sense of perspective. The minute one feels moved oneself, they lose it." (Interviewee no.9)

Also

"Some feel that they are playing expressively, but are not doing it enough to project to the listener. One needs to encourage them to be outwardly dramatic, which is hard, as some are more inward than outward. The inward experience doesn't come across as strongly, it is detached. Maturity can be a reason for this, but sometimes they're just not that sort of person or it cannot be brought out through interpretation. It's the interpretation of the music and how the music can speak to the audience." (Interviewee no.12)

This ability to maintain a sense of emotional perspective was touched upon by most of the interviewees. Indeed, one interviewee illuminated the concept of this type of communication most eloquently. She stated that:

"Feel for the music is an expression [which] comes from your own response to the two aspects of aural and visual ability. As far as a singer's concerned, that means being able to communicate with an audience far more than maybe a lot of instrumentalists do, basically because it's done from memory." (Interviewee no.23)

The mention of 'aural ability' is introduced here to emphasise that interviewees discussed aural skills as an integral component of performance proficiency, particularly when considering communication and musicality. Although aural skills will be focused on in section 2 of this chapter, a brief outline of the aural competence referred to in the above quotation is needed. The interviewee is expounding upon the ability to inwardly hear the music before being able to externalise and communicate it. Visual ability is used to describe all that is subsumed within the

concept 'sense of performance', also linking it with the ability to communicate what is on the written score (the composer's intentions). Indeed, a large majority recorded the ability to internalise the music aurally, and effectively monitor and respond to aural feedback, as a feat of memorisation which enables effective communication skills. Because of this phenomenon, the majority of interviewees regard memory as a crucial factor in performance. Many thought that this process facilitates listening, resulting in a much more musical performance, with an increased sense of feeling and understanding. For example,

"Before you play, it's always got to be in the mind...in the ear" (Interviewee no.18)

### Technique

"[In performance] one is always looking for established sound technical abilities."  
(Interviewee no. 4)

In general, interviewees talked about issues of technique with little exactitude. They defined technique as including all aspects of getting the right notes, the right rhythm, the right tempo, the right articulation, dynamics, intonation, bow distribution, and techniques specific to the instrument. All interviewees expressed the opinion that a 'sound technique' was essential for a good performance. Although the majority of interviewees stressed that 'technical details' are secondary to musicality and the ability to communicate, they were nonetheless viewed as the vehicle for developing these. For example, one interviewee explained how sound production is a means to an end, that of conveying expression:

"The control of pressure on the piano... that's all underneath what they're trying to convey, to get nuances, shaping; pulling back time [rubato]." (Interviewee no.14)

Indeed, interviewees did not identify technique as an 'entity unto itself', it encompasses a whole range of skills such as breath/bow control, finger dexterity and facility, tone control and secure intonation. As the majority agreed, 'they are all bound up together...I wouldn't look for any



specific one'. With this in mind, the main aspects of technique that interviewees discussed include pitch accuracy, sound production, rhythmic accuracy and tempo.

All interviewees reported pitch (frequently referred to as intonation) or note accuracy (for fixed-pitch instruments) as being fundamental to a competent performance. One interviewee sums up beautifully the importance attached to intonation in performance:

"Can you have a good performance if it's out of tune? It's such an aesthetic thing, a simple piece can be beautifully performed...when it's a difficult piece, you're looking for good intonation and exceptional technique. I'm just as happy to hear 'Twinkle Twinkle' well as I am the Tchaikovsky violin concerto because you can find out a child or adult's intrinsic musicality very early." (Interviewee no.7)

However, when evaluating a performance, interviewees agreed that the emphasis placed on pitch accuracy, and indeed on technique in general, is dependent on whether the performer is an amateur or professional. For a professional performer, interviewees expected 100% note accuracy; for an amateur, note accuracy need only be satisfactory. Additionally, 'playing in tune' and the importance of 'pitch correctness' was emphasised differently for individual instrumentalists. For example,

"The most important technical consideration for a pianist is the control of pressure of the piano key". (Interviewee no.14)

And

"For strings and woodwind, intonation is of the utmost importance." (Interviewee no.17)

One frequent reference to detecting secure intonation concerned the performance being 'aurally correct...you've got to sound good'. This interviewee described aural correctness as 'the ability to listen and respond to oneself'. The performer needs to show an aural awareness of their performance, revealed through their production of the music with heightened self-monitoring. This concept of self-monitoring also concerns the performer's visual presentation, that of gesture and all the criteria listed under communication.

"...at the end of the day the sound is the most important as it is the main vehicle of expression." (Interviewee no.2)

Approximately half of the interviewees proposed sound production, also known as 'tone quality' or 'tone control', as an essential factor for performance. A minority even classified tone quality as the most important element in a performance. This concept encapsulates specific physical technical skills which enable the performer to produce a sound of good quality, such as '...good bow distribution', 'control of embouchure', '...the monitoring of finger pressure' and 'good posture'.

Sound production is notably different from interviewees' definitions of expression and pitch accuracy because sound production is about mastering and utilising the hand, bow or breath (the articulation device), and only then can the performer manipulate this device for expression.

The majority of interviewees also reported that they looked for technical facility in a performance. Interviewees defined this as showing '...stamina...fluent bowing[and]...a fluency of fingering'. Indeed, this concept was often summed up as a performer showing 'technical ease'...'so that I am not detracted from the performance by awareness of technique'. As one interviewee remarked:

"...if you haven't got ease of fingering then the conception will fall apart." (Interviewee no.3)

And

"Technique includes intonation, tone control, bowing, facility...they're all bound up together...I wouldn't look for any special ones." (Interviewee no.3)

Additionally, a minority of interviewees also reported articulation as being an important aspect of performance criteria, the majority not recalling it as important to performance ability at all.

Interviewees usually defined articulation as the attack, duration and decay of notes in relation to the overall structure of the music. It is viewed as an integral part of overall performance proficiency, which provides a sense of direction.

## Summary

This section has addressed the skills and abilities that interviewees perceive make-up an effective performance. They identified three main categories to define these skills and abilities, namely musical, communicative, and technical. Many of the skills within categories overlap with each other, for example rhythmic accuracy was defined as a technical skill but also as a vehicle for expression. Underlying many of the categories, interviewees frequently talked about musicality, inherent understanding, and 'feel' as the ultimate ability that gives rise to an effective performance.

## **2. The Role of Aural Skills in the Development of Performance Ability**

"Aural training can go a long way...it has a positive effect on performance. The aural training comes in in listening, discriminating, interpretation, self criticism." (Interviewee no.6)

During these interviews, a problem with the term 'aural ability' immediately became apparent; interviewees too readily equated it with the concept of aural tests. In order to overcome this, aural ability was redefined by the interviewer as 'ear development'. The interview process was therefore instrumental in respondents formulating their ideas on the role of aural ability in performance. This was because interviewees immediately thought of the skills assessed in traditional aural tests as the *only* aural skills, and the only way to teach and assess them. Due to this presumption, the majority of interviewees initially perceived aural skills as bearing no relationship to performance ability; or if they did, aural skills were only applicable to specific instrumentalists. For example:

"...it [aural ability] doesn't matter, although if you do have ear training it helps you on the way...but it doesn't show up in actual performance." (Interviewee no.2)

"Related to piano playing...skills are primarily notation, co-ordination, fingering and finger dexterity...you've got to get technique whether they can hear or not. For the violin, aural is vital." (Interviewee no.19)

"...[the] ability to be good at aural is of no relevance to the ability to play or learn an instrument." (Interviewee no.17)

"Knowing how much aural I did, both informally and formally, all you can do is improve the aural participation for an exam. I do not think you improve aural. I never had any aural training, yet my aural [ability] is extremely good, it's just there." (Interviewee no.4)

"...in my experience, ability to be good at aural is of no relevance to the ability to play or learn an instrument." (Interviewee no.9)

It is not surprising then that when asked to define what they meant by aural ability, some interviewees were able to do this, while others described a performance skill that provided evidence of aural skills. And further, it was remarked by the majority of the interviewees that teachers and pupils are not aware of the connection between aural ability and performance skills.

As one interviewee reported:

"Most people do not link aural to performance...they just see them as 'those aural tests'. Since Kodaly, I do it every day...I didn't understand why the aural tests were there myself when I was young." (Interviewee no.1)

Once interviewees were encouraged to separate aural skills from aural testing, they began to talk about the wider implications that aural ability, not the tests themselves, have for performance acuity. In many cases, one could see a sudden realisation as interviewees made the connection between performance ability and aural skills for themselves. Below are just a few comments by interviewees:

"Music is about sound, so aural is crucial." (Interviewee no.5)

"[Aural is]...absolutely essential. Every music lesson is a lesson in aural development with a little bit of instrumental thrown in." (Interviewee no.8)

"Aural...is the most relevant thing...the most important agent of...an instrumental lesson." (Interviewee no.10)

To ascertain what interviewees meant by aural ability and its relation to performance, it was necessary for interviewees to define this. Many interviewees reported that they found it very difficult to articulate:

"...many of them are internal and hard to measure I would imagine." (Interviewee no.15)

However, after some thought, most of the interviewees were able to do so.

The components that make-up aural ability, as interpreted by the interviewees, relate to communication and musicality, two fundamental aspects of performance proficiency that were outlined above.

"The ones that have a good ear can perform much more musically...because they're more aware of what's going on." (Interviewee no.6)

Many interviewees referred to evidence for the possession of aural skills without specifying, in their definitions, what the actual skills are. Only when interviewees articulated their teaching methodologies for aural skills were they able to define these skills. For the purposes of clarity in presentation, the interviewees' responses are divided into two sections: the first containing actual aural skills; the second consisting of skills that denote the underlying presence of aural ability.

### Aural skills

#### *Inner hearing*

"[Aural] is everything to do with sound...it is essential to inwardly hear what you want it to sound like...you won't be able to produce it unless you can..." (Interviewee no.4)

As shown in section 1 (performance criteria), the ability to aurally image whilst utilising one's feedback mechanisms, is perhaps the most frequently mentioned aural skill needed for an effective performance. Interviewees identified inner hearing as the most important aural skill. They described this skill as the ability to read notation, internalise the pitch, rhythm and all the aspects involved in this act, enabling an accurate rendering of the music. It is the ability to hear the music 'in one's head' which facilitates an efficient reproduction of the music. For example:

"...you have to have it in your head before you play." (Interviewee no.15)

"The ability to hear concerns the inward hearing of timing, notes, what they want to convey."  
[Sic] (Interviewee no.20)

"Hearing intervals are [sic] useful as part of increasing your relative and perfect pitch."  
(Interviewee no.2)

"...before you play something you've got to be able to hear it in your head. If you can't...there's no chance of executing it...You've got to use your imagination 'how do you want that to sound?'...If they use their imagination they can begin to hear what it could sound like...[one needs to] internalise pitch..." (Interviewee no.10)

When questioned about the purpose of this ability, interviewees responded that it helps performers to listen to and understand the results that they produce; that is, it facilitates one's ability to communicate the music through an understanding of stylistic awareness, whilst it also nourishes one's musicality in the form of a sense of pulse and 'feel'. For example:

"...it's so much easier to perform a piece when you know how it sounds in your head."  
(Interviewee no.18)

During the interviews it became apparent that interviewees placed great emphasis upon the necessity to integrate the training of aural skills with performance. The underlying reason given for this is that performers need to understand how the two are connected, and with this knowledge their performance should be enhanced. The quotation that follows is representative of the majority view:

"If a child understands the link between performance and aural it must enhance their performance ability." (Interviewee no.22)

### *Active-reflective listening*

In conjunction with the ability to image aurally, active and discriminatory listening, to oneself and others, was put forward by the majority of interviewees as an essential aural ability for performers, in that it develops and facilitates the skill of effective aural imaging and utilising feedback. Below are some of the assertions that interviewees made concerning listening skills:

"Aural skills are...listening to a tape of yourself and relating back to what you want it to sound like." (Interviewee no.13)

"...anyone who plays a non-fixed pitch instrument has to listen constantly." (Interviewee no.4)

"Learning to listen is essential...to hear the intervals being played." (Interviewee no.5)

"I had a girl who never improved...but while ill...she listened to a tape...without practising...she is now much better [as a performer]." (Interviewee no.16)

"You've got to listen very keenly all the time." (Interviewee no.2)

These comments show that listening is required for many aspects of performance ability: for responding to and modifying, if necessary, the externalisation of a performer's inward hearing; to enable adjustment of sound quality and technique; and to listen to others perform to improve one's own performance. Specifically, they also discussed the importance of active listening as a skill in relation to intonational problems. The majority of interviewees specified the ability to play in tune as evidence for aural ability. For example:

"Tuning is what performance is all about...listening is the best way of improving one's performance and monitor mistakes." (Interviewee no.8)

And further, interviewees reported that performers:

"must have a highly developed sense of pitch which can only come from aural training...pitch is not straight, it's variable". (Interviewee no.9)

This quotation is referring to the ability to perceive and heighten expressively the pertinent notes within a key. For example, in certain melodic or harmonic passages, the 'leading note' could be slightly sharpened to emphasise the rise to the tonic, supporting the key-note in harmony and tonality.

Interviewees also frequently related the ability to listen to one's own performance, and respond accordingly, to the concept of 'sounding good'. For example:

"Aural skills...[are not]...just pitch recognition, the ability to recognise a rhythm...it's everything to do with sound production." (interviewee no.1)

And

"Performance requires the ability to listen to the sounds being made and link the next sounds in a musical, logical manner." (interviewee no.18)

Within this category, interviewees incorporate the ability to produce a 'good tone'; which is primarily achieved through listening discriminantly to oneself:

"You need to listen to the quality of sound." (Interviewee no.12)

"...make, even just one note, sound wonderful." (Interviewee no.22)

"...always work on sound." (Interviewee no.17)

These comments suggest that the ability to listen and respond to one's performance, whilst using both aural imaging and appropriate monitoring of feedback loops, is necessary to establish sound production (a technical skill) and the development of a good tone. And further, the ability to co-ordinate one's hands or mouth or vocal cords with each other or with others', was viewed as combining the skill of discriminatory listening and physical precision.

This is not an exhaustive account of listening abilities; other aspects that come into play will be discussed under other specific categories. However, it should be noted that both aural imaging and active listening are skills that interviewees regard as essential to a musical and communicative performance.

Having discussed the importance of active listening, utilising aural imagery and monitoring feedback, let us now turn to the two areas that interviewees discussed as demonstrating the application of the aural skills: memory and improvisation.



## Skills demonstrating aural ability

### *Use of the memory store*

Interviewees complained that the majority of their pupils play from the written page which can, and often does, perpetuate a vicious cycle of needing this prop to perform. The majority of interviewees assert that playing from memory, or by ear, facilitates a more 'musical' performance. This musicality was defined as a performer's ability to monitor critically one's internal and external productions, frequently made manifest in an expressive performance. However, only a minority of interviewees reported expression as evidence of aural skills, the majority perceiving it as an inherent feature of musicality. It is included here because the majority of interviewees perceived the ability to memorise, which in turn frees one to concentrate on expressive qualities, as the application of the ability to hear inwardly and monitor one's performance. One interviewee summed this up as follows:

"Playing from memory is much more intense because they are listening. It's plainly said by psychologists that if you're concentrating on two things, your attention is divided."  
(Interviewee no.22)

And

"...memory is important for internalising pitches." (interviewee no.8)

"...listening is all about memory...you have to hold the music in your head to be able to image and monitor this." (Interviewee no.16)

This quotation suggests how important memory is for the performing musician, in that it releases one for listening to, monitoring and producing internalised images.

### *Improvisation*

"If I'd started [improvising] earlier I would be a better performer." (Interviewee no.2)

Improvisation is introduced here as a skill that relies upon developed aural skills, as opposed to improvisation as a skill in itself. Roughly half of the interviewees regarded improvisatory skills

as an important influence on performance ability, some referring to it as 'playing by ear', in itself carrying connotations of an aural ability. Interviewees reported that the skill of improvisation uses aural imaging and effective monitoring to enhance key sense, listening ability, memory facility and the ability to continue in sight-reading when others may stop. Interviewees suggested that:

"...those who haven't done improvisation, even at Grade 8 [ABRSM and Trinity], don't do so well because they're worried about wrong notes." (Interviewee no.2)

"...you've got to study both [improvisation and technique]...Improvisation is the most natural way of playing. I teach my pupils to play by ear, memory, and the music...they feed into each other, they're not separate" (Interviewee no.17)

"...it [improvisation] encourages people to listen to the sound they make." (Interviewee no.13)

"...it develops the performers' ear without the 'technical constraints' of having to read and cope with notation." (Interviewee no.1)

### The role of understanding

This chapter has already identified that understanding is important to a performer's communicative and expressive abilities; ultimately leading to the appropriate application of aural skills in performance. This section on understanding is placed here due to the interviewees' overwhelming perception that, in order for aural skills to enhance performance proficiency, the performer needs to understand how these two abilities are interrelated. Indeed, they believed that understanding is the key to forging the link between performance and aural skills.

Interviewees, however, were divided in their definition of understanding. The majority viewed understanding as functional; that is, an implicit knowledge of how aural skills relate to performance which, in turn, facilitates the transferability of these aural skills. It is the meaning the performer attaches to what they are doing, that is important. For example, one interviewee reported that

"They have to show that they understand the music...that's what it's all about." (Interviewee no.18)

The transferability of these skills is, arguably, facilitated by understanding; however, verbal expression is deemed unnecessary.

The majority of interviewees also talked about the relevance of understanding in relation to the ABRSM's aural tests. In particular, they referred to the declarative, verbal expression of knowledge that is required in part of the aural tests. However, the different aspects and meaning of understanding that interviewees discussed is perhaps an inherent problem with the interview format. For example, if interviewees were unsure of what was meant by understanding, the interviewer provided examples such as 'does verbal understanding of the music, for example naming a minor 3rd, influence performance? Or does the ability to talk coherently about aspects of music aid performance ability?'. The most common response to such a question was:

"Understanding has no relevance to performance ability...the ability to 'feel' the music is much more important." (Interviewee no.4)

And

"Understanding theory does not necessarily help performance...it detracts from the feeling of the music." (Interviewee no.22)

Clearly, this question clouded the concept of understanding, perhaps because it was ill-defined by the researcher before these interviews were undertaken. This question should be more discriminating and concise if used at a later date. However, in spite of this rather misleading question, the need for a verbal and perhaps abstract understanding of music was an issue discussed by interviewees. Although the majority did not endorse verbal understanding, a minority argued that as a performer develops the ability to coherently verbalise about music, their performance ability improves; this tends to suggest that verbal expression and understanding go hand-in-hand. Perhaps this view of understanding is related to teaching methodology; teachers who find it easy to communicate with their pupils verbally, as well as through demonstration, may be a reason for this. A comparison of teaching methodologies is

needed here, so that this issue can be addressed further. However, the majority of interviewees reported that a verbal understanding is completely unnecessary; a performer may know 'in their heads' what's going on but 'it's getting to know adequate language to express it'. Perhaps a verbal expression of understanding is viewed by the ABRSM as being the only assessable manifestation of a performer's understanding.

### Summary

This section has discussed the responses of interviewees to the question concerning the role of aural skills in performance proficiency. Initially, the majority of interviewees were unable to divorce the concept of aural skills from aural tests. However, the interviewer was instrumental in enabling the majority of interviewees to do this.

Interviewees considered both aural imaging, that is, inner hearing, and monitoring feedback, defined under the term of active-reflective listening, as fundamental to a musical and communicative performance. Additionally, interviewees regarded the efficiency of memory, improvisation and co-ordination as evidence of possessing these aural skills. It is important to stress that interviewees proposed that all of these skills are effectively applied only when their role is understood as they function in performance.

### **3. The Training of Performance-Related Aural Skills**

"It's [performance proficiency] such a multiskilled thing...incorporating the reading skill with the practical skill and the aural skill". (Interviewee no.18)

Many interviewees expressed concern regarding the training of aural skills; the majority found these 'very difficult' to teach, yet useful. As one interviewee replied:

"...a lot of them seem to have been 'caught' rather than 'taught'." (Interviewee no.12)

However, as can be seen in sections 1 and 2 of this chapter, the majority of interviewees taught performance proficiency through aural perception, although many did not realise this until questioned about it; only then interviewees announced that 'just about everything I do is from an aural aspect', and 'there's so many skills, you can't name them all'. It seems that interviewees could 'name' performance skills that required aural perception (c.f. section 1 and 2) but when asked to 'name' aural skills, this caused problems. Indeed, some interviewees regarded 'any aural training [as] very good'. Clearly there is a link missing here; perhaps it is the very name 'aural' that causes such a confusion of definition (this will be discussed in chapters XI and XII).

Many of the training methods to develop aural ability are directly linked to, and overlap with, the strategies interviewees use to develop performance skills. This section will therefore combine the methods for training performance skills and aural ability. It will be organised according to the aural skills that have been identified by interviewees, namely inner hearing and active-reflective listening. The developmental tools that interviewees use to train these skills will be discussed within these categories. It will be seen that singing, sight-reading and the instrument itself are the primary methods used to train inner hearing. For active-reflective listening, teachers most frequently encourage listening to and emulating both live and recorded media, self-criticism and peer group discussion concerning ways to express oneself. This section will be concluded with interviewees' perceptions about the role of understanding in performance. Essentially, interviewees employ three main strategies to develop an understanding of the relationship between aural skills and performance, and ultimately, 'feel'. It will be seen that the main facilities used to develop this awareness are improvisation and playing by ear, memorisation, and the use of the kinaesthetic response. This section, therefore, provides an analysis of the responses given by interviewees in relation to the question concerning how they train students to develop effective performance/aural skills. It is of note that throughout these interviews, teachers have consistently referenced their training of aural skills back to the context of performance.

Having ascertained that the majority of interviewees view aural skills as an integral component of performance ability, conversely, a minority of interviewees felt that they did not have enough time during an instrumental lesson to develop aural awareness:

"I don't do as much formal aural as I should...I only do it because I'm told I should."  
(Interviewee no.2)

Or simply that teaching aural skills separately is a waste of time:

"Why bother [to teach aural development], one just does it...this is cello teaching, not aural testing. One uses aural all the time as one goes along." (Interviewee no.19)

However, this comment does reveal a belief that aural skills are relevant to performance ability, although they need not necessarily be taught separately or explicitly. It seems apparent that these interviewees could not divorce the concept of aural skills in general from the specific skills assessed in traditional aural tests. It will be seen that these training techniques are frequently used to train and monitor the presence of aural skills.

Throughout this study, interviewees stressed that the techniques used to train specific skills were based on two basic tenets, a) that the method used is an aid to understanding just as much as it is a way of securing a particular skill, and b) that the developmental tool used to train such skills is also a way of monitoring the acquisition of that skill. For example, interviewees frequently used singing as a tool to develop and monitor a variety of aural and performance skills. Let us briefly explore the reasons for this.

It was seen in sections 1 and 2 of this chapter, that the majority of interviewees employed singing to train musicality, which they classified as requiring secure intonation, inner hearing, feel and expression. Indeed, the majority of interviewees who attempted to elucidate the 'indefinable' phenomenon of musicality, reported that singing is the best way to train this. The most common reasons interviewees gave for using the voice to train these four aspects of musicality was because

singing is accessible to everyone, and is a direct, precise and effective method of communication between the teacher and pupil. The following quotations are representative of this view:

"[Singing is]...an effective means of communicating intonational accuracy between the pupil and the teacher; it is available to everyone and increases the pupil-teacher rapport."  
(Interviewee no.4)

"The voice can be effectively employed to communicate one's aural internalisation between the pupil and teacher...it is the best means of communication." (Interviewee no.2)

"I sing, they sing back...Some cannot sing a note, I sing and they cannot pitch it. It takes a long time, but they do pitch a lot easier from the voice [than from their instrument] because it's a similar timbre...With most string instruments the strings vibrate much faster than the voice...they'll pick up clarity of sound from the voice." (Interviewee no.16)

Having prefaced some of the reasons why interviewees use techniques to develop certain skills, let us now explore the actual skills that are taught. The first of these is inner hearing.

### Inner hearing

#### *Singing*

Sections 1 and 2 identified aural imaging as an important performance-related aural skill. To develop the abilities that constitute inner hearing, and those abilities that are a result of effective imaging, such as secure intonation, the majority of interviewees employ singing. As one interviewee asserts:

"...the use of the voice to develop one's instrumental ability is primarily to aid the acquisition of secure intonation." (Interviewee no.2)

Interviewees believed that to ensure the development of inner hearing, a performer needs to sing from a written score, whilst referencing the image in their heads with the aural and visual feedback. As some recounted:

"If they [the performers] can't hear it [the music], get them to sing...singing is the best way [to develop the ability to internalise pitch]." (Interviewee no.13)

"...a performer needs to listen to themselves to hear any intonation problems...if they can't hear it then singing is the best way to train them to listen and adjust." (Interviewee no.7)

Other singing activities that interviewees use to develop inner hearing include singing an underneath part of a melody, singing a 2 or 3 part canon, singing chromatic scales, singing folk tunes, sight-singing and part-singing with others. For example,

"We need to encourage part-singing in schools...I keep nagging them to play in tune and time, but singing, singing, singing." (Interviewee no.4)

However, a minority of interviewees reported that singing is unnecessary for the development of performance-related aural skills. The following quotations are representative of these views:

"Singing in tune is a skill of co-ordination between the brain and voice. A 'tone deaf' person can learn to hear with great discernment even if they cannot reproduce the note accurately by singing." (Interviewee no.1)

And

"The minority can play in tune without being able to sing. I'd much rather have them playing their instrument; nerves could prevent them from singing." (Interviewee no.3)

Indeed, the majority of interviewees did not train inner hearing solely through singing, they also used the instrument itself. For example, they frequently relied upon the slow practice of notes, with a minority explicitly teaching awareness of key. This was primarily achieved through initiating pupils' practice of scales and arpeggios (both up and down), not always beginning on the tonic. Interviewees also trained inner hearing by playing musical phrases, either correctly or wrongly, and then asking their pupils to indicate whether the phrase was played as written and to give reasons for their answer. As one interviewee explained:

"Use a cassette to record them and keep replaying it: 'do you think that sounds right? What's wrong, too low or high?' Test intervals and octaves against open strings, particularly when in high positions, and test against harmonics. In a big shift, getting them to do it slowly and slide along until they *hear* the note. Make the pupil terribly aware of the importance of playing in tune; they must listen listen listen." (Interviewee no.17)



A minority of interviewees also identified specific aspects of aural imaging which require development, namely, the essence of sound quality. Although good sound quality may be viewed as a technical skill, some interviewees also argued that a performer needs to image timbre or sound quality to enable an expressive performance. To train this skill, interviewees agreed that the performer needs to explore the range of sounds on their instrument and try to produce the same sounds in different parts of their instrument or voice. For example, a string player could use different parts of the bow to create the same sounds or play the same pitches in different parts of the instrument. The ability to image, reference and manipulate these different tone qualities inevitably involves judgmental decisions about interpretation.

### *Sight-reading*

As a corollary of singing, the majority of interviewees also used an alternative strategy to develop aural imaging, namely sight-reading. Interviewees believed that the ability to sight-read through a piece of music, identifying its sound world and the most difficult pitching, was a reliable method of training aural internalisation. Teachers reported that this develops the ability to recognise a written interval and immediately be able to internalise its pitch. Once this skill is established, the aural knowledge acquired can then be transferred onto one's instrument. As one interviewee expanded:

"I can see how, to see a 3rd physically, helps ...with sight-reading. All the time, in the early stages, [the pupils] see that sight-reading is useful to [the solfeggio] and the Kodaly method [of teaching]. [Sight-reading] does make [aural imaging] more relevant." (Interviewee no.5)

"...they need to be able to sight-read...and range around the keys [play in all keys]...which will develop imaging and key awareness." (Interviewee no.9)

"We rely on the ear more than we think we do, but I don't teach it formally. It comes into every lesson...it's sight-reading. Starting a new piece is all sight-reading...and that's what aural perception is all about." (Interviewee no.10)

A minority of interviewees, however, strongly believed that it is not necessary to pitch from a score without hearing it first. As one interviewee proposes:

"Let's talk about reading for the moment. First of all if the kids may be helped by hearing it I will play it to them, there are awful hang-ups in some teachers that you don't do that, children have to sight-read. I believe that if your object is to teach kids to sight-read, that might be a good practice, but it's not, so why not let them hear it first. (Interviewee no.3)

It is important to acknowledge the significance interviewees placed upon sight-reading; it was argued that it enables a performer to develop an understanding of the relevance of aural skills in context. Performers are encouraged to reference everything that they perform back to their understanding of harmony and tonality. The quotations that follow expand upon this:

"I get them [his pupils] to develop the sense of the arpeggio, to get them to relate things, to be able to hear, sense the tonic. Many graduates are lost when asked to play 'Happy Birthday' because they start on the tonic, it's elementary that they may have the skill but they're not employing it. Aspects of learning: you need to know what questions to ask; 'what part of the scale is my first note?' if you don't ask yourself this you will come a cropper." (Interviewee no.19)

And

"I get them [her pupils] to play a scale and chord progression in the key of the piece they are doing at the time, also sight-reading in the same key; you can plan the whole curriculum around that so you can relate everything to what they're playing. Also you then get more done in the lesson rather than, 'oh we haven't got time for sight-reading today, bye'. It may mean that they study one repertoire piece at a time, but that's OK. because they'll not take as long to learn it...as well as their piece, they learn how it relates and develops their understanding better." (Interviewee no.5)

Here again, this aural skill is taught in the context of what the pupil is studying, increasing learning through understanding. However, although sight-reading was seen as a skill that helps further develop aural ability, it was not necessarily perceived as a skill directly related to a performing musician.

We have seen that interviewees disagreed as to how pupils should achieve the ability to hear inwardly. Whilst it was suggested that the ability to sing may not be a direct expression of the ability to inwardly hear, nor does it easily translate back to the respective instrument, the most common reason that interviewees gave for using singing was because:

"The voice can be effectively employed to communicate one's aural internalisation between the pupil and teacher...it is the best means of communication." (Interviewee no.2)

### Active-reflective listening

"Everything must be taught aurally. Listening is everything." (Interviewee no.14)

As was indicated in sections 1 and 2, the majority of interviewees reported that listening skills are imperative to the performing musician, and are an integral component of aural-imaging. One interviewee remarked on how 'Muzak' has caused a problem for young performers because attentive listening is the antithesis of this; indeed, Muzak's very nature is subliminal, teaching us not to attend to music. Conversely, performers are taught consistently to listen analytically:

"...establishing whether the music is played 'short or long, high or low, what timbre is used and how, what they feel and notice about the music'." (Interviewee no.15)

"A lot is done through aural perception...you are listening and seeing what's happening and how it goes on." (Interviewee no.22)

"...this is where the aural training comes in...listening, discriminating, interpretation, and self-criticism." (Interviewee no.20)

It is necessary to highlight the importance the majority of interviewees placed on teaching pupils how to practice, rather than how to perform. Indeed, many reported practice as the most important part of performance ability. Interviewees unanimously agreed that practice develops active-reflective listening through critical appraisal of their performance. For example, one interviewee exclaimed:

"I never teach people a piece, I teach them how to practise...aurally, visually and kinaesthetically...[to] listen, feel and look good." (Interviewee no.17)

To develop the skill of active-reflective listening, the majority of interviewees also encourage observation and criticism of their own performance and of others. The emphasis is on discerned listening, as one interviewee elucidates:

"...if they've been listening [to themselves and others], they'll find their own attitude to playing." (Interviewee no.13)

To facilitate these aural skills, teachers propose that one should listen to both live and recorded media, identify variations of tone, expression and vibrato, and to realise on their own instrument how these musical aspects are achieved. They specifically call this 'developing aural skills'. As interviewees assert:

"I encourage them to take control. I tell them to listen and record what they've played...to get a recording and listen to it. I also get them to listen to other recordings and they sometimes say 'I mustn't do that' or 'why did I like that?' and get them to imitate it...This aural [aspect] has to come first." (Interviewee no.9)

And

"I get them to listen to themselves and to imitate others...it's got to start with the aural...the more the ear is used the better the performance." (Interviewee no.1)

Below is an account of an interviewee's own research; an interview he held with a 'very fine musician' reveals the need to comprehend what the performer is listening to for a comprehensive and effective interpretation. The interview continued as follows:

"...'how did you learn to play the music?' He said 'I listened to the records and just imitated'. I said 'what about the fingering?' He said 'I'm not much bothered about that'. I didn't understand. 'What were you listening for then?' 'Well, it was the gritty sound or the fuzzy sound, that's what I was trying to imitate'. 'And the notes?' 'The notes just seem to come'. That was a common thing out of the interviews, that the notes looked after themselves, what they were going for was expression. Contrast that with the majority of instrumental teaching." (Interviewee no.2)

The majority of interviewees also encourage performers to discuss with their peers various aspects of music, such as interpretation and ownership of music. This was viewed as an integral part of developing active-reflective listening, where an interchange of ideas and interpretations are used to complement and develop an understanding of discriminative listening. For example:

"I often teach in groups...I get one pupil to play a piece that they're all working on and ask the others to listen and discriminate the difference in the interpretation [in relation to their own interpretation]...I encourage self-criticism and peer-criticism." (Interviewee no.15)

And

"I get them to watch, listen to and play with others...a lot is done through aural perception...listening and seeing what's happening." (Interviewee no.4)

A minority of interviewees also reported that active-reflective listening can be effectively developed through playing in an ensemble. The small number of interviewees remarking upon this may well be due to the nature of (perhaps a flaw in) the interview question. Participants were specifically asked to define pertinent aspects which make up an effective solo performance. Some may have interpreted this as purely one instrument, whereas others have taken it to mean a solo performance with accompaniment. Nevertheless, one interviewee stressed the importance of ensemble playing because:

"You can overplay in an ensemble. In a string quartet you need to listen to where parts should be heard; when to start, finish, and follow the tempo up or down. It's far more important than anything else, even more than technique; although you can't have one without the other, but it depends on the music." (Interviewee no.14)

Although this datum is a reflection of the abilities required for a solo performance, it was acceptable for interviewees to incorporate ensemble playing as soloists often perform with an accompanist. This is the loose definition of solo performance used within this study. As one interviewee exclaimed, playing with an accompanist is a:

"...rather important aural skill...because you've got to hear what the other parts are doing." (Interviewee no.19)

And

"...[with] piano accompaniment...you...need to tune to pitch differences." (Interviewee no.9)

To train specific aspects of active listening, a minority of interviewees also used echo-clapping. For example, the teacher would clap or tap a rhythm and the pupil would clap or tap it back; the pupil's response would be in the form of an echo. It should be noted that echo-clapping does actually occur in the 'listening games' of the ABRSM's Preparatory Test, which is complemented by echo-singing (using the piano as the stimulus and candidate responding with their voice) in the early Grades.

### Developing understanding

We have seen that understanding is vital to the effective acquisition and application of aural skills. Indeed, interviewees stressed this understanding as an overarching requirement for a musical performance. Even if a performer possess developed aural skills, it was unanimously felt that

"...if understanding does not ensue then the performance will not be greatly enhanced."  
(Interviewee no.19)

This section, therefore, outlines the three main activities that are thought to bring about this understanding. These are organised under the headings of improvisation and playing by ear, memorisation, and the kinaesthetic response.

### *Improvisation and playing by ear*

In section 2 of this chapter, improvisation was discussed both as an art in itself and as method used to train various aspects of performance-related aural skills. This section emphasises improvisation and playing by ear as methods for developing an understanding of the role of aural skills in performance.

"I do quite a bit of improvisation...repeating phrases. I play a phrase, they repeat...even with beginners on piano, or any instrument 'cause they can play rhythms on one note. They can look at my hands and then gradually not look; 'now see if you can do this without looking at my hands'." (Interviewee no.20)

"I encourage my pupils to play along with records, that's how you learn to play by ear. They ought to be able to play a tune that we both know, that they've never played on their instrument." (Interviewee no.16)

"I ask them to make up a rhythm [a rhythmic ostinato], and improvise over the top, but it's always got to be rhythmical...they copy rhythms. I set up a rhythm and bass line on a keyboard, then I'll play a rhythm and they imitate it. Then vice versa...or they play a rhythm at sight and then make up a tune using those notes...They complete 4-bar phrases of question and answer...then they listen and play modulations...they see the key signature and work out where it is going, then they hear it in their heads. Aural training is in all music." (Interviewee no.12)

When questioned as to how improvisatory skills are developed, the majority of interviewees turned away from notation and taught this skill, primarily, through aural dialogue and reinforcement.

"I try to avoid embedding in the mind of the pupil the idea that music is something written on a page [but instead] that music is played by you...you 'utter' as a musician, you play your *own* music...they need to realise that music is something that you can actually make, in the same way you can make a painting." (Interviewee no.7)

And

"There's lots of ways of freeing them from notation...I get them to play music that they know in a key that they know. You can't do it in a key that you don't know or with music that you don't know, you need to have both." (Interviewee no.21)

It is vital to stress that interviewees regarded these techniques as developing an understanding of how aural skills relate to performance. Indeed, the majority of interviewees thought that the effective use of aural imaging and aural feedback provided evidence of this understanding.

Again, we see the importance of aural skills providing a crucial role.

"Improvisation is the most natural way of playing. I teach them to play by ear, memory, and music...they feed into each other, they're not separate...it encourages people to listen to the sound they make." (Interviewee no.12)

And

"I think it's [i.e. improvisation] relevant to studying an instrument, not sure how relevant to performance skills. For general musicianship it's very good; it develops sense of key. When they see a piece with 3 flats they don't use it as a code for white or black notes, rather they say it's in the key of e flat, oh yes, it uses these notes and chords, then they're almost able to predict what to expect. If you get them to improvise in a certain key, using a set of chord patterns...that develops fluency and confidence, general musicianship...Improvisation would

help if it sets them free from the printed score...With some people, if the music is there they will just look at it, and they would be so liberated musically if they could have the confidence to play without the music. It's a definite plus for that." (Interviewee no.3)

Many interviewees reiterate the point that improvisation encourages the development of 'ownership' and 'interpretation'. The majority use improvisation to develop a pupil's individual style through empowering them to 'feel' the music; this is often enhanced through the process of memorisation:

"They have to be able to feel the piece...[this is] developed away from the written notation...the best way to train 'feeling' is through memorisation...then the pupil is free to feel and develop expression which comes from your own response to the two aspects of aural and visual ability." (Interviewee no.19)

Ultimately, interviewees used these tools of improvisation and playing by ear to develop a sense of understanding and musical direction.

### *Memorisation*

We have seen in sections 1 and 2 of this chapter that for a performer to memorise the repertoire successfully and effectively, the ability to image, to monitor and respond to feedback is vital. Indeed, interviewees argued that the ability to play from memory is indicative of developed inner hearing and furthermore, that the use of inner hearing in this context would produce an expressive and musical performance. The underlying reason why interviewees encourage memorisation is to develop a performer's understanding of the functional use of imaging and active-reflective listening. Ultimately, this is thought to develop an implicit understanding of how the music works and consequently, it allows the performer to expressively interpret the music. For example:

"The act of memorising...by freeing up the visual demands of reading music...facilitates expressive direction." (Interviewee no.15)

"...free up the visual [that is the written score, which]...allows more attention to be devoted to the aural and expression." (Interviewee no.4)



However, many interviewees ascertained that memory is a facility which is too frequently overlooked by performers other than singers. The minority view is that performance examinations, particularly the ABRSM's performance examinations, are responsible for this oversight. As one interviewee proclaimed:

"I blame notation in examinations for the miseducation of instrumental teaching."  
(Interviewee no.9)

This quotation summarises the majority view that the ABRSM's examinations do not require a candidate to perform from memory; the written score inhibiting the necessary development of aural skills such as audiation and effective monitoring. Because of this, interviewees imply that performers who consistently play from notation often neglect aural training.

#### *The kinaesthetic response*

Sections 1 and 2 have highlighted interviewee's difficulties in describing the important ability to 'feel' a sense of pulse or tempo. Interviewees unanimously agreed that an inner sense of pulse is very difficult to teach; pupils either possess it or they do not. Indeed, interviewees reported that when explaining the concept of pulse, 'pupils often find it too academic to understand'. Perhaps this is where the expression 'musicality' generates from, that indefinable thing, in this case unexplainable.

In spite of this, a minority of interviewees were able to suggest ways of developing this ability. Although not explicitly identifying this as a strategy in aural training, roughly half of the interviewees use movement to enhance aural and performance skills. This is done through allowing the pupil, away from their instrument, to move freely to music, expressing rhythmic changes, pulse, tempo, register and timbre. They combine the aural, visual and musical approach to training an inner sense of 'feel' and understanding. Below is an interviewee's account of this:

"She [the pupil] would be happily skipping to the Brandenburg, but I proved the point that enough exposure can develop aural as she never had any problems with the aural up till Grade 5; she just waltzed through it. She is musical, but I felt that being exposed to these things is an enjoyable way; I've done this with others, and they're able to pick up the piano much quicker." (Interviewee no.18)

Without any formal ear training, this teacher's pupil developed aural facility with ease. The teacher explained that this was due to her ability to 'move' to the music, developing an inner sense of pulse and a 'feel' for rhythm through the kinaesthetic response generated by physical self-expression [in this case, 'dancing']. As another interviewee claimed:

"It's very hard to teach someone to 'feel' an inner sense of pulse. Sometimes I get people to walk up and down the room...I don't know how closely the ability to read music and aural ability are linked to the ability to feel the music...perhaps aural ability is the key."  
(Interviewee no.16)

This encouragement of movement away from the instrument provides

"...a greater freedom of expression...often the body is the best way for the younger ones to communicate, feel and understand the inner sense of pulse and its flexibility." (Interviewee no.17)

The majority of interviewees also used singing to develop and monitor a sense of inner 'feel', which, it was generally presumed, would ultimately lead to the development of musicality. Indeed, singing was viewed as direct expression of inner 'feel'; it was argued that singing, by its very nature, cannot (or should not) be mechanical. This, in turn, leads to a more musical approach to performance, because the voice is more readily able to impart expression. Indeed, interviewees argued that if one sings the music one is to perform, this increases a sense of pulse, resulting in a more melodic and musical performance:

"I think singing is terribly important to a performer...The greatest experience of music is singing because it's personal...it comes from you inside. You're not using a mechanical means to get it." (Interviewee no.16)

"Singing is vital because you're doing it from within first...Retrospectively, it's made me understand why there's so much mechanical playing...I have a lot of opposition to [training performers to sing]...but those who do do it play more musically. Because when [you are] singing, you don't do it mechanically because it's very hard to do it that way. (Interviewee no.19)

"all music is vocal music...if you think like that...you play like that." (Interviewee no.1)

These quotations seem to be inextricably bound up with the concept of 'feel'.

In relation to 'feel', yet somewhat differently, interviewees found it hard to explain how they taught expression and, in particular, expressive devices. However, the minority who did respond to this question encouraged performers to bring their personalities out through the music. As one interviewee asserts, being able to communicate expression is

"...hard for a singer, but much easier for an instrumentalist because an instrumentalist has their instrument to hide behind, it is manufactured, whereas a singer has to bring everything from within". (Interviewee no.19)

If a performer had not experienced certain emotions, teachers used the same technique to draw out expression as they did to communicate 'feel'. They provided examples of emotional situations and encouraged the performer to react. Interviewees argue that from this reaction, performers begin to 'feel' how to be outwardly dramatic. As interviewees remarked

"The teacher should verbalise to help make sense of the music, and also it will help the kids remember...but the pupil should 'feel' what the music should do and respond musically on their instrument" (Interviewee no.18)

"Expression comes from one's own response to hear inwardly what you want to put across ...to visually be able to perceive what is on the page." (Interviewee no.4)

"Expression is very hard for a singer...[because]...you've got to bare your soul every time you open your mouth...one minute you're passionate love, the next minute you're dead pan sound. There are different meanings and the way you do it is very hard to teach...often you've got to express something which you have no experience [of]." (Interviewee no.2)

And, expressive communication is hard for a singer

"...because you've got to bare yourself which means being an actor". (Interviewee no.5)

Behind these quotations is the necessity for emotional maturity. Indeed, it was frequently noted that lack of understanding and maturity contribute to inexpressiveness.

In a similar vein, a minority of interviewees used metaphor to explain, develop and encourage a 'feel' for the music. Through applying eurhythmics, the pupil would 'move' physically to illustrate

the metaphorical example. This was frequently employed to develop a performer's rhythmic understanding and sense of pulse. For example,

"...a fence can appear regular and neat...which denotes regularity in rhythm. It is the same with using a heart beat as an example. Young ones need to relate it to what they can understand...so in turn they can comprehend it in relation to their performance."  
(Interviewee no.13)

The majority of teachers also used the performer's instrument itself to develop a sense of 'feel'. Interviewees frequently encourage their pupils to watch others performing so that they can 'see how notes are played', and to then imitate the perceived action. This kinaesthetic response is also used to develop physical technique and posture. Below are some examples:

"[I get them to]...imitate another's technique so that they can begin to 'feel' what is right and...through practice...master this." (Interviewee no.21)

"[I get them to]...imitate another's physical position and the way in which they approach their instrument...eventually, they will 'feel' the music for themselves..." (Interviewee no.1)

And further

"I get them to play something that's in their technical limitations...and encourage them to play musically by imitation." (Interviewee no.4)

It was explicitly stated that the kinaesthetic feedback that the pupil receives from imitating another's action, will be stored as a memory trace, facilitating the subsequent 'feel' of musical expression. It is the combination and integration of visual, aural, kinaesthetic and haptic cues and responses that culminates in a sense of 'feel' and, ultimately, musicality.

A minority of interviewees, mostly pianists, also stressed the importance of training kinaesthetic, aural, and haptic cues to develop smooth co-ordination skills. The precision of technical movement was perceived as evidence for advanced aural skills. For example, one interviewee illustrated

"e.g. hands together on the piano, not 'k'chonk'. One also uses these skills with instruments in an orchestra." (Instrument no.19)

At the stage when intonation is not yet secure enough for it to be used for expressive purposes, the emphasis on inner hearing and kinaesthetics is still prevalent. For example, interviewee no.17 stated that

"...it's better to have a limited amount of keys to begin with...particularly for a string player, and play really well in tune in those keys before venturing further...It's partly aural, whether they can hear and respond to intonation errors...[and it is] partly kinaesthetic."

### Summary

Interviewees initially related aural skills to the skills assessed as part of traditional aural testing; because of this, the majority proclaimed that there is no relationship between a musical performance and aural abilities. It also hints at interviewees originally finding it difficult to define, or rather 'name', vital aural skills used in performance.

Once interviewees were able to articulate how they trained aural skills, it became clear that many used singing to develop secure intonation, a sense of pitch and a sense of pulse. Singing, they argued, is the most natural way to communicate and express one's ability to image aurally. Sight-reading was also a popular means of training aural imaging. It was argued that sight-reading develops one's understanding of how to use imaging; this, in turn, promotes the ability to transfer this skill into other performance situations. It must be noted here that aural imaging does not solely mean pitch, but also refers to timbre, register, rhythm, pulse, almost the whole gamut of performance skill. When questioned about the role of understanding in performance, interviewees were divided in their answers; some regarded understanding as an intellectual grasp of the structure of a piece, historical performance practice and style, whilst others defined understanding as the ability to 'feel the music implicitly', which in turn develops all areas of expression and communication.

Active-reflective listening was interlinked with the training of imaging, as one incorporates both skills to effectively image, monitor and respond to one's performance. This was further seen to enhance one's stylistic awareness, sense of feel and, ultimately, comprehension of the vital role of aural perception to performance proficiency. It is important to stress that some interviewees also taught improvisatory skill, memorisation and the use of movement to develop the use of imaging and active-reflective listening skills.

To conclude this section, the tenet of the majority of interviewees can be summed up with the following quotation:

"...the final thing is the performance...if the...aural skills are really good, the assumption is the performance is going to be better. Probably it is." (Interviewee no.6)

#### 4. The Assessment of Aural Skills

"Your generation's got to do something about it. My generation was so conditioned, we all are. You've got to make it [the assessment of aural skills] more appropriate." (Interviewee no.9)

During the interviews, interviewees were most stimulated by the question concerning the assessment of aural ability, both within and outside of performance. They were asked how they thought it best to assess aural skills and whether this should be done away from the context of performance itself.

Roughly half of the interviewees immediately began to evaluate the ABRSM's aural tests when this question arose. Sections 1 to 3 have already ascertained that only when prompted away from established criteria for assessment were interviewees able to identify their thoughts about aural skills. However, once the statement prefacing this question was reasserted:

*...Please do not relate your answers to what are perceived as the conventional methods of aural testing.*

interviewees were then able to say whether one should test aural skills and how. The majority, however, could not steer away from the ABRSM's aural tests, and so it is appropriate that the results of these questions are included at this juncture.

### Assessing aural skills in context

A significant majority acknowledged that it is possible to assess performers' aural skills independently, but deemed it inappropriate to do so; performance being the most pertinent context for assessment. For example:

"Young children need a more integrated approach." (Interviewee no.3)

"Older students may enjoy doing aural exercises in the same way people do MENSA puzzles, but they don't relate it to performance." (Interviewee no.11)

"It is possible to assess aural ability away from performance, but it's healthier to have it in performance." (Interviewee no.23)

"We examine it [aural ability] separately because it is examinable separately...it doesn't mean that it's the best way...assessing them in performance should be better...but I wouldn't know how you'd go about doing that." (Interviewee no.12)

This interviewee's insight lies at the heart of what this thesis is about; that is, finding the best way to assess aural ability within the realm of performance: Study Three is the culmination of this endeavour. However, a minority of interviewees thought it appropriate for aural skills to be assessed out of this context. Interviewees justified their opinions by remarking that:

"...it is necessary to teach and assess aural ability separately so that it will ensure that aural skills will be taught, not just scales and sight-reading." (Interviewee no.2)

"The examination of aural tests works as well as anything can in the assessment of aural ability." (Interviewee no.18)

This view accords with the Board's perspective, as expressed by the Senior Representative in his interview. However, the above interviewee's opinion may perhaps be held because of the inability to divorce aural assessment from specific, traditional 'aural tests'. This comment may

seem a little naive, however, because the minority who did believe it appropriate held very strong opinions on the matter:

"Yes, [aural ability can be assessed away from performance] and it should be. People's skills are differently balanced i.e. good readers are often poor improvisers...memorisers and vice versa." (Interviewee no.4)

"You can't gauge aural ability from performance, as aural tests often show." (Interviewee no.21)

"This has to be done in isolation. If it isn't, we would be assessing something [other than aural skills]." (Interviewee no.7)

This final quotation raises a number of issues, the most pertinent one concerning the validity of the aural tests; what do the results of the aural tests show us? This will be explored later in this section, and specifically, in chapter IX.

A few interviewees, however, regarded the use of aural testing as totally inappropriate for performing musicians. For example:

"If they're playing well they must have a good aural perception...I wouldn't think it's vital...or necessary...to do it in performance examinations. It's part of a much too intellectual approach...our examinations are still based upon what they used to be for organists in the 19th century. I don't think they've thought it through properly." (interviewee no.7)

"...when you're assessing aural [through the ABRSM's aural tests] what you try to do is get them to recognise what they've heard or remember what they've heard, but I'm not sure that's a particular aural ability." (Interviewee no.18)

And further:

"...the ABRSM aural tests [do not] test skills that feed directly into performance; it's more like all round musicianship. It just adds to the personality rather than to the performer." (Interviewee no.14)

Indeed, a minority of interviewees also regard the aural component of examinations as a test to pass, with teachers training performers to pass them, not being concerned with how they relate to performance ability.



"Comparing the current ABRSM tests with more 'traditional' or 'old fashioned' tests, the ABRSM have clearly tried to address concerns, but have ended up presenting more problems. For example, sight-singing is far too hard for average Grade 5 instrumentalists. As a Trinity Rep. I am aware that teachers are considering swapping board to avoid the Associated Board requirements in favour of the traditional version. My feeling is that training for these traditional tests trains you to pass the tests *not* play your instruments. The weighting of 10% for aural tests always seems unduly high and unfairly so for many. But teachers can cope with training for the Trinity tests and feel more comfortable with them." (Interviewee no.19) [for a summary of the differences between the ABRSM and other boards, refer back to chapter VI]

When questioned further, the majority of interviewees reported that the ABRSM's aural tests are 'simply a time saving-tool...for teachers'. As one interviewee relates:

"...I don't know why they bother to do it, except that most people couldn't do it. I don't understand why The Royal College was full of people who couldn't hear very well." (Interviewee no.7)

At this juncture, it is worth detailing some of the interviewees' backgrounds as far as their contact with aural testing is concerned. About one third of the interviewees had only encountered, or possessed knowledge of, the 'old-fashioned (traditional)' type tests, which the Board has now largely abandoned. As the interviewer was concerned about interviewees' experiences colouring their responses, interviewees were always provided with information about the 'new' ABRSM's aural tests and asked to comment upon them. However, the majority of interviewees were actively involved in teaching the new ABRSM syllabus, and so no further explanation was needed.

The following unit will explore interviewees' concerns regarding the aural tests specifically, in respect both of the method of assessment and of vital skills that are omitted from assessment.

#### Interviewees' perceived problems with the ABRSM's aural tests

"The Board's [ABRSM's] aural tests definitely need to be more related to performance. They're [the performers] standing up, haven't got the piano to shield them, it's a one-off and gone quickly. I wouldn't like to say how to get round it...particularly if you've got an abrupt examiner who won't give you the benefit of the doubt." (Interviewee no.14)

The majority of interviewees expressed concern about the way in which aural skills are assessed in the ABRSM's performance examinations. Indeed, we have seen that the majority of interviewees argued that the ABRSM's aural tests do not assess relevant aural skills which are used in performance. For example

"Even now, the higher grades recognise period of history but it has very little to do with performance. Unless you say we're going to perform baroque music in one way and romantic in another, 'now see if you can recognise a romantic piece', but that would be by the performance. Why should that be a part of a performing exam?" (Interviewee no.10)

To comment on this interviewee's statement, the aural tests assess recognition of the period or style of a piece largely through compositional features. But if the way it was performed was a factor, then this may be more relevant in a performance examination. The feasibility of this will be explored in Study Three (chapter 10).

### *Singing*

There were many complaints about various aspects of the test, the predominant one concerning the area of singing. Below is a lengthy account by an interviewee, to emphasise this anxiety:

"For a lot the aural is a nightmare, not because they don't know what to expect...it's the singing, the voice. Musicians always assume that if you're a good musician you can sing. By that they mean you can pitch accurately. Why should it be that they've got it in the voice? There's something wrong...it's not the pitching but remembering the tune...if I found this difficult, and I'm good at aural, no wonder the kids are knocked out". (Interviewee no.1)

And

"It's always been presented that musicians are good at aural, yet I know that's not the case because of the people I've come across. I've tackled the aural as deeply and helpfully as I could, but it's all been cheating as they learn intervals by memorising the beginnings of songs such as 'Away in a manger'." (Interviewee no.20)

The mnemonic formula mentioned by interviewee no.20 (above) is used by many young children who are beginning to learn the sound of specific intervals, e.g. 'away' sounds 2 notes that create the interval of a perfect 4th. This may be viewed as a helpful stage to a child, which is a small contribution towards the broad musical understanding that all musicians require. If this method

helps the performer to remember the sound of a perfect 4th, and apply this information to performance, then perhaps it should not be perceived as 'cheating'. However, if one is unable to eventually hear, recognise and image a fourth then this would be a cause for concern.

Further to this, many interviewees perceive the ability to sing back a response and play back a response as two very different cognitive processes; the question is, which process is more akin to performance ability. As one interviewee commented:

"To be able to imitate with your voice is not as complex a skill as imitating on your instrument because you have to know what notes are involved. When I hear a perfect 4th I can sing it, but if I were given the key note and then asked to play the other notes that I've heard, I'd have to work out the pitch name for each note, a process which wouldn't be involved in singing back. It would be more difficult, but it might be more useful because many candidates don't like the singing and may find it more worthwhile to find the notes on their instrument." (Interviewee no.18)

And

"It shouldn't be extraordinary, many can hear but can't reproduce on the violin or trombone...I would suggest, if measuring progress, examiners should be told to accept something that starts at the wrong pitch but is relatively accurate...a sequential response. They can whistle, and after Grade 6 they can play back on their instrument but I don't know of anyone who does this; it's because they don't know. Doing things on an instrument and the voice is different. I'm not saying it's not valuable to repeat with the voice but it is a different experience [from] finding the notes." (Interviewee no.20)

As can be seen from above, one of the most common concerns among interviewees is that of timbre.

*Timbre*

Many interviewees expressed the difficulty for performers of relating the timbre of the piano (the aural test music stimulus) to their own voice (the required singing response). For example, one interviewee relates:

"The voice did not relate to what we understand as musical pitch, at all. I tried on the piano to improve the voice, but they [the pupils] found it very hard." (Interviewee no.23)

Interviewees also found the piano completely inappropriate because of its timbral quality and loudness:

"The piano is the very worst instrument, for pianists as well, because of the harmonics; it's crazy, it's extremely difficult to get it right. The piano is terrible because it just jangles. The ideal is their own instrument or quality recordings. If the instrument available doesn't fit the case then don't do it." (Interviewee no.3)

A minority of interviewees also remarked that singing causes timbral problems, 'mainly due to lack of confidence...people just feel silly if they're not encouraged'. Interviewees acknowledged that the piano is utilised during examinations for practical reasons, yet the realisation that the piano is used for 'convenience' does little to allay feelings of outrage.

"The piano is used because it's usually there for some other purpose and all the examiners play it...there's no other reason for using it." (Interviewee no.11)

A minority of interviewees suggested that the examiner should sing the test and the candidate would reply on their own instrument, this being particularly relevant for non-pianists. However, as the Senior Representative remarked, this would be impractical; pitch-wise, it would clearly be more fallible than the piano. Pianist interviewees also acknowledged that timbre is a problem for other instrumentalists and vocalists:

"I can always distinguish the different timbres of black and white keys so it must affect perception. Non-pianists would be at a disadvantage because they're not used to listening to pitch differences of another instrument." (Interviewee no.5)

### *Verbalisation*

Interviewees were also asked to comment on how understanding enhances performance, particularly the ability to verbalise as part of the ABRSM's tests. Many suggested that as a performer develops the ability to verbalise coherently about musical aspects, so too does performance ability.

The ability to verbalise about music is very closely related to the skills required for the ABRSM's aural tests. However, interviewees expressed concern regarding this ability, particularly regarding younger performers:

"[Aural tests]...are aimed at having a certain knowledge of aspects of musicianship...the candidate might know exactly what a perfect cadence sounds like...but they may not be able to put it into words." (Interviewee no.2)

By implication, interviewees perceive the ABRSM's aural tests as a means for assessing correct vocabulary to express knowledge about isolated aspects of music; the equivalent of a verbal spelling test. However, the concept of understanding does pose a problem for young performers; the ability to conceptualise, categorise and verbalise seems a little beyond the ability of young performers. For example, one interviewee commented that '...understanding enhances performance...but is only relevant as the student advances. Younger ones find trying to understand inhibits performance'. Other interviewees agreed with this:

"...with young ones they just waltz along and do both and hope they link it up; with older ones they talk more and link it up. Not everyone wants to understand, they just want to do it. [They] Need to be interested in the relationship. Some won't become interested until they teach, they just want to play." (Interviewee no.6)

"...with the younger students, the test that deals with the differences, the language for them is very hard. They know where the difference comes, and I have to say to them how to answer because they don't know how to verbalise." (Interviewee no.17)

The concept of understanding the link between aural ability and performance proficiency is a recurrent theme throughout the interviews.

"If understanding isn't there, yet they can perform and do aural, there's still something missing." (Interviewee no.13)

"The ability to internalise pitches contributes to your understanding of the music...and so it [understanding] is important." (Interviewee no.5)

"When you start a pupil off with the ear tests they are never told what it means and so it has no relevance to them. One needs to understand what they're about." (Interviewee no.18)

It is apparent from these quotations that interviewees discussed understanding in the context of assessment. Only a few interviewees were able to steer themselves away from the concept of testing and discuss understanding in the context of performance. Below is a rather long quotation from an interviewee who asserts that understanding is imperative to performance ability; this was discussed with reference to the ABRSM's aural tests:

"The old tests were just a chore sometimes, the adverse was that if one couldn't do it, they'd shut off. That's it, can't do it, full stop. You couldn't always rationalise it. People often need a rationalisation, 'the reason we are doing this is because...' Fine, they understand and have a go. The new tests are much better as you can understand and see where you're going. There's a sense for whatever you play. It's still very hard for anyone who doesn't play a keyboard instrument to pick up chords. This applies to singers; if soprano, you don't often listen to the underneath. Suddenly having to listen to the bass line is very hard. I don't think it hurts them at all...in ensemble you have to listen, 'cause at times you have to tune to them. Times when they're doing something vital, e.g. a new tune or cadence, and you've got to be with them. It is important for them to have a grasp of this, although difficult. One cannot be an all-round musician if you only listen to yourself, unless you're a concert pianist who never does anything else. Everybody performs with somebody else, at some time; if you go off on your own you're never going to make a proper piece because you're not aware of what the other person's doing. Lieder is a perfect marriage...got to be aware of subtle nuances in the piano. This is vital. If you aren't, it's not a good performance." (Interviewee no.14)

There are a number of issues raised in this quotation; primarily, that one needs to understand the rationale behind tasks in order to fulfil them satisfactorily. The new tests are perceived as redressing this issue somewhat, but there is still scope for the re-education of teachers, performers and examiners concerning the role of aural skills in performance. Before continuing this line of thought, it seems pertinent to draw attention to two other issues the interviewee mentioned. These were: the timbre bias that still exists in these tests, as the piano is still used as the music stimulus, and the need to listen and adjust to other musicians while performing (i.e. during ensemble work). This latter skill will be elucidated further in Study Three, chapter X.

A third perspective, held by a minority of interviewees, did not believe that understanding enhances performance ability at all. The reason given was that 'understanding theory...detracts from the feeling of the music'. Indeed, one interviewee felt that explaining the music was '...a little too deep for teaching', her pupils being from beginner level to advanced level.

This section has identified teachers' concerns about the aural tests and their relationship to performance. As well as identifying inherent problems with the ABRSM's aural tests, interviewees also discussed aural skills that they thought were pertinent to performance which the Board omits to assess separately. Having ascertained the perceived limitations of the ABRSM's aural tests, interviewees volunteered alternative methods for assessing aural skills. The following section will detail the interviewees' views on how they think aural skills should be assessed.

### Alternative methods for assessing aural skills

"Aural tests don't always seem to relate to performance goals and it would be better if they did. Playing one's instrument could be the way." (Interviewee no.6)

#### *Instrument administration and response*

The majority of interviewees agree that not all instruments use all aural skills to the same extent. For example, the pianist uses pitch variation less than a violinist. Interviewees related timbre problems to specific instruments, often proposing ways in which administering and responding on one's own instrument would benefit the performer. There is reason to believe that this would enhance the relevance of aural ability to performance, enabling the performer to respond better and appropriately. For example:

"The ideal would be to do aural tests on one's own instrument. We're not trying to catch kids out, we're trying to help them develop. So, you give them the starting note, and gradually wean them off. Playing back on the trombone something you're heard on the piano is not so extraordinary, but what it cuts out is the visual representation of somebody playing it which is a great help and why shouldn't it be a help? Violinists sit behind each other to see which way the bows are going." (Interviewee no.17)

Similarly:

"Flute for flute, sax for sax, piano for piano. I alternate with the piano; it does affect the response." (Interviewee no.13)

And

"Administering and responding on your own instrument gives a greater understanding of the instrument and is more relevant to aural training. Often, if they can't match a note by singing from the piano, the voice works. If this fails, I then play a rhythm and they repeat it on the same instrument." (Interviewee no.10)

"String players have a different perception of tonality than pianists. Singing can cause timbral problems because some people can hear the music in their head but can't adequately pitch and sing it. Using your own instrument is a good option and may rectify technical problems in earlier grades." (Interviewee no.1)

"I think responding and administering on one's own instrument would be a very good idea because without realising it, if a pupil is a violinist they think in terms of the violin. I find that when I learn to sing, it's the piano timbre I hear in my head, not the voice. Whatever is your instrument, unconsciously you think in terms of that...having to project what you feel inside, onto another instrument, is foreign...Instrumentalists are well known for not having done well in aural. It is hard for them not to think in terms of their instrument because of the sound and vibration and harmonics." (Interviewee no.22)

Furthermore, interviewees also noted that secure intonation, which was identified as a domain-specific skill, was not directly assessed by the ABRSM; this could be remedied by administering and responding on the performer's instrument. However, it was felt by the majority of the interviewees that 'administering on instrument and responding on instrument is a different skill from using the voice, and more relevant, but harder for most'.

#### *Sung administration and response.*

Roughly half of the interviewees suggested that performers would be able to respond more effectively if the aural tests were sung to them and they would respond with the voice; this is particularly appropriate for the younger performer:

"Young children find it easier to sing a note back that is sung, not played." (Interviewee no.16)

#### *Contextualisation*

The majority of interviewees also remarked that a performer's aural ability could be more relevantly assessed using their own performance material, through relating tests to the music just performed.



"They could give the aural tests from the pieces they've played, you know, they could play an interval and say 'which of your pieces did that come from?'. There are lots of possibilities."  
(Interviewee no.6)

This comment, however, seems somewhat unrealistic. It would have to be a very distinctive interval (e.g. a tritone or a minor 9th) for this to be reasonably conclusive as a test. Other suggestions that interviewees proposed were:

"...one can assess the performer's interpretation of the music through examining technique...This not only relates to the piece but also assesses the performer's music history and harmony...which improves their understanding of the link between theory, aural and performing." (Interviewee no.18)

And

"...the examiner plays the pupil's piece and asks 'what am I doing different to the way you played it?'...Younger people would understand what they were doing it for a lot more. It would make sense...because it requires knowledge of the piece if this strategy of aural assessment is implemented." (Interviewee no.19)

This interviewee is clearly emphasising the need for the ABRSM to relate the tests more to a candidate's performance. The ABRSM does incorporate tests which assess a candidate's perception of a change in rhythm, for example, but this is isolated from the context of the performer's prepared pieces.

#### *Other alternatives*

Other interviewee's suggested that:

"To assess co-ordination, the performer should be asked to play a rhythm, through imitation, on their own instrument." (Interviewee no.12)

And

"If the examiner sang and the pupil played intervals on their instrument, or the examiner plays an interval then the pupil plays the same interval, this could be a solution. But there is a timbre difference, it's a big problem using the piano." (Interviewee no.8)

A minority of interviewees proposed that performers should transpose a section of their piece during the examination. For example,

"The candidate plays four bars in the dominant and subdominant from the pieces already performed. Alternatively, the examiner plays a melody from the music performed, plays it again starting on a different note, and the candidate identifies whether the note has risen or fallen and at what interval. The pupil then plays the new interval." (Interviewee no.10)

These final suggestions may be applied to beginners, with the identification of intervals, progressing to advanced performers transposing the music they have played. The transposition proposals were suggested by brass and wind teachers. It is of note that transposition tests already figure in organ and some brass examinations. They are also incorporated into the ABRSM's Practical Musicianship Examinations (see pp.189-191 of this chapter) which perhaps suggests that the Board do recognise domain-specific needs for differing instruments; whether they regard these as specific aural skills is uncertain. The relevance and possibility of domain-specific skills has been discussed throughout this thesis and is a component explored through the method of assessment in Study Three (chapter 10).

### Summary

The question concerning the assessment of aural skills was, for many, a problem. The reason for this was because interviewees equated aural skills with existing aural tests. When steered away from these, in the hope of eliciting their own views about aural skills, interviewees still relied on conventional aural skills that are assessed through tests. Even though interviewees had already defined the aural skills needed to make-up an effective performance, it was disconcerting to remind the interviewees persistently of the skills under discussion.

The results suggest that aural skills are tested for separately in an examination because, if they were not, it would take 'a very astute examiner to sift through the various [aural] skills' present in a performance. However, there seems to be substantial disagreement about this; interviewees questioned why aural skills could not be gleaned through performance. It was commonly agreed that an effective performance is like cooking a meal with chopping, blending and mixing; if the

meal is a success, then perhaps the necessary (aural) skills to achieve this result are present and effective.

The training techniques teachers employ to develop aural ability are often directly translatable to the ABRSM's examination tests. It became apparent that teachers often train performers to pass aural tests in examinations, with little, if any, focus on the integration of these skills with performance. However, a few 'innovative' teachers disregarded these tests and employed skills such as eurythmics and improvisation to develop aural skills in relation to the pupil's particular instrument. Generally, these teachers did not enter their pupils for ABRSM style performance examinations.

One of the questions arising out of these interviews concerns whether there is a role for aural tests in making sure musicians are 'well rounded'. Perhaps there is inevitably going to be a problem that any test will measure more than what it sets out to measure. For example, singing back a simple tune assesses pitch recognition but also memory and voice control. Perhaps memory is intentionally tested, which would explain the increase in length and demand as the grades progress.

This section has highlighted the view that interviewees do not necessarily relate the skills assessed in the ABRSM's aural tests to performance proficiency; they are both components of general musicianship. Perhaps these comments relate to the confusion between aural tests and aural skills; the concept of aural testing distorting interviewees' perceptions of aural ability in relation to performance skills. It was suggested that some aural skills maybe more paramount to specific instrumental groups than others.

## ANALYSIS II: INTERVIEW WITH A SENIOR REPRESENTATIVE OF THE ABRSM

### Aims and Objectives of the ABRSM's Performance Examination

The aims and objectives of the ABRSM's performance examinations are concerned with 'enjoyment':

"...the broadest label is enjoyment through achievement. Music is to be enjoyed, which means self fulfilment and communication. To really enjoy it one needs to broaden understanding through experiencing techniques...The exams are merely a tool on the way to the broad business of music education [i.e., not just performance]...they are a means to an end."

This response is indicative of how the ABRSM approaches its performance examinations; they are genuinely believed to support and develop performance ability, through the rigour of an examination, whilst emphasising that 'music is to be enjoyed', not endured. This quotation suggests that the examinations are there to make certain that a variety of 'techniques', which include aural and also the developing knowledge-base implied by some of the aural tests, are established. It is important to note that the Board relies on these examinations to set the standards for college recruitment and depends on teachers to communicate and nurture these ideas. For example, when the interviewee was asked to outline the best way to train aural skills, he replied:

"The skilful teacher will integrate the development of the ear with the instrument, making music with your instrument *through your ears*...They [i.e. the skilful teachers] don't teach to the examination syllabus, they will teach [how to play one's instrument]. The pupil will be able to do the aural tests without any extra lessons, that's the ideal scenario."

As the results of the interviews have revealed, teachers often do only teach to the examination syllabus, and pupils are, predominantly, trained for the aural tests separately; at worst, at the end of a lesson just before the examination is due.

Ultimately, the Board acknowledges that the examinations can only assess those aspects which are assessable, and in this sense, they are a 'tool' that points towards the wider aspects of an effective, musical performance. As the Senior Representative reports:

"...rounded musicianship is what's behind it all."

Before pursuing the details in this statement, let us first discuss the concept of 'rounded musicianship'. This is necessary because the ABRSM also provides examinations in practical musicianship which purport to assess and reflect different skills needed from the performance examinations. To this end, the interviewer asked what the difference was between the skills tested in the Performance Examinations and the Musicianship Examinations. The interviewee replied:

"There's quite a cross over, in some instances they're identical. The idea behind the musicianship examination is pragmatic and philosophical. The syllabus concentrates on broad skills through one's instrument.

The Senior Representative then expressed his own opinion:

Before, the general musicianship examination was not much to write home about. This new one was quite imaginative in its time, but it's a little frayed now...On the pragmatic side, there is a replacement to Grade 5 theory which you do through your instrument, [instead of] through pen and paper."

Unfortunately, this statement does not provide enough information to establish the finer distinctions between the aims and objectives of the two examinations. The interviewer is at fault here because no further explanation was asked for. For this reason, the Senior Representative's answer is supplemented by the following brief discourse on the Practical Musicianship tests. Grades 1- 3 incorporate similar tasks as the performance examination aural tests. These are to tap and sing as an echo, and to sing at sight. The piano is used as the music stimulus throughout.

The differences are more manifest than the similarities. These include: to play and sing from memory an extract played, on the piano, by the examiner; to sing *or* play at sight, progressively realising the 'dynamics, simple ornamentation (except when the test is sung), and more common marks of expression' (ABRSM, 1997, p.4); to improvise an answering phrase; and to identify, from the printed score, differences from the examiner's performance. These differences progress from

identifying changes in pitch, rhythm, rest values and note duration, to dynamics, tempo, melody, articulation and phrasing. The candidate is required to indicate the changes and explain the differences. However, these changes are sporadic throughout the extract played, not a continuous change. From Grade 5 onwards, the option of transposition is introduced (instead of sight-singing). From Grade 7 onwards, the candidate is given the option of either continuing a phrase in the style of 'late 17th or early 18th century', using the voice or one's instrument, or to realise a short figured bass. The ABRSM requires improvisation using the voice, instrument or keyboard, progressively requiring free improvisation on a given motif, interval or texture, and eventually (at Grade 7 and 8), one is required to freely improvise on a poem or painting, interpreting the mood and structure of the stimulus. Finally, at Grade 7 candidates are required to answer 'basic questions' from a printed score of chamber work which would have been written between 1700 and 1850. These questions could concern key, the harmonic framework, instrumentation, style and structure. At Grade 8, the score is not limited to the 1700 and 1800s, and candidates are additionally expected to answer questions about 'aspects of the use of the voice or instruments' (ABRSM, 1993/1994, p.86).

From this analysis of the Practical Musicianship examination, there seems to be substantial differences between these and the ABRSM's performance examinations. The skills that are assessed in the preceding paragraph, and the means by which they are assessed, seem to be more relevant to performing on an instrument and to the candidate's instrument domain; one is given the choice to answer on one's own instrument. The inclusion of improvisation, sight-reading, and identifying from a written score changes that are heard aurally, are all skills which require developed aural skills; in particular, the utilisation of aural imaging. The reason why these skills are not viewed as pertinent to a performing musician remains to be explained. The relevance of these will be discussed further in, and are directly applicable to, Study Three (chapter X).

As the findings of this thesis are potentially applicable to the Key Stages of the National Curriculum, GCSE, A and AS awarding bodies in general music education, it is important to

acknowledge the role of these comparables in relation to the ABRSM's development of the assessment of practical musicianship. Whilst music education expresses the need to develop the skills, knowledge and understanding which a musician needs to communicate through, and respond to, music, the vital tool of learning is through practical engagement in music-making, both solo and ensemble. At Key Stage One, pupils are encouraged to create and explore musical ideas, organising the products into a coherent structure. The control of tone production is taught so that one develops an awareness of pitch, along with the development of a sense of pulse. Across the entire spectrum of music education, the ability to internalise sound is crucial. All of these activities use song, one's instrument, and a variety of instrumentation to realise these aims, yet it is through the interaction with others that these skills are taught and assessed. From the outset, one is required to rehearse and play with others whilst contextualising their performance; it is the 'sense of occasion' that provides meaning through which to communicate the acquired knowledge-based skills. In conjunction with this, pupils are required to reflect, evaluate and respond to the performance of themselves and others. It is very much an activity-based learning strategy and method of assessment that the National Curriculum endorses; it is purposeful. Through GCSE, A and AS levels, one is assessed on the ability to communicate, comment and improve on one's own learning, and problem solving. At A and AS levels, assessment focuses on expression and interpretation through both solo and ensemble performance. Both aural perception skills and the application of knowledge and understanding are assessed through these objectives. Whilst not forgetting the important skill acquired and assessed through composition and appraising, performance ability is generally assessed through interpretation, stylistic awareness and contextual conventions, technical and expressive control, and sight-reading. Similar to the ABRSM, pupils are required to demonstrate understanding of, and comment perceptively (using specialist vocabulary) on, the structural, expressive and contextual features characteristics of music, including harmonic progressions and relationships. However, unlike the ABRSM, the fundamental focus of assessment, for the National Curriculum, GCSE, A and AS levels, is the vital ability to integrate one's skills, knowledge and understanding through the activities of performance, composition, and listening and

appraising. In particular, a viva voce is used to ascertain a pupil's ability to draw connections between other musical activities and to apply their knowledge, skills and understanding to familiar and unfamiliar music through particular characteristics. The music used both in training and assessment is not bound by cultural or traditional limitations.

For the purposes of this chapter, let us proceed with the aural skills assessed in the ABRSM's performance examinations. It is clear that the ABRSM aims to assess a performer's understanding, whilst establishing a secure technique and developed aural ability. The issue of understanding will be discussed further, but first let us explore what the Board means by a 'trained ear'.

## **The Role of Aural Skills**

### Aural imaging

To establish the ABRSM's perceived relationship between the skills assessed in the aural tests and performance proficiency, the Senior Representative was asked how the Board relates the aural tests to the skills used in performance:

"They are crucial to it. The skills in the tests are skills you need to perform musically and intelligently, so the question of internalising is crucial; that's why we insist on sung responses. As a corollary we want to encourage singing as much as we can. We're saying the voice, the instrument used, is crucial to music making. Instrumentalists sing through their fingers so they need to internalise, be able to reproduce accurately and be rhythmically alert...the skills inherent in the aural tests very much flow over into the performance area."

In agreement with sections 1 to 3 of this chapter, the ABRSM also advocates that developed aural skills enable one to perform 'musically and intelligently'. Indeed, we have seen that interviewees also esteem 'internalising' or 'aural imaging' as 'crucial' to a musical performance. However, whilst recognising the importance of imaging to the performing musician the ABRSM's rationale behind the need for aural imaging seems somewhat illogical; that is, it is directly related to the necessity (as the ABRSM sees it) for a musician to sing. The Board argues that whilst utilising aural imaging, the performer will associate his/her internal image with a kinaesthetic response; that is, as one hears a pitch in one's head, one automatically produces a kinaesthetic, 'finger



position' response. Sections 1, 2 and 3 have also stressed the importance of kinaesthetic response in developing an understanding of the role of aural skills in performance; in this sense it is observed that the ABRSM may well appear to be assessing an ingrained 'feel' for music at a kinaesthetic, and perhaps musical level.

However, the Board does not require this 'kinaesthetic, finger' response; it 'insists' that the candidate externally sings the image that s/he holds in his/her head. In essence, it seems that the ABRSM believes that it is crucial for a musician to be able to sing, regardless of their instrumental-domain. As the Board exclaims, being able to sing is a '...a foundation tool-kit' for any performing musician, and further:

"Being able to reproduce with the voice is a very important part of being a musician, so much so that we insist everyone does it. That's why we dropped keyboard skills. These tests have been developed over a number of years...everyone should experience these things. Most will have some sense of the architecture [phrase shape] and rhythm, so they'll get some credit for that."

The Board's rationalisation of the need for singing seems somewhat ungrounded and circular. If instrumentalists 'sing through their fingers' then surely an assessment based upon a 'finger-instrument' response would be a logical development from these assertions. Instead of supporting the Board's perspective on the need for separate aural tests, this argument adds weight to the assessment of imaging through performance itself; or at least through a practical task.

This test may indeed demonstrate the presence of imaging but, perhaps inevitably, the inability to fulfil the test requirement, through a sung response, is not indicative of a poor performer nor is it indicative of a performer's inability to internalise. This problem of discrimination is well recognised by the ABRSM, as the Senior Representative exclaims:

"If they can't reproduce what they've internalised it doesn't mean that they haven't internalised it. There are lots of grunting conductors, out of tune, but we know exactly what they mean..."

However, later on in the interview, the Senior Representative states that in an examination situation, the Board argues that a sung response is the only way to demonstrate that the music has been internalised. He also adds, almost as a reminder, that the candidate can use his/her instrument to reproduce a response instead of singing, although 'at present, responding on one's instrument is rare'. However, the Senior Representative seems to have his own agenda of the preference for a sung response:

"There is no culture of singing out there, there jolly well ought to be and we'll do our damndest to make sure this is important."

Contrary to this statement, as a result of the introduction of Music as part of the National Curriculum, pupils are taught to sing; beginning at Key Stage One, all children use song to communicate and integrate with other children. The Senior Representative's apparent unfamiliarity with the requirements, aims and objectives for teaching and assessing music in the National Curriculum is somewhat alarming. As these are the children who pass through, and directly experience, the graded system of the ABRSM's Practical Examinations, then it is arguable that the knowledge, understanding and skills that are developed in music education are paralleled with the ABRSM's development of assessment. Indeed, as the QCA rigorously standardises, monitors and validates the National Curriculum, GCSE, A and AS levels of music education, it would be wise for the Board, and its Senior Representatives, to acknowledge its role in this process.

As a result of these assertions, we need to explore why the ABRSM perceives aural skills as a necessary feature of musicianship. If someone performs badly but does well in the aural tests, are they better musicians than someone who does badly in both? The Senior representative, however, avoids answering this question and instead replies with a definition of the term 'aural skills'.

## Understanding

Moving on to the issue of understanding, the ABRSM states that the present tests are based on assessing perception, knowledge and understanding. To substantiate the move towards new tests, the Senior Representative claims that:

"The old tests encouraged rote learning, not to question. In the old days, one would get a distinction if they could see and register a perfect 5th...others would work it out. Rote learning can be laid at the door of the old tests. There's something to be said for hearing a chord in its 2nd inversion and singing the middle note, but I'd much [rather] ask that question in the context of a cadential progression. It makes sense musically."

This reply suggests that he would rather test the understanding of the function of sounds and chords in an harmonic context than in isolation. For further enlightenment on this subject, he was asked what the Board meant by this understanding. This response followed:

"The Board never sit down [the examiners] and examine criteria, they just sit down, enjoy and get on with it. I find it hard to be analytical so I hire consultants like [N] and [N]. It's a show stopper for examiners because they train with an examiner's hat on and look at areas in the criteria and understand."

From an examiner's perspective, then, a fundamental understanding of the essence of what constitutes a 'good' performance is implicitly comprehended. However, the assessment criteria which are related to obtaining a pass, merit, or distinction in the different Grades are contained in 'These Music Exams' (Taylor, 1998) which is a document available to teachers and candidates, and is also used by examiners. To pursue what is meant by a candidate's understanding, the interviewer persevered and asked whether the ability to intellectually identify an interval enhances performance proficiency. He replied:

"That's not what I understand as understanding; it is that this piece of Bach feels right like this, it is a perceptual thing...it's not really about knowing a major 3rd, except how a major 3rd would occur in context. It changes the way you play it. Why? Because it is understanding."

This description of understanding relates to the understanding of the *function* of harmony in a melodic context, what interviewees have termed a 'feel' for the music, or 'musicality'. It is about (either explicitly or implicitly) understanding the idiosyncratic style of a piece and being able to

apply one's musical knowledge to the specific context. However, one aspect of the ABRSM's aural tests requires the candidate to verbalise about aspects of musical knowledge. With this in mind, the Senior Representative was asked whether the ability to verbalise relates to a performer's understanding of the music, or whether the inability to discuss musical aspects reveals a lack of musical understanding:

"Certainly not! Just as those who learn to control their vocal chords and sing a response are not necessarily able to verbalise, quite the opposite. Those who can't doesn't mean they can't internalise...those who can't articulate may not necessarily not have perceived and understood it. This is why the Board accepts any verbal, clap or tap sound, any sign of a response because that's what it's about. In spot the difference, the hand goes up rather than verbally explaining; it's an instant reaction...*[Are these responses marked the same way?]*...Absolutely. It's a straight 18 for an alert signed, verbal or sung response, no penalties."

This explanation helps to address some of the questions which had arisen out of chapter VI, where it was noted that the ABRSM's aural tests require verbalisable knowledge, which increases in demand as the Grades evolve. However, there is no age-related testing and so the 'implicitly knowing' versus 'explicitly knowing' debate needs addressing by the Board. We have seen that the majority of interviewees are disconcerted about assessing aural skills outside of performance. Although acknowledging that they perhaps can be assessed separately, on the whole interviewees perceive this as an inappropriate measure. Although the specimen books and syllabi of the ABRSM's aural tests state that a verbal response is required, it is quite clear from the above statement that the Board's examiners do not strictly adhere to this. A more liberal response that physically indicates recognition of musical aspects is welcomed by the Board; however, the majority of interviewees were unaware of this. To alleviate any unnecessary misunderstanding of what is required of performers, and indeed any resultant anxiety, the ABRSM is surely obligated to modify its syllabi, explicitly stating alternative responses.

To enlighten the meaning of understanding and its relation to aural perception further, the Senior Representative was asked about a statement in Harvey's (1990) book which asserts that a performer needs maturity in musical perception and understanding in order to play the pieces. He explained that:

"Maturity is developing, it's part of the process. Exams are set up for those who aren't musically mature, they can still get through them...Let's take musical perception; music's delivered to us through our ears and bones...but unless there's a musical 'us' inside of us to which we can relate what we hear, our perceptions won't grow and mature...perceptions are things perceived...unless you're reacting to the music and learning from it you'll have very poor understanding of what music can be and should be...it's very difficult. If you want to pass the exams in the higher grades, and get a decent mark in the lower grades, it's probably far beyond that."

This statement consolidates what the Senior Representative personally conceives as understanding; it is concerned with an implicit knowing, a 'feel' for the music. However, the concept of 'maturity' needs to be explained more fully. To elucidate this further, the Senior Representative was asked how the Board decides to assess specific aural skills at a particular developmental level.

"Broadly, things should run in line with expectations of the practical side. Texture, style, phrasing etc. seems right at Grades 4-5. We begin to make more demands at Grade 5 in terms of criteria...so a robot could pass 4 but a robot couldn't pass 5. Perhaps feeding questions not just about dynamics, gradation of tone, but what is the texture...The key stage 2 [of the National Curriculum] descriptors are texture and style...the analysis for harmony and structure seems right for Grade 6 where they begin to deal with longer forms, where the exam pieces aren't just 40-50 seconds long but 3-4 minutes. So, they're thinking more seriously about that. Architectural questions are asked at 6-7, with modulation and understanding by 7, but not before. At the lowest levels you need to know pitch and rhythm, to hear the difference between loud and soft; nothing too subtle...'is this music happy or sad?'"

The Board is concerned with developmental issues in terms of *Grade* rather than of *age*, indicating that the Grades are not age-specific. Although age is not an overt factor here, the Board tends to suggest that the Grades do progress developmentally and so therefore are justified in this sense; the need for defining a minimum age for taking a certain Grade is therefore seen as unnecessary. Indeed, one might argue that imposing a minimum age could create potential limitations for younger candidates who are more advanced than the average performer. However, as the Senior Representative implies, the ABRSM is aware of the requirements of the National Curriculum; indeed, he tries to justify some of the Board's tests through reference Key Stage descriptors. However, there is at least one fundamental difference between the development of the ABRSM examinations and the program for general music education: music education is governed by age-

related assessment, the ABRSM's tests are not. Even a general guide that identifies possible problems for candidates who are below a certain age may prove useful for ABRSM candidates.

### Domain-specificity

To establish further the role of understanding as part of the aural tests, the Senior Representative was asked whether the ABRSM believes that candidates who lack an understanding of the relation between aural skills and performance, perform worse on the aural tests than those who do not. The following statement ensued:

"We haven't enough data. A correlation between success in performance and other parts of the exam, we'd love to know that. But there isn't a culture of thinking about this in some parts of the profession. Brass players can be unskilled on the technical side, but it's very rare with piano and violin. In 1995, the minimum marks were given to brass candidates...I don't know the success rate between performance and aural, but it's an improvement, significantly higher, in marks with the new aural tests."

Although candidates seem to attain higher marks on the new aural tests, this does not necessarily indicate that the ABRSM is assessing more relevant skills or that they are assessing understanding. Indeed, the fact that brass players consistently scored the lowest marks in 1995 may suggest that either brass players are less adept in aural ability or that the skills that the tests are assessing may be irrelevant to brass players; indeed, that aural skills may be domain-specific. These two propositions should not be overlooked and will play a major part in the investigation for the rest of the studies of this thesis.

The possibility that aural skills may be domain-specific, calls into question the validity and reliability of the ABRSM's tests. From this perspective it was imperative to ask how the Board ascertains the validity of the tests:

"There is no objective truth. One's instinct gives the end result. The examiner and candidate are in a room and we want an overall impression, the tests are useful for giving it to you."

This reply seemed to be moving towards the opinions of teachers in that one knows from a performance whether the candidate has developed aural skills or not; one 'just knows'

(interviewee no.5). With this in mind, the Senior Representative was asked whether the ABRSM and its examiners are able to identify musicality or whether it is a case of 'just knowing':

"Probably, yes. Most examiners don't go into the aural tests with more than getting a final overall impression which will reinforce and come through their [i.e. candidates'] playing. Invariably, rhythmic inaccuracies, or pitch problems tend to come through...robot performances of 3 pieces tell us about the style of a piece [i.e. there is little expression or 'musicality'] and you know where you stand. We tend not to be ruthlessly analytical...we like to have a relationship with the candidate and dig a little deeper."

This tends to suggest that achievement in the aural tests does directly reflect the ability to perform musically and effectively; and vice versa. However, the Senior Representative talks about the aural tests as if they were cursory to, and indeed merely a reflection of, performance ability.

Chapter VI has examined in detail the means by which the ABRSM assesses aural skills separately. During the interview with the Senior Representative of the Board, it was stated that the tests had to be presented separately because:

"It is helpful to develop aural skills separately. If it wasn't there many teachers wouldn't think about [anything] other than the mechanics of the instrument. The Board was set up in the 1880s with a view to educating a mass of incompetent teachers, the same is the case now."

From an examiner's perspective, the separate aural tests allow the assessor to distinguish between a performance that is merely a reflection of the teacher and one that is truly a musical reflection of the performer; it is through the aural tests that the real aural ability can be ascertained. For example:

"There is an inevitability of testing the teaching method. In improvisation, something learned has that feel...the indefinable improvisatory method designed on the spot is something you can really sense."

Contrary to that which was stated previously, that an examiner 'just knows' when a performance is musical, the ABRSM does not seem to trust its examiners in making this decision. Perhaps the Board needs to be seen to be scrupulous in its evaluation of performance proficiency, yet it has already been stated that the aural tests do not hold face validity for those who are directly affected by them. Perhaps the aural tests are a necessary tool through which examiners are more

able to discriminate between less obviously musical performers; the effectiveness of this tool will be explored in chapter IX. However, the ABRSM employs another sub-component of the examination, the sight-reading task, to distinguish between performance as a product of one's teacher and 'what's really going on'. When questioned about what this sight-reading task would specifically reveal about the candidate, the Board use it to discriminate between a

"...poor performance, which is a result of poor teaching, because [in good sight-reading] you can tell that they have a natural ear...[and a] poor performance that is a reflection of the performer's ability."

Quite how this can be identified is unclear. However, the issue of sight-reading has already arisen in this thesis. The ABRSM recognises that this activity can ascertain a pupil's ability, independent of the influence of the teacher. Sight-reading as a method for assessment will be explored further in Studies Two and Three.

Another issue which may be related to the issue of domain-specificity is the nature of timbre. We have seen, in the literature and the interviews, that performers tend to reference their particular instrument/vocal timbre when employing aural skills in performance. We have also heard the views of teachers about the problems that the piano timbre causes for non-pianist musicians during the aural tests. For these reasons, it was imperative to ascertain the reason behind the Board using the piano for administrative purposes. It can be seen from the statement below that the ABRSM is aware of the difficulties that the piano timbre causes for candidates:

"...There are problems of relating to the timbre of the piano which some people find very difficult indeed. But the alternative is much too difficult for us...There are two things possible, a piano in every examination room or to use the examiner's voice."

In addition to the Board's perspective, the Senior Representative adds his own proviso:

"There is nothing I would like better than to say 'I'm going to sing some patterns, you sing them back'...but some examiners are slightly challenged by this. I couldn't expect every examiner to sing these just as I couldn't expect every candidate to be able to sing them back. Some of us don't sing too well and the candidate would be even more disadvantaged."



However, in recognition of these problems, the ABRSM has already tried alternative means of administering the aural tests:

"There seems to be little alternative. We would have liked to issue examiners with a CD which had the old Bentley tests on, you know, fine intonation, timbre, texture...There are 600 examiners working in 86 countries and over half a million candidates. We had to have totally foolproof equipment so that it can be carried by less well built examiners, with dozens of tests papers and so on. We commissioned someone at the cutting edge of technology to build us a briefcase...made of aircraft materials...with a speaker in front of the box. A CD battery-operated cost £2000 per unit but weighed 16 pounds and was not guaranteed to work anywhere in the world on any occasion. Therefore, one had to devise alternative tests in case of mechanical breakdown, it was just impractical. With regret, we dropped the pre-recorded tests and reverted back."

Because the Board examines in numerous countries with differing, and often challenging, locations the ideal alternatives are perceived as somewhat insurmountable. Surely *because* these examinations influence and affect '86 countries and over half a million candidates', ideal alternatives should of necessity be surmountable. Other institutions have designed tests on audio-tapes, a form of assessing aural perception throughout GCSE, A and AS levels of music education; the mini-disc would hardly be a hindrance to examiners. For want of fairer and more relevant tests, the Board should perhaps consider restricting its examining locations so that validity and serviceability is not compromised.

It is laudable that the ABRSM is aware of its limitations whilst still trying to overcome them.

Indeed, the Senior Representative portrays the Board's acknowledgement that

"...the tests as far as they stand is probably as far as we can go, given the tools we're using. We've covered the basic areas though we'd very much like to look at timbre and fine perception of intonation. They are not a complete set of tests, there are others we'd like to look at but can't. It's a pragmatic compromise."

In comparison with the means of assessment in general music education, a 'pragmatic compromise' would hardly be acceptable to the public it is servicing, or to the QCA who monitors and maintains standards. The Board seems to recognise the limitations of the 'tools' it uses to administer the tests, and that there are other skills that are pertinent to performers which are not

assessed; perhaps it is time to leave tradition behind and embrace the possibilities of technological advancement.

In support of the ABRSM's search for a new method of aural test delivery, the interviewer proposed that it might be desirable to use the candidate's own instrument to administer the tests, with the response also being on their instrument. While acknowledging this method as valid and more relevant, the Senior Representative replies with a mixture of responses in defence of the Board and personal reflections on examiners:

"...one of the problems is carrying the stuff around again, the other is that some of our examiners don't play professionally. They all have basic keyboard skills, perhaps a bit too basic. Numbers wouldn't want to play and it's quite threatening for examiners...logistically it's not on, sadly. But we do produce cassettes of specimens."

Again the Board is faced with the fallibility of its examiners, and indeed, the very nature of testing. The Senior Representative welcomed the suggestion of using the candidate's own instrument to administer the tests but again, was faced with the practicalities of 'carrying the stuff around' and the undue pressure this would create in some examiners. To solve this problem it would seem that the ABRSM would need 600 examiners who could play all instruments (highly impractical and improbable), or instrument-specific examiners and examination sections, or the use of a C.D. or mini-disc. The Senior Representative clearly states that none of these methods would work. Meanwhile, we are assured that the Board will continue, the search for a better method of test administration.

### Validity

Having established that there is 'no objective truth' about the validity and reliability of the aural tests, the interviewer felt it necessary to pursue the origin of the tests somewhat further. The Senior Representative was asked how the original tests were set up. This revealing statement then followed:

"I don't know...in 1923. There were no aural tests before that...maybe some of the results showed that aural wasn't being attended to. They were then revised in the 1950s."

This lack of the Senior Representative's knowledge regarding the initial design and reason for the existence of the ABRSM's aural tests seemed a little strange. One was left wondering how the present tests were redeveloped in light of this information. However, he was aware of the processes that led to the development of the present tests:

"It was a result of [N's] approach in 1983....he felt that they [the aural tests] were in some cases unmusical, isolated out of context, *in vacua*...he wanted to put them into context. It was also revised with the theory papers and bringing in general musicianship exams. The idea was to try to get teachers to think in coherent terms about what they were doing (not to compartmentalise) and that could have led to dropping the aural tests. But, [instead] it led to developing them in different ways."

This indicates that the Board believed that their previous aural tests were in need of updating, requiring tests which were more related to performance ability. To this extent, they were revised considering contextual significance, and musicality, and were designed in parallel with the requirements for the developmental stages of understanding/knowing music theory. Ultimately, the ABRSM redesigned its tests with a view to re-educating teachers about the relationship between aural skills and their role in performance.

This motive clearly recognises the inadequacies of the old aural tests. However, how and why the ABRSM arrived at its decision to develop aural tests in this specific way is still left unclear. To try to clarify the rationale for this, the Senior Representative was asked what model they were based on:

"In the mid 80s, [N] consulted a number of people who were members of the ABRSM, because that's the way things worked then. They set up a working party. It began with 4 to 5 people from the Royal Schools, and then ideas went to the Board's consulting committee. We also looked at tertiary education, teachers with good repute, and picked up vibes from other musicians; the feed back was very positive. Also, we had people who work on the National Curriculum....[N] submitted some fascinating ideas, but the pity was that some of the ideas that the working party came up with, involving pre-recorded material, just couldn't be used for logistical reasons. What we have is quite a compromise."

The ABRSM clearly involved a number of different people in the design process; by consulting professional performers, educationalists, teachers and the National Curriculum, the Board

assimilated this information and began to devise the tests. However, this statement does reveal that the present tests are 'a compromise', due to pragmatics. The validity of the tests becomes somewhat uncertain, with the Board acknowledging that the tests are not entirely what they would have wished for. We are once again faced with whether this is acceptable in light of serviceability to the public; if the National Curriculum and the GCSE, A and AS level examining bodies do not need to settle for a compromise, this indicates that the 'ideal' is not impossible and the ABRSM should undertake all efforts to rectify this situation.

Having discussed the advantages and disadvantages of the aural tests, the interviewer then asked if personally, the Senior Representative was satisfied with the present aural tests. He replied:

"I'm much happier with the tests as they are than when they first came in. One of the problems originally goes back to [Grade] 5, there was too much emphasis on singing to the point at which candidates became terrified. Not having the option to sing or play is a mistake...3-4 tests which are sung in grade 5 is also a mistake; the very point at which voices are changing and cultural pressures are against using the voice at 14. So, we ditched those. Spot the difference in Grade 4 is not relevant...also, sight-singing at grade 5, with no build up, is a problem. So, we compromised with simple a-rhythmic sight-singing at 4. The ideal is to go back to 3 but we'd have to drop something core...so we couldn't, it's a compromise. I'd like to see things slightly more hierarchically introduced. 6-8 tests I'm very pleased with; they are very assessable and the pass rate shows that they are still a challenge but can be met...the pass rate in 95 was 70%, in May 96 it was 83% [for Grades 6-7]. In the less qualified tests we allow musical responses. Grade 5 tests are beginning to seep through to people's consciousness, and they see it as an extension of that. I wouldn't change any of it except to give examiners slightly easier pieces to play sometimes."

When invited to suggest any changes that would be desirable, the Senior Representative replied:

"We're so busy that we don't have time to sit back and think about larger issues, [though] we should. The behaviour aspects of the Board are major considerations."

Turning to the marketable value of the ABRSM's aural tests, the Senior Representative was asked how the Board viewed the purchasers and users of its examinations; that is, the teachers and the candidate. The reply was very positive:

"They [the new aural tests] are very much welcomed. When the 1-5 tests first came in there was horror because there was no material or specimens of any sort, they just didn't know examiners' expectations. It was handled extremely badly. We did it much better with the 6-8 tests. Because 1-5 was already in place and 6 was an extension of 5, 6-8 took the best of existing tests and continued the progression that was happening in 5. We got specimens out

early, workshops throughout the country, and dispelled any angst. The pass rate is extremely high...[N's] purpose for introducing the specimens early on was for teachers to use their music for the basis of learning those skills...it's obvious to us, but not to teachers. We then would have liked to produce specimens for orchestral instruments, not just the piano. To produce tapes of those tests...you could test everything on all instruments except possibly texture; texture's a difficult one. In four part harmony, most teachers with little piano skill can play in slow motion a set of 4 piano chords; we encourage that to happen. For spot the difference I would like to ask 'can you hear that you're playing incorrectly' or 'how can you help your mate to get it right?' Maybe 50 years down the line the message will get through...The syllabus is seen as a curriculum which is assessment driven, not activity driven. The problem is they're taken as all-important."

This final sentence is certainly true of the interviewees who were approached in Study One; the majority do teach to the examination syllabus, rarely stepping away from this to explore further instrument-related aural skills. It is clear from the above quotation that the Senior Representative is concerned about this situation, yet, in defence of the Board, seems reticent about addressing it. It is suggested that a revamp of the tests, or at least the re-education of teachers, performers, and examiners is needed to establish the appropriateness of the relation between aural skills and performance proficiency. It is hoped that this thesis has gone some way in redressing these issues, which will be further explored in the remaining chapters.

### **Interim Conclusion**

The perceived needs of the interviewees reveal that aural training should be driven by one's specific instrument and not by the convenient practicalities of separate assessment. For example, pianists/percussionists require the development of a sense of pitch different to that of a violinist. For such reasons, many interviewees argue that aural skills should be assessed within the context of performance.

Throughout this study, an effective means of training these aural skills was noticeably lacking. We need to develop more effective training methods and more appropriate testing techniques to enable a more fruitful learning process for the performing musician. This will require a more tangible link between the concepts of aural ability and performance skills. If aural skills are imperative to an effective performance, then we need to eliminate, or at least minimise, the attitude which led to this interviewee's remark:

"It's not something I spend time on." (Interviewee no.18)

The results indicate that aural skills, not tests and all that they subsume, are indeed imperative for the developing performer, in the eyes of respondents. The implication is that a more 'musical' performance is produced by those who are aurally aware.

Clearly the aims and purpose of the ABRSM's aural tests are 'absolutely fine'; it is the tasks themselves that performers have to complete in order to improve their development of aural skills and performance, that merit further enquiry. Indeed, because of the ABRSM's performance examinations and its aural tests, teachers and pupils do not readily relate aural skills to performance proficiency.

The issues revealed in this section suggest that although aural training may be necessary to produce effective performers, aural skills should not be assessed separately, in spite of the fact that the ABRSM believes that teachers and pupils 'have very much welcomed the new tests'. However, the responses from the interviews reveal that the explicit and implicit assumptions of examining music students needs addressing. We need to explore what the examination results demonstrate, particularly the aural test results, whether it is musicianship, musicality, performance ability or something other than these.

The assertion that the aim and criterion for assessment of the ABRSM's performance examination is 'overall musicianship' may need further inquiry. This calls for the need to specify what a musician of a certain Grade should be able to do. However, the ABRSM does outline the expectations, specifications and assessment criteria as they rise over the grades, which are spelled out for all concerned in the syllabi and other publications like 'These Music Exams' (Taylor, 1998); it was suggested that an age-related guide to the tests may be of use.

## DISCUSSION

This section will discuss the main findings raised from the preceding four sections. The order of presentation will roughly correspond to the layout within these previous divisions.

### **The Skills and Abilities which Make Up an Effective Performance.**

Undoubtedly, as has been shown throughout this study, interviewees perceive aural ability as underlying many performance skills. These were proposed either implicitly or, when interviewees had progressed further into the interview, explicitly. The results generate several issues to pursue in the later part of this research, particularly concerning aural imaging, understanding, timbre, 'feel' and ultimately the assessment of aural development in the performing musician.

As a result of the interview schedule pilot study, it became evident that teachers and pupils are never explicitly conscious of what makes a good performance. Due to this, interviewees were presented with the interview schedule prior to the interview. Even with this in mind, interviewees still found it problematic as there are 'no hard and fast answers'. The interviews revealed that the majority of interviewees found it difficult to articulate skills which are necessary for an effective performance. This was a little surprising as the majority of them had thought about this issue prior to the interview. However, once encouraged, the majority of interviewees were able to articulate their ideas. A small minority remained unable to do so, and indeed proposed that one cannot define something so intangible as music performance as it is not immediately discernible.

Perhaps interviewees could not access their criteria in the absence of performance stimuli. Or perhaps they were not used to having to think and talk about it, often just getting on with teaching: with a combination of intuition and pragmatics. If this question had been asked again at the end of the interview, after having talked about various issues surrounding performance,

interviewees' performance criteria might have been augmented, that is, they had been coming to it relatively cold.

Interviewees naturally used emotive labels in respect to categorising performance criteria, often being ambiguous, with not all musical attributes being described coherently. This was solved by the interviewer establishing consistency of meaning with defined categories, some self-defined others defined by the interviewer. The problem has been interpreting the wealth of data in a meaningful way. This was surmounted by relating to the interviewees' meaning and understanding of the concept involved.

Throughout the analysis of these results, it emerged that interviewees identified skills needed for an effective performance in two contrasting ways; they responded with criteria dependent on the degree to which these aspects are apparent or covert in performance: whether a skill is immediately apparent and therefore assessable, or whether it is hidden, but nevertheless expected to be present through one's performance. This level of classification is added to emphasise that there are areas of performance that require skills which are perhaps not assessed due to their covert nature.

### Musicality

The issue of musicality was prevalent throughout the interviews, with interviewees regarding it as the most essential ingredient for an effective performance. We have seen from chapter II of the literature review that most researchers, psychologists, educationalists, and musicians describe an effective performance as being musical, deriving this conclusion from assessing skills that underlie 'musicality' and performance. The fundamental difference between this conclusion and the present study is that the present research used an inductive approach to ascertain the skills needed for an effective performance. While it is recognised that there is no universal definition of musicality (Priest, 1989), chapters II and III indicate that most authorities imply that an effective, musical performance must combine aspects of the intellect, the physical and the emotional.



Both Dorian's (1966) and Elliott's (1987) criteria for skills that are crucial to an effective performance, discussed in chapter II, agree with those found in this study. However, the key abilities that have been omitted from these two authorities concern the nature of aural ability; that is, 'feel', 'understanding', and domain-specific skills.

### Communication and understanding

Understanding was seen as an overlapping concept in both musicality and communication. It is the ability to communicate stylistic sensitivity to the audience which is important. Let us pursue this further. It is evident from this data that understanding plays a crucial role in communicating an effective performance. The interviewees divide understanding into an intellectual grasp of the structure of a piece, and 'feel', through expression and communication. This not only requires knowledge of the important aspects outlined in this chapter, but also the skills to express the understanding of this knowledge. Inherent understanding of music concerns contextual significance, with heightened aural awareness being evident through visual presentation (gesture) and communication (Langer, 1979; Fowler, 1988; Bruner, 1990; Davidson and Scripp, 1994).

There are many modes of understanding in music. But what is meant by the term understanding? Research has tended to select one of Davidson and Scripp's (1994) theoretical ways of knowing. Davidson and Scripp (1994), in their description of three distinct ways of musical knowing, come close to defining aural skills as they are perceived by interviewees. They describe the key to a performer's understanding/knowing as including *musical production*, the process of creating music; *perception*, the ability to discriminate and monitor aural feedback; and *reflection*, critical thinking skills and the capacity for interpretation. The latter concerns the way in which stimuli are perceived and encoded in order to make sense and give support to performance, ultimately concerning itself with the ability to stamp one's authorship on the music (Davidson and Scripp, 1994). However, this understanding cannot be discussed in isolation. Indeed, it is an integral part of aural ability and how it relates to performance proficiency. In essence, these concepts raise the question as to how we categorise and perceptually encode

constructs that support performance ability. This, in turn, identifies the need to teach musical understanding, the ability to know, to know how to do, and to know how to communicate. These both utilise the advanced skills that this study defines as employing aural imaging and utilising feedback, that is, active listening.

The present study stresses the most important aspect of Davidson and Scripp's (1994) work, that the key to developing and implementing these skills effectively is a necessary understanding. However, this understanding can be stored both procedurally or declaratively; it does not need to reach consciousness (Clarke, 1987). Utilising the domain of psychology to categorise the different levels of cognitive skills involved in the process of realisation, Davidson and Scripp (1994) identify the schemata that are involved. These consist of 'declarative knowledge' (what we know about a musical skill), 'procedural knowledge' (the steps needed to carry out such a skill), and 'reflective -knowledge' (how the skills can be approached effectively). The learning activities, which include playing by ear, improvisation and exploring alternative interpretations, all require the performer to possess an understanding of the music and its function. To listen actively and use aural imaging enhances comprehension, which in turn facilitates the communication of musicality. Musicality is further developed by the ability to 'feel' and respond at all the sensory levels discussed. Interviewees stressed the importance of 'feel' when teaching the essence of musicality, understanding, expression and a sense of pulse. The kinaesthetic, haptic, auditory and visual senses provide the route for this to follow.

For the majority of interviewees who do advocate understanding as an imperative learning tool, it is explicitly meant as a facility to know what the performer is aiming for. Indeed, learning music should not be a sentence of obligatory practice time, but a journey towards understanding.

Verbal expression is deemed unnecessary; it is the meaning the performer attaches to what they are doing that is important. The consensus is that the inability to understand the role of aural skills in performance, and the realisation of these skills, is the main reason for an ineffective performance.

This approach to understanding has been shown in the literature to be most prevalent (Clarke, 1987; Sloboda, 1988; Da Costa, 1994; Salaman, 1994). With specific reference to the ABRSM's aural tests, interviewees expressed concern about the ability of their young performers to verbalise, although research tends to suggest that age is not important, experience is the key (Revesz, 1953; Bertrand, 1997; Lamont, 1997). Indeed, interviewees propose that it is the ability to hear what a cadence sounds like, not how to verbally articulate it, that is vital.

The interviews have shown that performers often find no connection between music theory, aural and performance; this needs to be rectified for the knowledge of each to be of mutual benefit.

During a discussion on the use of language adaptation, Professor Stephen Pinker writes that it is for 'cause-effect reasoning and intuitive theories about how the world works. Language can be used to multiply the benefits of knowledge...' (1997, p.4). This agrees with most of the interviewees' opinions about knowledge and verbalisation of musical concepts, rather than musical specificities. Indeed, the question as to what verbalising is for raises, in turn, the further question: why do we need to talk about performance-related aural skills? Indeed, the aural tradition of handing down folk-song, and the improvisatory nature of jazz do not require any type of verbal understanding of knowledge. Perhaps it is the use of group discussion that provides performers with an increase in the 'right vocabulary' which they can then transfer into their performance (Lester, 1987); the interviews would suggest that this is so.

A minority of interviewees emphasised the importance of verbalising this understanding. We have seen that the literature is divided on the need for a performer to possess declarative knowledge, yet the results of the interviews tend to suggest that a declarative response is required due to the assessment-driven approach of teaching. Indeed, teachers often view aural training as a drill, carried out purely for the purposes of examinations. For this reason, there is a need to explore teaching methodology and the learning processes that this generates, alongside the development of aural tests.

In response to Taylor's (1969) question, 'are there any constants that can be used in judging all types of musical performance?' (p.24), there certainly are 'constants' in evaluating a solo performance. However, interviewees were divided on what the priority for performance assessment criteria is. Some plumped for technique, although technique was seen as a basic skill on which the skills of musicality and communication could be built. Others thought it more to be what underlies technique, whilst still others proposed that a 'feeling' for the music and the communication of this is foremost. This element of 'feel' was most evident in ways of teaching pulse, harmonic function and expression, musicality and understanding; that is, through the use of eurhythmics, kinaesthetics and imitation. Eurhythmics was used to develop 'feel', understanding and an inner sense of pulse, whilst imitation was used to develop the ability to 'feel' the music, through integrating one's own response to visual and aural aspects, which in turn facilitates communication. The most informative interviewees, who were able to relate aural skills to performance ability without reference to assessment, used eurhythmics as a way of communicating the sense of 'inner pulse'. The literature also substantiates that movement provides an increased sense of 'feel', combined with enhanced aural perception, meaningful knowledge acquisition, and improved communication (Warburton, 1971; Blacking 1976; ; Bohm and Peat, 1989; Shaffer, 1989; Bruner, 1990; Pegg, 1991; Davidson, 1993 and 1995; Cohen, 1996; and Krumhansl, 1997). These musical elements can be facilitated or inhibited through movement, yet it is the developed schema that aids understanding. This is achieved through integrating action (performance) with direction (purpose), juxtaposing the use of kinaesthetics and aural imaging through an expressive cycle of awareness (Cohen, 1996). Musicality, therefore, may be dependent not upon cortical analytical mechanisms alone but is also dependent upon feeling (Regelski, 1975).

### **The Role of Aural Skills in Performance**

Through using a deductive approach, chapter III has provided us with a list of aural skills that a musician needs. However, there is not much research into the listening/aural skills which are needed for an effective performance. The training and assessment of these skills have been copiously remarked upon, yet little has been done to establish the actual aural skills performers

need and utilise, and the significance, effect and development of them in relation to performance. Boyle (1992), in chapter III, defined aural ability as the 'extent to which an individual can receive, discern, and/or process music stimuli'; others have detailed this more through the act of uncovering, selecting, reshuffling, combining and synthesising (Koestler, 1966; Sloboda, 1988). Both of these definitions suggest the process of thought. It is perhaps startling to find that 'aural skills' denote a particular process, strategy or thought pattern; the product, or to put it another way, the actual skill seems to have been forgotten. This realisation may point towards the rationale behind assessment, in the sense that the process is being tested rather than the effect it has on the product (i.e. the product, performance, *can* exist in a state which is relatively uninformed/unenhanced by good aural ability). As Sloboda (1985) argues, one can only infer internal representations. However, this diverges somewhat from the purpose of this section and so this issue will be referred back to later. Let us return to the definition of aural skills.

Performers refine their performances against both their own aural awareness and their ability to image alternatives. (Sloboda, 1988, p.73)

Many interviewees could not define competent aural skills but talked about having a 'good ear' or playing musically. In spite of this, Study One shows that interviewees regard the ability to image aurally and monitor one's results as fundamental skills needed for a musical performance. Indeed, Seashore (1938) asserts that if one cannot image, the performance will be unmusical. Furthering this suggestion, using a deductive approach, interviewees argued that the inability to image is revealed through ineffective and unmusical interpretation.

Throughout this section, interviewees constantly referred to implementing aural techniques to train performance proficiency; indeed, interviewees frequently viewed performance training as a lesson in training the ear and the ability to respond appropriately: the essence of aural imaging and aural feedback. In many of the training techniques, interviewees stressed that the aim of teaching is to encourage and develop the instrumentalist's/vocalist's ability to 'feel'. In teaching musicality, understanding, pulse and expression, interviewees regarded the ability to feel the music inwardly, kinaesthetically, aurally and visually as the key to attaining these skills.

### Inner hearing and active listening

The concept of aural ability relating to performance skill created a tension for interviewees, the majority of interviewees being unable to divorce the concept of aural testing from aural skills. Indeed, many regarded performance and skills assessed in aural tests as completely separate; in a minority of cases, aural tests were seen as bearing no relationship whatsoever to performance ability.

However, once interviewees had grasped the distinction between aural testing and aural skills used in performance, it became apparent that they saw the training of performance skills as relying heavily upon the acquisition and application of relevant aural abilities. Indeed, great emphasis was placed on the necessity of integrating the training of aural skills with performance ability. The underlying reason given for this was that performers need to understand how these two phenomena are connected, and only through understanding will performance be enhanced.

Most interviewees define aural ability as the skill to 'inwardly hear the music before being able to externalise and communicate it'. The ability to effectively use aural imaging was viewed as the essence of musicality and communication. Crickmore (1968) defines perception as 'something known or perceived'; Gardner's (1983) cognitive model describes perception as purposeful behaviour achieved through thinking and linking, indeed 'thinking is the core of mental representation' (Gardner, 1983, p.64). These all denote that one needs perception and cognition to discriminate. So, how does aural imaging, in its full sense, develop? Unanimously, interviewees agreed that it is through doing, through active application and involvement, that this skill will become usefully developed (Seashore, 1938). Indeed, both the literature and interviewees most commonly saw singing as a tool to facilitate and evaluate its development; crucially a skill acquired initially away from one's instrument, unless one's instrument is the voice.

Interviewees most frequently described evidence of developed aural skills as musicality. This, they assert, ultimately involves the use of aural imaging in combination with active listening and understanding. Consistent with the literature, aural imaging is frequently trained by listening

and interpreting a variety of music, but most of all, through singing (Seashore, 1938; Howard, 1982; Hatfield, 1987; Fowler, 1988; Sloboda, 1988; Pratt, 1990; Townsend, 1996). Indeed, Gordon (1993) argues that we need to sing to possess an effective inner voice/ear and this is why the partnership is crucial (also Brodsky and Henik, 1997). However, interviewees hinted that aural imaging is more than this, particularly when it is associated with musicality. It involves the ability to respond and modify one's sound quality and technique, with the ability to identify and adjust mistakes. Harvey (1994) terms this 'musical awareness' whereas Sloboda (1988) stresses this need for self-monitoring as 'knowing what to listen for' (p.101). Inevitably, one's capacity for memorisation was also seen as facilitating this process.

The minority of interviewees just wanted to train their pupils to pass the examination, they had not previously considered how the aural tests relate to performance. The majority agreed that aural skills can be assessed separately, but deemed it inappropriate to do so.

We can see through methods of teaching that understanding plays an important, interactive role with aural imaging, which ultimately leads to an effective, musical performance. Truslit (1938) and others have shown that meaningful memorisation will only occur if imaging is employed with understanding; activities such as playing by ear, improvisation, memorisation and sight-reading (Sloboda, 1976/1985; Gardner, 1983; Nuki, 1984; Banton, 1992; Persson, 1992) contribute to this understanding. The crucial role of good teaching is acknowledged by the ABRSM; they have set up a programme of development which is available to all music teachers.

Additionally, and importantly, some interviewees suggested that the skill of aural imaging facilitates musical understanding; and this understanding is shown through the ability to transfer and apply this skill and knowledge to other performance situations. Indeed, interviewees assert that, if a musician performs without understanding, that is, how to manipulate and communicate meaning, then 'something is still lacking'; it is the ability to relate aural skills to performance that allows the necessary transference of skills. Whether aural imaging is an effective cognitive strategy used to understand performance, or whether it is a skill which is vital in the

development of a musical performance seems somewhat irrelevant for these purposes. It is the resulting understanding of its role in performance that is pertinent: always the product, not the process. Let us now turn to this issue of understanding and how interviewees' beliefs might reflect or differ with the opinions and research found in the literature review.

### **Training Performance-Related Aural Skills**

Interviewees mainly used aural techniques and skills to meet performance criteria. It is the connection that performers make between the activities involving aural imaging, active-reflective listening and their performance that is important to the development of this skill; that is, understanding needs to ensue, culminating in the presence of musicality (given sufficiently reliable instrumental technique). Singing, sight-reading and the instrument itself were the main methods interviewees used to train inner hearing. For active-reflective listening, critically listening, appraising and emulating other performance styles were encouraged.

### **Singing**

Singing is perceived as, initially, the easiest and most fruitful means of communicating pitch, rhythm and expression to a musician. It is argued that singing provides both the teacher and the pupil with an immediate and natural means of developing and monitoring aural imaging, since there are no technical hindrances that may be encountered on an instrument. Pupils are encouraged to sing back phrases that are sung to them, to sight-sing and to engage in song games. The importance of singing as a tool for developing aural imaging is also related to the development of the memory stores. It is arguably easier to develop memory patterns through song than through an instrument. Ultimately, interviewees aim to develop an understanding of imaging, active listening and responding to aural feedback through the concept of 'feel'. Only when this is mastered are pupils encouraged to transfer these skills onto their instrument. The majority of interviewees used singing as a tool to develop inner hearing.



Consistent with these findings, the literature recommends that aural imaging is trained and assessed through singing (Warburton, 1971; Howard, 1982; Hatfield, 1987; Lester, 1987; Fowler, 1988; Sloboda, 1988; Pratt, 1990; Priest, 1993; Dunnett, 1994; Brodsky and Henik, 1997). Indeed, Gordon (1993) argues that we need to sing to possess an effective inner voice/ear. We can see through methods of teaching that understanding plays an important, interactive role with aural imaging, which ultimately leads to an effective, musical performance. Truslit (1938) and others have shown that meaningful memorisation will only occur if imaging is employed with understanding; activities such as playing by ear, improvisation, memorisation and sight-reading (Sloboda, 1976/1985; Gardner, 1983; Nuki, 1984; Banton, 1992; Persson, 1992) are thought to contribute to this understanding.

### Sight-reading

We have seen that sight-reading is often employed to develop inner hearing. Indeed, it was argued that this activity may be more relevant than singing because it involves the performer's own instrument and is directly applicable to the performance context. The literature suggests that sight-reading involves all the activities required for performance and, consequently, is an effective measure of aural imaging in particular, and more generally, musicality (Seashore, 1938; Edwards, 1986; Sloboda, 1995, 1998). Although interviewees do not relate sight-reading skills to performance proficiency, they do believe that this ability provides 'general musicianship'.

### Improvisation

Interviewees viewed the act of improvisation as an important process for developing an understanding between aural skills and performance proficiency. The literature also supports the perspective that improvisation not only develops an awareness of performance-related aural skills, but is also an activity that provides evidence for skills such as inner hearing, active-reflective listening and 'feel' (Regelski, 1975; Clarke, 1987, 1988; Hatfield, 1987; Hill, 1987; Priest, 1989; McPherson, 1992). Indeed, we have seen that City University has replaced the traditional form of teaching aural skills with improvisation classes.

### The use of the kinaesthetic response

Although interviewees found musicality difficult to define, they unanimously agreed that functional understanding, expression and a sense of rhythm and pulse are rudimentary to this. Very commonly, movement is used to train these. Essentially, through moving to music, reflecting qualities of the music through a sensory response, it is argued that an inner sense of 'feel' will ensue. This 'feel' is perceived by interviewees as a type of understanding of how aural qualities of the music are reflected and integrated within performance (in this case through physical movement). Responding physically to the beat of the music was seen as the most effective way of engendering a sense of pulse, and in turn, developing awareness and a direct sensory 'feel' of this. This refers to an 'inner' sense of movement which interviewees described as 'feel', not a strict adherence to tempi. It is the ability to communicate this sense of pulse, through the music, that illustrates one's implicit understanding and musicality. Ultimately, then, an inner ability to feel the sense of rhythm and pulse was evidence of musicality.

Authorities particularly agree that movement plays an important role in training 'feel' (Warburton, 1971; Blacking 1976; ; Bohm and Peat, 1989; Shaffer, 1989; Bruner, 1990; Pegg, 1991; Davidson, 1993 and 1995; Priest, 1993; Cohen, 1996; and Krumhansl, 1997). The literature also substantiates that 'feel' is a combination of developed aural skills and meaningful knowledge acquisition, which in turn aids communication. These musical elements can be facilitated or inhibited through movement, yet it is the developed schema that aids understanding. Through the integration of action with direction, juxtaposing the use of kinaesthetics and aural imaging, an expressive cycle of awareness is developed (Regelski, 1975; Cohen, 1996). Musicality, therefore, may be dependent not upon cortical analytical mechanisms alone but also upon feeling. As Regelski relates:

Performance without cognition and 'feeling' seems incongruous to the musician, yet it is done every day by the students of some teachers. (p.218)

Study One, and much of the literature, have identified that an inner sense of pulse is fundamental for communicating musicality. Strikingly, perhaps, interviewees found this difficult to articulate

in order to teach. Overwhelmingly, the use of eurythmics and movement were the most effective methods of developing this 'kinaesthetic/haptic' response.

This necessity for 'feel' relates back to Cook's (1996) study, where trombonists' inner movement and use of haptic sensors were effectively employed despite the masking of aural feedback. Although the interviews and the literature agree that aural feedback is essential for a musical performance (Sloboda, 1988; Glennie, 1990), Cook's (1996) study suggests that this may be a too simplified account of the actuality (c.f. chapter III, pp.34-36). Indeed, in conjunction with the results of the interviews, it is suggested that the use of aural skills may differ in degrees according to each instrumentalist; and further, that aural skills may be domain-specific. For example, the skill of aural imaging was deemed as vital to aid a violinist's communication and 'feel'; for a pianist this was not apparent.

#### Utilising the memory store

A significant number of interviewees regard memorisation skills as being imperative for an effective performance, these being attained through aural development. However, there are many types of memory available to the performing musician. Those found to be significant were kinaesthetic memory and the relationship between aural memory and visual memory, as supported by Nuki (1984), Pratt (1990), and McPherson (1993). It is this relationship, the ability to internalise aurally a written pitch, resulting in accurate externalisation on one's instrument or voice, that interviewees perceived as crucial for the development of aural skills. Aural memory facilitates listening, resulting in musical performance with increased sense of feeling and understanding (Seashore; 1938; Henson, 1987; Pratt, 1990).

By training memory...and by teaching reading properly, we are teaching aural perception. They are all different facets of the same coin. (Lester, 1987, p.17)

This is based upon the principle of learning through the ear, committing the music to memory and then externalising it.

Throughout this study teachers frequently remarked upon their lack of an effective means for training aural skills. However, interviewees rarely deviated from aural methods of teaching performance ability yet were initially unable to define aural skills. This tends to support Pratt's (1990) argument that lack of 'aural awareness' in musicians is because the 'training is at fault'. Training needs to focus on an understanding of the relevance of aural skills to performance proficiency, ultimately developing imaging as a transferable skill. Aural skills are not just about listening, as the literature tends to assume. This study has led to the redefinition of aural skills; essentially, this encompasses the ability to image effectively, 'feel' and understand one's performance, resulting in a communicative and musical performance.

### Demonstration and emulation

To develop active-reflective listening, and skills that enhance communication, knowledge and understanding, interviewees stress the need to appraise critically their own performance and that of others. To increase their understanding of how skills produce various results, performers are also encouraged to discuss interpretations and techniques with others. The most frequent method was the use of demonstration to develop a performer's individual style and interpretation; this primarily used repetition and emulation, rather than imitation. The theory behind this technique is to bring about a sensory response from the pupil; in essence, the ability to 'feel' the music. It is argued that through the kinaesthetic, haptic, auditory and/or visual sensory response and feedback, the performer eventually develops this 'feel'. Most importantly, the consensus is that this 'feel' ultimately facilitates and develops the necessary understanding of the relationship between aural and performance, and, in turn, matures this understanding into a realisable, transferable skill.

The importance of modelling, demonstration and imitation to develop performance-related aural skills, is advanced by many other researchers (Crane, 1915; Regelski, 1975; Thackray, 1978; Greer, 1980; Sloboda, 1985; Cziko, 1986; Lester, 1987; Priest, 1989; Gillespie, 1991; Reaney, 1995; Cohen, 1996; Garvey, 1997). The development of memory cues is also trained through demonstration and imitation. It is argued that the kinaesthetic, haptic, visual and auditory sensory responses are

recorded and stored in memory to be referenced and cued throughout performance. Interviewees argue that it is the aural image that is of particular importance here. The aural image is developed and utilised through responding to these cues, ultimately leading to the development of 'feel'.

However, a minority of interviewees suggest that 'one should explain and discuss everything...which leads to good musical knowledge'. Indeed, the majority agreed that both pupil and teacher should engage in discussions about music, preceded by demonstration.

However, the activities in which their pupils engage seem to demonstrate that this discussion is not necessarily of a technical nature; that in fact, it is about the 'feeling' of the music. The need for verbal interaction was also discussed in the literature. However, it was argued that this is only important if a performer lacks understanding and/or 'feel' (Cziko, 1986; Priest, 1993; Edwards, 1986; Clarke, 1988).

Interviewees' views are frequently a reaction to the ABRSM's aural tests, where candidates are required to verbalise about specific aspects of musical knowledge. However, as we have seen, the ABRSM's concept of understanding 'is not really about knowing a major 3rd, except how a major 3rd would occur in context and [how] it changes the way you play it'. One could conclude from this statement that the ABRSM believes theoretical aspects to be useful only insofar as they inform performance.

## **The Assessment of Aural Skills**

### **Comparison of the view of teachers and of a Senior Representative of the ABRSM**

In addition to interviewees identifying specific aural skills that enhance performance ability, they also expressed concern about how these perceived aural skills relate to the ABRSM's aural tests. Interviewees notably addressed the discrepancy between what they saw as aural skills within performance ability and what the ABRSM's aural tests purport to assess. Indeed, a pupil with ABRSM Grade 8 distinction, performing 'highly sensitively and musically', could not 'do aural

tests', choosing the keyboard skills option instead, now no longer available. She is reported, by her teacher, to have said 'I don't know why we're doing formal aural, it's part of playing'; many interviewees agreed that this is a common retort from pupils. One wonders whether aural tests have confused the perception of aural skills rather than enhanced it.

Study One indicates that teachers are frequently unaware of any relationship between aural skills, as defined through the ABRSM's tests, and performance ability. Even when teachers defined for themselves the nature of aural ability, there was no connection made. This emergent issue emphasises the need to focus teachers' and performers' attention on the correlation between aural ability and performance proficiency, and to devise tests which encourage and support this correlation.

#### *Areas of disagreement*

If the Board's statement regarding teacher and pupil responses to the aural tests is so positive, why is it that the interviews carried out reveal that teachers and educationalists are unhappy with the tests, often with little understanding of why the tests are present? Indeed, many interviewees question the need for the very existence of the aural tests.

One of the ABRSM's proposed reasons for the existence of aural tests, namely that they are present to help the examiner in identifying areas of weakness, tends to imply that aural testing is a diagnostic process like, for example, diagnosing anaemia, rather than the assessment of musicianship itself. Perhaps it is a means for identifying where the student needs further training in order to improve performance. The Board reveals that perhaps this is true; it is an aid for examiners to extract information which they are less able to identify through the performance itself. This raises the question whether they are really assessing the same things twice. However, the examination results for each candidate are not detailed enough for pupils and teachers to ascertain the weaknesses, something the Board would like to be able to do but feel that they cannot, as it would be a critical reflection on the candidate's teacher. The ABRSM admits that

they are 'so busy that we don't have time to sit back and think about larger issues' but acknowledges that they should. The Board seems content with the face validity of its tests.

My findings to date reveal that the ability to identify relationships between aural skills and performance proficiency is a key area that needs addressing within teaching strategy. The majority of interviewees agreed that, through the acquisition of relevant musical knowledge, in conjunction with the development of an understanding between the necessary integration of performance ability and aural skills, performance will be enhanced. This theory points to the necessity for a reevaluation of the ABRSM's aural tests with specific attention paid to the development of skills that directly feed back into performance.

If there is a need to assess aural skills, as the research indicates, then we need to assess genuine, not just apparent, understanding. This can perhaps best be shown through actual performance. But how can we gauge aural ability from performance? Some interviewees ascertain that if a musician is performing well then they must have good aural skills; it is the context that matters, not the isolation of specific skills for assessment. Aural tests tend to assume that mental states are made up of elementary units and this is how they test them. This calls for the need to influence aural training. The first step needs to concern training, using an integrative approach to incorporate aural skills as a development tool for performers. We need to promote aural training as an integral part of learning to perform; with the emphasis on assessment, this process will prove difficult to pursue (unless the tests are redeveloped in the light of these findings).

#### Domain-specificity as an expansion of the concept of aural skills

We have seen that interviewees, though not explicitly perhaps, have hinted at aural skills being domain-specific. One instance of this can be illustrated by interviewees' apprehensions about aural skills being related to the ABRSM's aural tests; perhaps aural skills need to be focused more on the candidate's specific instrument. Interviewees agreed that aural should be part of assessment but that aural skills may vary between instruments.

In relation to imaging, interviewees noted that aural imaging may also be domain-specific; that is, that performers image the timbral characteristics of their own instrument, with brass instrumentalists imaging through kinaesthetic and haptic means. The literature tends to support this hypothesis (Seashore, 1938; Stowman, 1996; Cziko, 1996; Gabrielsson and Juslin, 1996; Stecklein, 1996; Edlund, 1997). The suggestion that different instrumentalists may use different aural skills to various degrees has enormous ramifications for the validity and reliability of the ABRSM's aural tests, which will be addressed in the next chapter.

A paramount area of discontent among interviewees concerns timbral difficulties as a part of the aural test administration. The tests are administered on the piano with candidates responding to the various tasks with clapping, tapping, verbalisation and singing. Interviewees, other than pianists, report that the difference between the timbre of the piano and the performer's own instrument creates a disadvantage. Not only are candidates less familiar with this instrument, but it bears no relationship to the perception of aural skills relating to their own instrument. Further to this, responding with voice creates additional complications, as yet again an alternative method of production and timbre are required and assessed. Paradoxically, the method teachers employ to develop the ability of aural internalisation is through encouraging performers to sing, singing being the most controversial issue surrounding aural testing whereby candidates are expected to sing back responses. Indeed, many interviewees perceive the ability to sing back a response and play back a response as two very different cognitive processes, singing back responses being required by the ABRSM, with playing back responses being offered as an alternative in some grades. The central question is: which process is more akin to performance ability?

Both the Senior Representative of the ABRSM and the interviewees acknowledge that the piano is used to administer tests due to practical reasons. However perhaps this is not a justifiable educational reason for using the piano as a gauge of a performer's aural abilities. In addition, interviewees related timbral problems to specific instruments, often proposing ways in which administering and responding on one's own instrument would benefit the performer.



One solution to the timbral problem may be for tests to be administered on the candidate's instrument and for the candidate to respond using his or her instrument. As one interviewee details:

"String players have a different perception of tonality than pianists. Singing can cause timbral problems because some people can hear the music in their head but can't adequately pitch and sing it. Using your own instrument is a good option and may rectify technical problems in earlier grades." (Interviewee no.16)

Indeed, emerging as an issue from this research, an additional minor study was undertaken. This involved a further 6 brass players who claimed that they could not 'do aural'. The teacher administered the ABRSM aural tests on their own instrument with the pupil responding likewise. A significant number of performers showed improved responses, some being able to respond where they had not been able to previously. These results may suggest that there are timbral problems when interpreting and responding to the aural tests. Apart from the piano being the common instrument people are most likely to play, and for practical reasons, there seems no other reason for its use to administer tests. If the tests are to include anything to do with harmony and texture, however, it is the only instrument to use.

The two areas of understanding and timbre are not adequately addressed by the ABRSM, neither as part of their teaching materials nor as part of the performance examination. Indeed throughout the interviews, interviewees consistently expressed disquiet about their own inadequacies in training a performer's aural development.

As was noted earlier, it was suggested that different instrumentalists have different needs for aural skills; that is, that they may be specific to one's particular instrument; both the interviews and the literature tend to suggest this hypothesis (Revesz, 1953). For example, with tests being administered on the piano, instrumentalists who had piano lessons additional to those on their primary instrument performed better than any other instrumentalist, except pianists, suggesting enhanced aural skills (Stecklein and Aliferis, 1957). These results may suggest that the aural tests are biased towards pianists. However, the reason for this might not be (only) timbral, so much as

the fact that pianists inevitably develop a much more acute harmonic/tonality sense than single-line layers.

Timbral information provides essential aural feedback and, combined with expression, alters one's perception. Timbre is also tied up with the memory trace because it locates pitch, and perhaps generates other haptic/kinaesthetic responses. Timbre is also perceived and used functionally, it effects expression and communication by manipulating sound production.

Interviewees were also concerned about the discrepancy between assessing intonation between instrumentalists; that is, the differing needs of the pianist and violinist. Frequently, interviewees viewed secure intonation as evidence of a 'good ear', the ability to integrate and utilise aural imaging in performance. Chapters II and III identified the importance of secure pitch/intonation for an effective performance. However, interviewees suggested that there is a fundamental difference in need and application of the skills needed to facilitate secure intonation between fixed and non-fixed pitch instrumentalists (Seashore, 1938; Sloboda, 1988; Pratt, 1990; Godoy, 1997), proposing that aural skills may be domain-specific. This instrument-specific skill requires effective use and application of aural imaging and its relative: aural feedback. Throughout Part I of this thesis, these two skills penetrate the literature on performance-related aural skills.

However, the definition of aural imaging and aural feedback is limited to imaging from written notation, that of hearing the pitch in one's head, while a minority of authorities also included the ability to image timbre, register, dynamics and so forth within this definition. The results of the interviews lead to an expansion and redefinition of this concept, suggesting that the skill and full application of aural imaging incorporates the ability to monitor results through a whole gamut of sensory feedback; through aural, kinaesthetic, haptic and visual feedback. In turn, this ability is not implemented in isolation; it plays an integral role in 'knowing what to listen for' (Sloboda, 1988), through applying an intellectual awareness of direction, coupled with one's sense of performance, commitment, communication and 'feel'.

## CONCLUSION

The drive behind this study has been a direct response to Carlsen's question, posed nearly three decades ago:

We teach ear training and we have taught it for some time, but what degrees of perceptual faculty are required in order to be an 'effective musician'? (1969)

From an empirical perspective, this data analysis tells us how teachers answer the question but cannot directly establish the link between aural skills and performance. The results indicate that aural skills, not tests and all that they subsume, are indeed imperative for the developing performer. The essence of musicality requires an implicit understanding of, and 'feel' for, the music. Additionally, it was proposed that aural skills may be specific to the instrumentalist/vocalist, for example a pianist might not need the same aural skills as a violinist. The implication is that a more 'musical' performance is produced by those who are aurally aware. These three areas will be considered in detail throughout the remaining studies.

Ultimately, this study reveals that for both performers and teachers, and for all those who are influenced by aural skills, their development, relevance to performance ability, and ways of assessment, 'aural skills' and 'aural testing' need to be approached with fresh perspectives. A massive re-education is required if we are to progress further than the 'knee-jerk' reaction that many interviewees produce:

"The world is full of people who go deaf when they hear the word aural." (Interviewee no.18)

## **Chapter IX Study Two: An Analysis of the Internal Validity of the Aural Tests in the ABRSM's Performance Examination**

### **INTRODUCTION**

The results of Study One indicate that aural skills (although not necessarily aural tests) are thought to be imperative for the performing musician. The implication is that a more 'musical' performance is produced by those who are aurally aware; of particular importance was the ability to image, understand and 'feel'. However, the interviews revealed that teachers, educators, psychologists and the candidates themselves believe that the ABRSM's aural tests do not necessarily serve the interests of the candidates. If aural skills are evidenced in performance, then a valid aural test should discriminate between good and poor performers. The majority of the interviewees did not perceive the skills examined in the aural tests as contributing to a better performance. Partly, this was because of the problems with using the piano timbre as the assessment stimulus, and because of the required singing responses.

Study Two examines the ABRSM's aural test, exploring the power of this to discriminate between good, 'well rounded' (the ABRSM's operational definition) performers and poor performers, through an analysis of a sample population of the ABRSM's performance examination mark sheets. The ABRSM's examiners do not provide a mark for each individual subsection of the aural test, instead being directed to allocate a general mark to the candidate's overall performance in the aural test. The criticisms of the interviewees with respect to individual aural test items can therefore not be directly addressed in this analysis. Despite this restriction, this analysis will go some way toward assessing the validity of the ABRSM's aural test.

### **Aims**

1. The primary aim of Study Two is to explore whether the ABRSM's performance examination aural tests reflect a candidate's prepared-performance ability. This will be investigated through

distinguishing between those performers who score highly on the ABRSM's prepared-performance and those who achieve a low mark, and then comparing them with respect to their marks on the aural sub-test. If the tests are relevant, good performers should score significantly better on the aural test than poor performers.

2. The availability of test marks for the other sub-tests and the overall examination marks for the sample permitted the second aim of assessing the internal validity of the ABRSM's examination. This was done through correlating sub-scale marks with each other and with the overall examination mark.

3. Thirdly, the data may suggest whether differing instrumentalists tend to perform differently on the sub-tests (domain-specificity). In particular, it will be possible to examine the claim, upheld by the majority of interviewees, that the aural tests are biased toward pianists.

## **METHOD**

### **Subjects**

The sample consisted of 97 examination candidates, all of whom had taken an ABRSM Graded performance examination during the Autumn of 1997. The sample was obtained by taking all the ABRSM candidates of one examiner who examined in two locations. The Grades taken ranged from 1-7 (see Table 1), consisting of 10 categories of instrumentalists (see Table 2). Most of the candidates were in the lower Grades, with the overall majority being pianists (71%). This sample was not open to researcher bias since the researcher was not involved in its selection and all ABRSM examiners adhere to a strict standard of marking. The ABRSM, in its role as a collaborating body, agreed to the use of this material.

### **Materials**

The ABRSM Examination mark forms, containing individual marks for each section of the examination and the examiner's comments for all 97 candidates. The candidates' and teachers' names had been removed. The examiner's comments were not used in the analysis.

**Table 1****Frequency distribution of candidates having taken Grades 1-7**

Grade	Frequency	Percent:
1	23	23.711%
2	17	17.526%
3	15	15.464%
4	18	18.557%
5	14	14.433%
6	3	3.093%
7	7	7.216%
<b>Total</b>	<b>97</b>	

**Table 2****Frequency distribution of instrumentalists**

Instrument	Frequency	Percent:
Violin	4	4.124%
Viola	1	1.031%
Cornet	5	5.155%
Flute	6	6.186%
Oboe	1	1.031%
Clarinet	3	3.093%
Piano	69	71.134%
Voice	3	3.093%
Saxophone	4	4.124%
Tuba	1	1.031%
<b>Total</b>	<b>97</b>	

## Design and Procedure

In order to compare 'good' and 'poor' performers' marks on the sub-scales and overall examination, candidates were assigned to one of two groups based on their overall mark for the performance sub-test. It is important to clarify the meaning of 'good' and 'poor' in this context: they are relative, since we would expect some very poor performers not to be entered for examination.

Subjects were chosen from the two extreme ends of good and poor performers; that is, the upper quartile and lower quartile range of scorers on the prepared-performance sub-test were selected and allocated to the 'good' and 'poor' groups of performers respectively. Out of a possible score of 90, poor performers were those scoring 68 and below, and good performers were those scoring 76 and above.

The marks on the aural, sight-reading, and scale and arpeggio sub-tests were then compared for the 2 groups using the Mann-Whitney U Test. A comparison between good and poor performers was additionally made using a Frequency table. The data for the descriptive statistics was based on pass/fail criteria using the ABRSM's scoring system.

The Mann-Whitney U Test was used to test for significant differences between the two groups using ordinal data. A non-parametric test was used because the data cannot be assumed to be normally distributed. That is, the scaling system used by ABRSM examiners is not linear; in real terms the higher end of the scoring system was predominantly used (i.e. 20/30 is a bare pass), rendering unclear the meaning of the lower portion of the scale. Descriptive statistics were additionally used to provide a musical comparison of possible trends in the data. To examine the internal validity of the sub-tests, a correlation study was carried out. A Spearman Rank Correlation analysis was employed because it could not be assumed that the data were normally distributed.



Lastly, the possible variance in aural marks for different instrumentalists is explored through a visual inspection of the data since the number of subjects in some groups was too small to support a statistical analysis.

## RESULTS OF ANALYSIS

### Descriptive Statistics

1). Overall mark. The maximum mark that can be attained in the ABRSM's performance examination is 150 and the minimum is 0, with the pass mark being 100. To pass with merit the mark has to total between 120 and 129; to pass with distinction, the total mark has to range between 130 and 150. All candidates scored between 86 and 140. Half of the candidates scored a pass ( $n= 48$ ), which was the largest mark category. Thirty five of the candidates attained a merit and 11 scored a distinction, with only 3 failing the examination (see Fig 1 and Table 3). Table 4 shows that the mean mark was 118.02, the standard deviation was 9.35, the range of scores covered 54 marks, and the 25th and 75th percentile were 111.75 and 125 respectively.

2). Aural marks. Fig. 2 shows the distribution of candidates' marks on the aural sub-test. The total possible mark range is 0-18, with the pass mark being 12. Candidates' marks lie between 9 and 18. It can be seen that the majority of candidates (91.75%) passed the aural test, with the majority scoring 14 or 15. As can be seen from Table 5, the mean mark was 14.14, the standard deviation was 1.68, the range of scores covered 9 marks, and the 25th and 75th percentile were 14 and 15, respectively.

3). Scales and arpeggios. Fig. 3 shows the distribution of candidates' marks on the scale and arpeggio sub-test. The total possible mark range is 0- 21, the pass mark being 14. Fig. 3 shows that the majority (85.57%) of candidates passed this sub-test. Table 6 shows that candidates' marks lie between 9 and 21. As can be seen from Table 6, the mean mark was 16.36, the standard deviation was 2.42, and the 25th and 75th percentiles were 15 and 18, respectively.

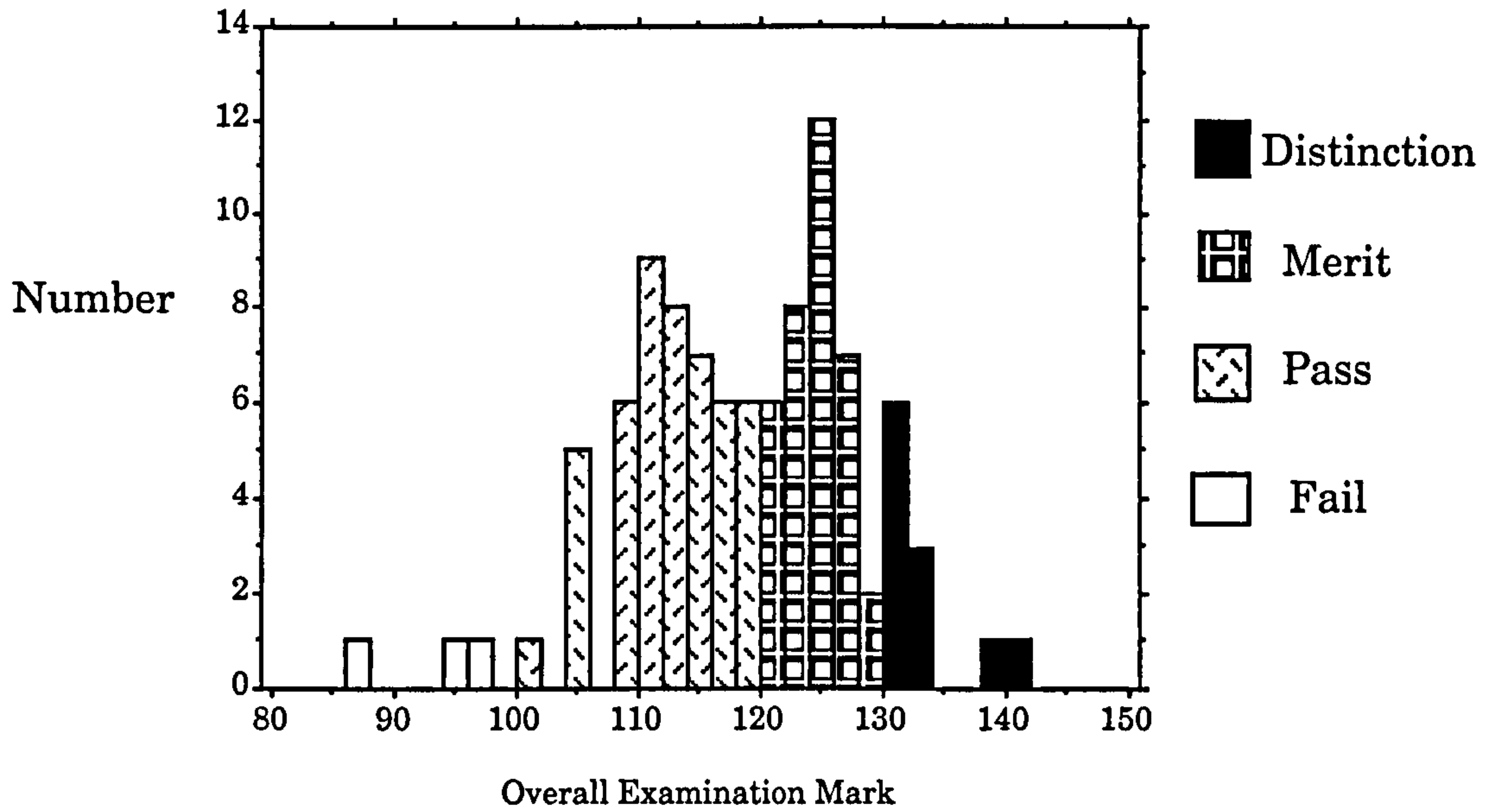
4). Sight-reading. Fig.4 shows the distribution of candidates' marks on the sight-reading sub-test. The total possible mark range is 0- 21, with a pass mark of 14. The majority (78.35%) of candidates passed this sub-test. Table 7 shows that candidates' marks lie between 9 and 21. As

can be seen from Table 7, the mean mark was 15.61, the standard deviation was 2.08, and the 25th and 75th percentiles were 14 and 17, respectively.

5). For the performance sub-test, which consists of three prepared pieces, marks can range from 0 to 30 for each piece performed, 20 being the pass mark, with the total possible mark range therefore being 0-90. Fig. 5 shows the distribution of marks on the performance sub-test. The majority of candidates passed (93.91%). Table 8 shows that the range of total marks spanned across 33 marks, from 53 to 86, with a mean of 71.9. It can be seen that the 25th percentile is the mark of 68, with the 75th percentile being 76. Subjects scoring 68 and below were allocated to the 'poor performers' group and subjects scoring 76 and above were allocated to the 'good performers' group for the purposes of the following analyses. Both the 'good' and 'poor' performer groups comprised of 27 subjects.

For all histograms, the bars are aligned to the left, with the left line representing a candidate's mark on the horizontal axis.

**Fig. 1**  
**Histogram of candidates' overall examination marks**



**Table 3**  
**Frequency distribution of candidates' overall examination marks**

Overall mark:	Frequency:	Percent:	
Fail	3	3.093%	
Pass	48	49.485%	- Mode
Merit	35	36.082%	
Distinction	11	11.34%	

**Table 4**  
**Summary statistics of candidates' overall examination marks**

Number:	Minimum:	Maximum:	Range:
97	86	140	54
Mean:	Std. Dev.:	25th %:	75th %:
118.021	9.345	111.75	125

Fig. 2

Histogram of candidates' marks on the aural sub-test

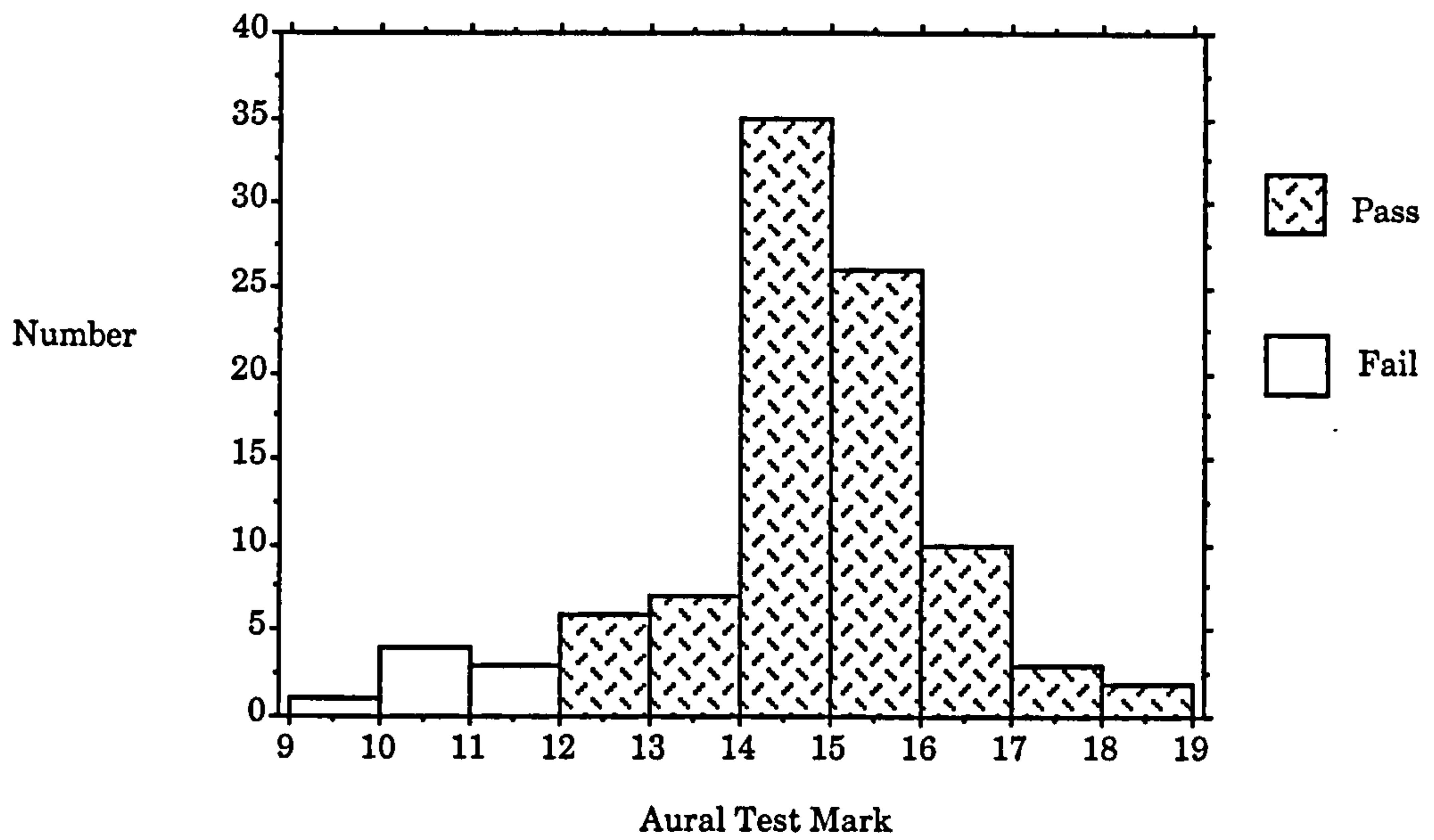


Table 5

Summary statistics of candidates' marks on the aural sub-test

Number:	Minimum:	Maximum:	Range:
97	9	18	9
Mean:	Std. Dev.:	25th %:	75th %:
14.144	1.677	14	15

Fig. 3

Histogram of candidates' marks on the scale and arpeggio sub-test

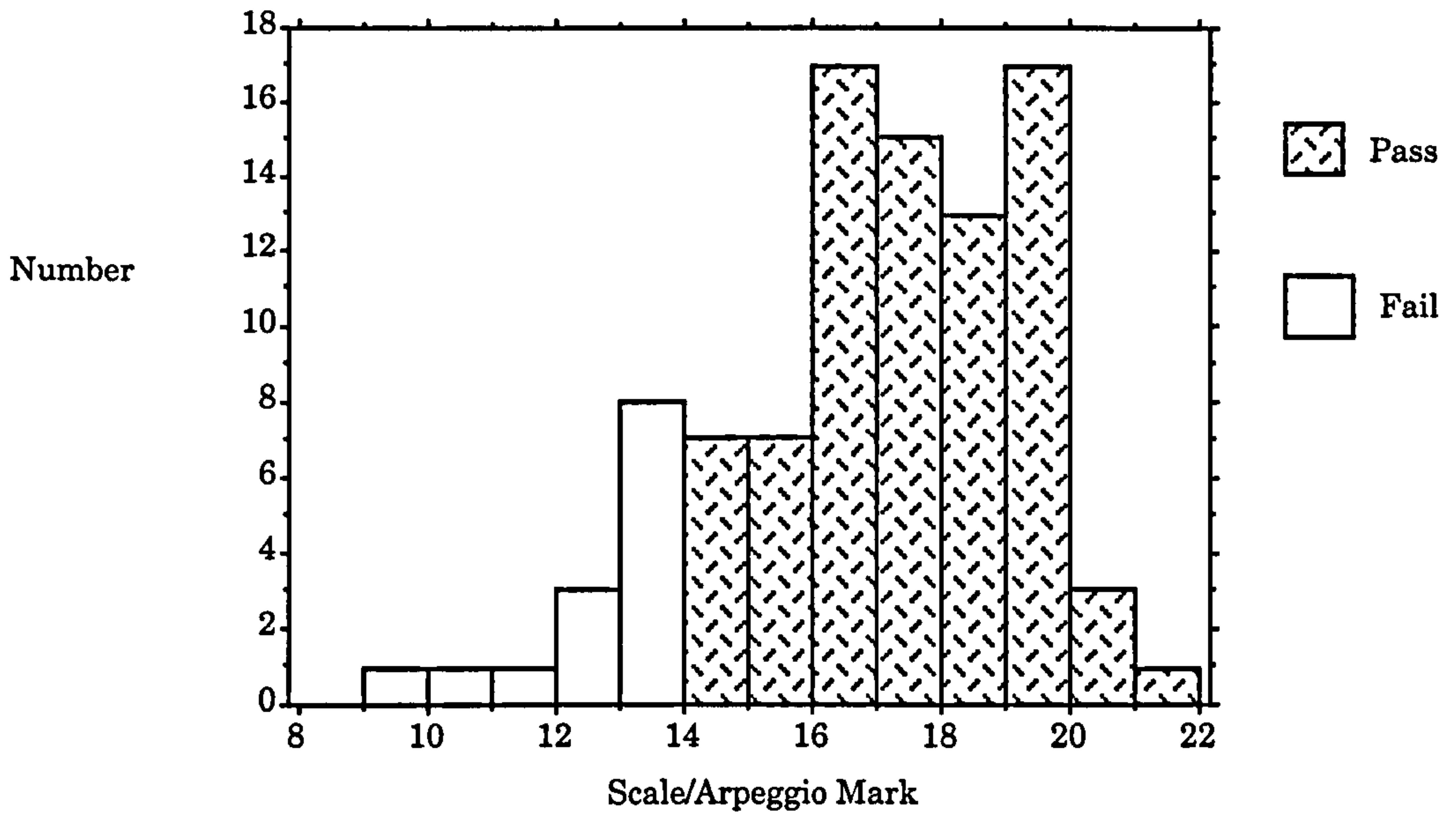


Table 6

Summary statistics of candidates' marks on the scale and arpeggio sub-test

Number:	Minimum:	Maximum:	Range:
94	9	21	12
Mean:	Std. Dev.:	25th %:	75th %:
16.362	2.422	15	18

Fig. 4

Histogram of candidates' marks on the sight-reading sub-test

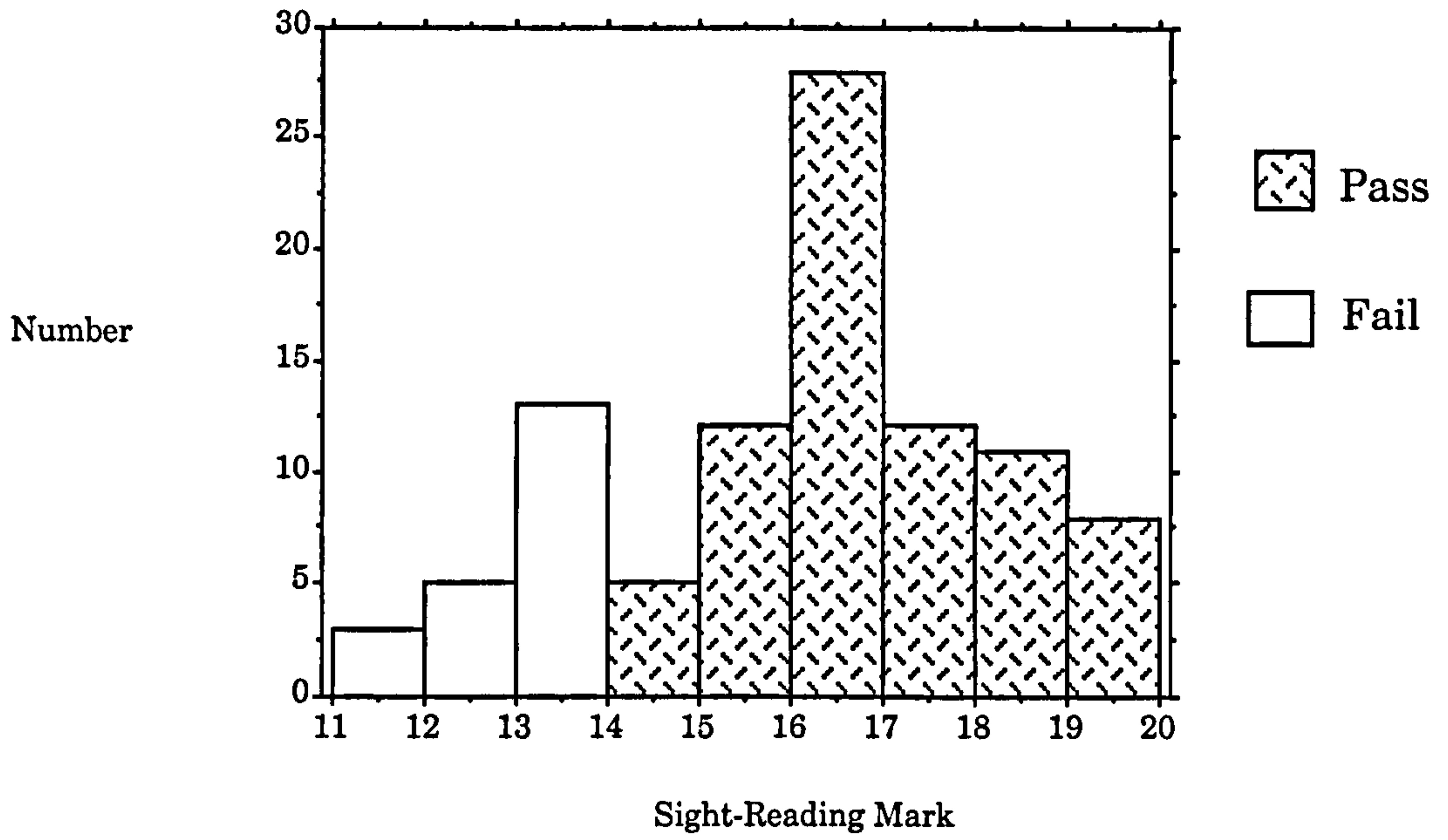


Table 7

Summary statistics of candidates' marks on the sight-reading sub-test

Number:	Minimum:	Maximum:	Range:
97	11	19	8
Mean:	Std. Dev.:	25th %:	75th %:
15.608	2.084	14	17

Fig. 5

Histogram of candidates' marks on the performance sub-test

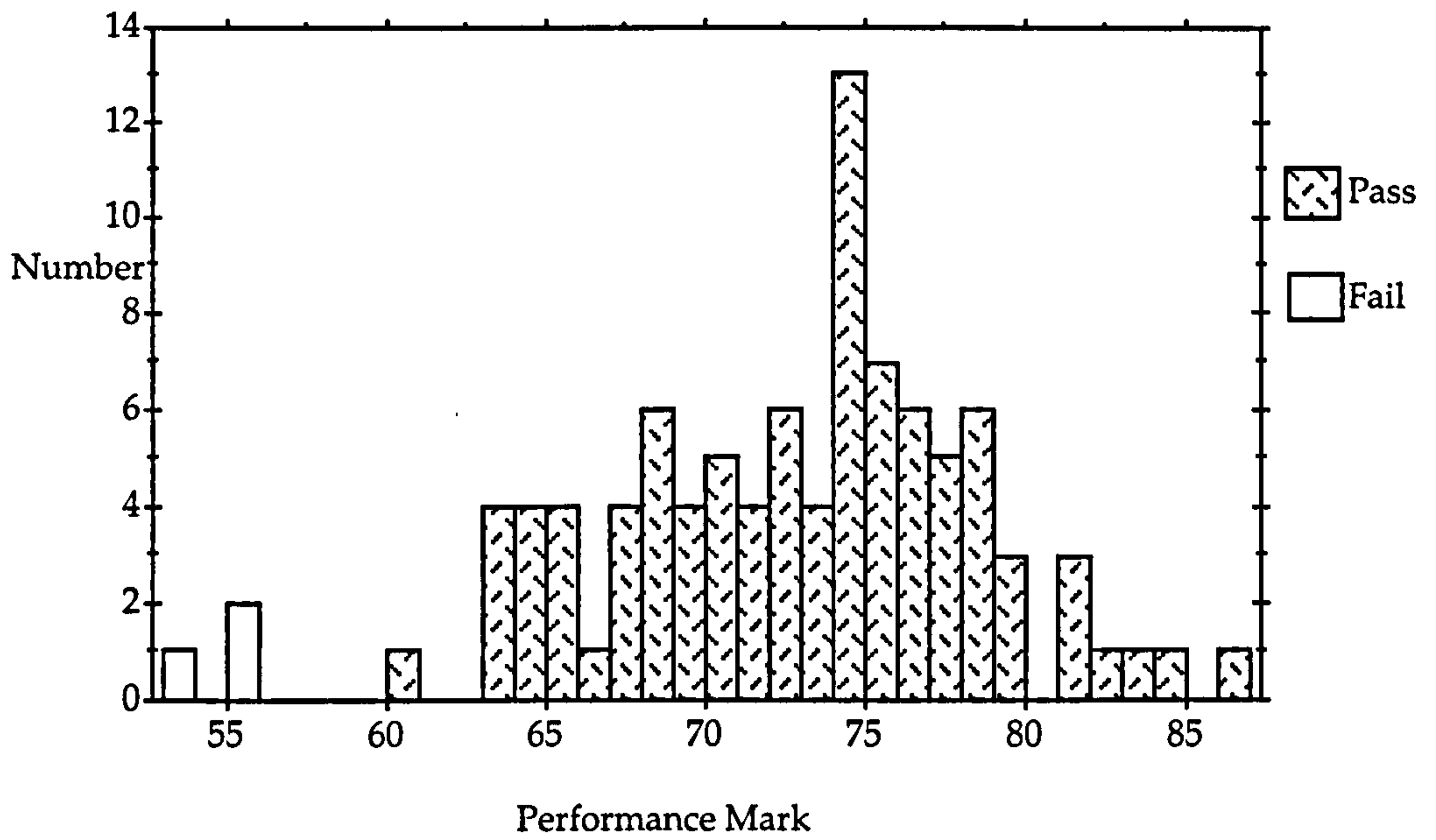


Table 8

Summary statistics of candidates' marks on the prepared performance sub-test

Number:	Minimum:	Maximum:	Range:
97	53	86	33
Mean:	Std. Dev.:	25th %:	75th %:
71.938	6.173	68	76



### **Do Good and Poor Performers Score Significantly Differently on the Aural Sub-Scale?**

A Mann-Whitney U Test reveals that there is a significant difference between good and poor performers in their marks on the aural sub-scale [ $p < 0.05$ ] (see Table 9). The difference in means shows that good performers (mean= 32.5), with a range from 11 to 18 (out of a total possible mark range of 0 to 18), do better on aural tests than do poor performers (mean= 22.5), with a range from 9 to 16. The difference between the means is 10.

For the purpose descriptive statistics, subjects were divided into two groups. Those scoring 11 and below were allocated to the 'fail' group, whilst those scoring 12 or more were allocated to the 'pass' group (12 is the pass mark). The frequency distribution (Table 10) shows that almost all good and poor performers passed the aural test.

**Table 9**

**Mann-Whitney U Test comparing aural test marks of good and poor performers**

Performer Group:	Mean Rank:	U value	P value
Good (N= 27)	32.5	230.5	< .05 *
Poor (N= 27)	22.5		

\* Significant at 95% level

**Table 10**

**Frequency distribution of the aural test pass and failure rates for good and poor performers**

	Pass	Fail	Totals:
Performer group			
Good	27	0	27
Poor	25	2	27
Totals:	52	2	54

### **Do Good and Poor Performers Score Significantly Differently on the Sight-Reading Sub-Scale?**

A Mann-Whitney U Test was carried out to compare the sight-reading marks of good and poor performers (see Table 11). These results show that there is a significant difference between good and poor performers on their marks for sight-reading. The difference in means shows that good performers (mean= 37.1), with a range from 14 to 19 (out of a total possible range from 0 to 21), score significantly better than poor performers (mean= 17.9), with a range from 11 to 18, on the ABRSM sight-reading test [  $p < 0.0001$ ]. The difference between the means of good and poor performers is 19.2.

For the purpose descriptive statistics, subjects were divided into two groups. Those scoring 13 and below were allocated to the 'fail' group, whilst those scoring 14 or more (14 is the pass mark) were allocated to the 'pass' group. The frequency distribution (Table 12) shows that good performers are more likely to pass the test than are poor performers.

**Table 11**

**Mann-Whitney U Test comparing sight-reading marks of good and poor performers**

Performer Group:	Mean Rank:	U value	P value
Good (N= 27)	37.1	105.5	< .0001 *
Poor (N= 27)	17.9		

\* Significant at 95% level

**Table 12**

**Frequency distribution comparing sight-reading pass and failure rates for good and poor performers**

	Pass	Fail	Totals:
Good	27	0	27
Poor	16	11	27
Totals:	43	11	54

### **Do Good and Poor Performers Score Significantly Differently on the Scale and Arpeggio Sub-Scale?**

A Mann-Whitney U Test revealed that there is a significant difference between good and poor performers in their marks on the scale and arpeggio sub-scale [ $p < 0.0001$ ] (see Table 13). The difference in means shows that good performers (mean = 36), with a range from 12 to 21 (out of a total possible range from 0 to 21), do better on scales and arpeggios than do poor performers (mean = 18.3), with a range from 10 to 19. The difference between the means is 17.7.

For the purpose of descriptive statistics, subjects were divided into two groups. Those scoring 13 and below were allocated to the 'fail' group, whilst those scoring 14 or more were allocated to the 'pass' group. Table 14 reveals that good performers are slightly more likely to pass the scales and arpeggios than poor performers. Although the majority of poor performers pass the scales and arpeggios test, those failing the sub-test are almost all poor performers, with the exception being one 'good' performer.

**Table 13**

**Mann-Whitney U Test comparing scale and arpeggio marks of good and poor performers**

Performer Group:	Mean Rank:	U value	P value
Good (N= 26)	36	117	< .0001 *
Poor (N= 27)	18.3		

\* Significant at 95% level

**Table 14**

**Frequency distribution of the scale and arpeggio pass and failure rates for good and poor performers**

	Pass	Fail	Totals:
Good	25	1	26
Poor	22	5	27
Totals:	47	6	53

### **Do Good and Poor Performers Score Significantly Differently on the Overall Examination?**

A Mann-Whitney U Test was carried out to establish whether the overall examination mark is significantly different for good and poor performers. Table 15 reveals that there is a significant difference between good and poor performers on their overall examination mark, [ $p < 0.0001$ ].

The difference in means shows that good performers (mean= 41), with a range from 117 to 140 (out of a possible 0 to 150), do score considerably better on the overall examination mark than do poor performers (mean= 14), with a range from 86 to 116. The difference between the means is 27.

For the purpose of descriptive statistics, subjects were divided into four groups using the distinction, merit, pass or fail criteria of the ABRSM. Table 16 reveals that good performers consistently score in the merit and distinction categories whereas poor performers either pass or fail. The majority of good performers obtained a merit or distinction for their overall examination mark; none of them failed. Conversely, the majority of poor performers obtained a pass in the overall examination, with 3 failing. However, out of 35 candidates who scored a 'merit' for their overall examination mark (see Table 3), only 15 (less than half) were 'good' performers (see Table 16). Additionally, one of the candidates who scored a 'distinction' in the overall examination mark did not reach the criteria used to determine a good performer (see Tables 16 and 3). Conversely, 2 of the good performers only scored a 'pass' for the overall examination.

**Table 15**

**Mann-Whitney U Test comparing overall examination marks of good and poor performers**

Performer Group:	Mean Rank:	U value	P value
Good (N= 27)	41	0	< .0001*
Poor (N= 27)	14		

\*Significant at 95% level

**Table 16**

**Frequency distribution of the overall examination failure, pass, merit and distinction rates for good and poor performers**

		Fail	Pass	Merit	Distinction	Totals:
Performance group	Good	0	2	15	10	27
	Poor	3	24	0	0	27
	Totals:	3	26	15	10	54



### To What Extent are Scores on the Sub-Scales Related to Each Other?

To examine the internal validity of the ABRSM test, the sub-scale marks were correlated using a Spearman Rank Correlation. The correlation coefficients are shown in Table 17.

All sub-tests correlated well or moderately well with the overall examination mark, with the highest correlation (.88) being for the performance sub-test. The lowest correlation was for the aural sub-test (.41). All correlations were significant ( $p < .0001$ ).

Correlations between three of the sub-tests (sight-reading, scales and arpeggios and performance) were all moderate and significant ( $p < .0001$ ), with coefficients of .42 (scales and arpeggios/sight-reading), .44 (scales and arpeggios/performance) and .53 (sight-reading/performance).

Correlations were lowest for the aural sub-test, with coefficients of .37 ( $p < .001$ ) with scales and arpeggios, .27 (not significant) with performance and .17 (not significant) with sight-reading.

**Table 17**  
A matrix showing the correlation coefficients of all the sub-tests and overall mark

	Aural Test	Scale/Arpeggio	Performance	Overall mark
Sight-reading	.17	.42**	.53**	.68**
Aural Test	-	.37*	.27	.41**
Scale/Arpeggio	-	-	.44**	.67**
Performance	-	-	-	.88**
Overall Mark	-	-	-	-

**Levels of Significance:**

\*\* $p < .0001$

\* $p < .001$

### **Do Some Instrumentalists Perform Better Than Others on the Sub-Scales?**

- i). Sight-reading. Table 18 shows that clarinetists and pianists scored the lowest mean marks (14.33, 15.41, N= 72). The oboist, viola and tuba players scored the highest marks (18, 19, 19 N= 3).
  
- ii). Performance. Table 18 shows that the saxophonists and cornetists scored the lowest mean mark (69.5, 69.8, N= 9). The viola player scored the highest mark (79, N= 1).
  
- iii). Scale and Arpeggio. Table 18 shows that the clarinetists and cornetists scored the lowest mean mark (13, 14.2, N= 8). The oboist and violinists scored the highest mean mark (17, 18, N= 5).
  
- iv). Aural. Table 18 shows that the cornetist and saxophonists scored the lowest mean mark (12.8, 13.2, N= 9), with violinists, the tuba player, the viola player, and the oboist scoring highest (15-16, N= 7).
  
- v). Overall examination mark. Table 18 shows that cornetists scored the lowest overall examination mark (112.4, N= 5), with the viola player scoring the highest (132, N=1).

**Table 18**

**Mean test marks by instrument category**

Instrument:	N	S-R:	A. T:	Sc/Arp:	Perf:	Over
Violin	4	15.5	16	18	73.75	121.25
Viola	1	19	15	16	79	132
Cornet	5	16.2	12.8	14.2	69.8	112.4
Flute	6	16.16	13.83	14.5	72.33	116.83
Oboe	1	18	15	17	75	125
Clarinet	3	14.33	14	13	74.66	116.33
Piano	69	15.41	14.17	16.72	71.66	117.87
Voice	3	16.66	14		75	123.66
Saxophone	4	15.5	13.25	16.75	69.5	116.5
Tuba	1	19	16	15	74	124

S-R= sight-reading

A T= aural test

Sc/arp= scale and arpeggio

Perf= performance

Over= overall examination mark

### Do Pianists Score Better Than the Rest of the Instrumentalists on the Aural Sub-Test?

Table 19 shows that pianists scored similarly to other instrumentalists on the aural sub-test. Due to the similarity of mean, a statistical analysis was not carried out.

**Table 19**

**Summary statistics of pianists' versus the other instrumentalist' marks on the aural sub-test**

Instrument Category	Mean:	Std. Dev.:	Minimum:	Maximum:	Range:
Pianists (N= 69)	14.2	1.6	9	18	9
The rest (N= 28)	14.1	1.8	10	17	7

## DISCUSSION

### Summary of Results

The findings reveal that using the Mann-Whitney U Test and descriptive statistics, all the sub-scales discriminated between good and poor performers, although candidate's aural marks were somewhat lower than those for other sub-scales. Indeed, aural marks only marginally, though statistically, discriminate between good and poor performers, unlike the other sub-scales. The aural marks also correlated poorly with the other sub-test marks and overall examination marks. The 'prepared-performance' marks and the 'overall marks' suggest some anomalies, as poor performers can attain a merit. Pianists did not perform significantly better than other candidates on the aural tests.

### Discriminating Between 'Good' and 'Poor' Performers.

The findings reveal that statistically the ABRSM's sight-reading and scale and arpeggio tests do differentiate between relatively good and poor performers. The positive correlation between scale and arpeggio marks and the overall examination mark suggests a possible validation of the scoring system of the scale and arpeggio, and the sight-reading tests. These results also indicate that, musically, the ability to do well on sight-reading and scale and arpeggio tests may well reflect the skills needed in performance. However, one might tentatively draw the conclusion that the aural test may be assessing something quite different from the skills needed for an effective performance, as there is only a low correlation between this sub-test and the other sub-tests.

### Aural performance

All the sub-scales except the aural sub-scale discriminate between good and poor performers reasonably well. An examination of the difference between means for three of the sub-scales shows that for the sight-reading and scale and arpeggio tests, the differentiation between good and poor performers is much wider than for the aural test (the difference in means being 19.2,

17.7 and 10 respectively). Although statistically different, it might be argued that an even greater discrimination is desirable, presupposing that the skills that enable one to do well on the sub-tests ought to be influential in performance. However, the difference between the means for the aural test marks testifies that in absolute terms, there is little discrimination between good and poor performers on their aural test marks. There seems to be a case for suggesting that aural skills, as currently assessed, are not something that distinguishes the good performer. This could be because the ABRSM's tests are badly marked. One might tentatively draw the conclusion that because the pass mark is set so high in the scale, it may not be a reflection of the validity of the tests themselves. Another possible interpretation might be that they do not measure what they ought to measure. However, as we are talking about *relatively* good and poor performers, we would not expect more of them to fail.

There are many variables in the background to this result. We have seen in chapter VIII that teachers may not train aural skills early enough or sufficiently. Furthermore, the definition of aural skills may be too narrow. The ABRSM may be measuring pertinent aural skills but these may not be appropriate for all instrumental groups. For example, in the majority of interviewees in Study One, and the literature, it was suggested that different instrumental groups may rely on particular aural skills to a greater or lesser degree than other instrumental groups. Indeed, there is some evidence to support the view that a performer may reference aural, kinaesthetic and haptic cues that are peculiar to his/her instrument, and further, that the degree to which these are referenced depends upon the specific instrument-domain (Seashore, 1938; Cook, 1996; Stowman, 1996; Brodsky and Henik, 1997). Essentially, Seashore (1938) argues that it is the sensitivity of living in the specific domain of an instrument which dominates the skills that are developed. In particular, interviewees also hypothesised that the aural tests might be biased towards pianists, primarily because they would be more familiar with the timbre of the test stimulus (in this case the piano). However, in the present study, pianists did not perform significantly better on the aural sub-test than any other instrumental group.

Although the ABRSM indicates (in chapter VIII) that candidates seem to attain higher marks on the current aural tests than the previous tests, we cannot be sure what these results tell us. As brass players scored the lowest marks on the aural test in 1995, it might be argued that either brass players are less adept in aural ability or that the skills that the tests are assessing may not specifically address the skills needed to perform effectively on a brass instrument. However, the present study cannot illuminate these issues because the number of candidates for each instrumental group is too small. Likewise, there seem grounds for suggesting that string players might be among the better performers in aural tests. Nevertheless, (to repeat) the number of candidates in each instrumental group is unequal and too small to provide any conclusive evidence. For future research, a larger and more balanced sample for each instrumental group would provide us with more reliable information.

It might be argued that there is a need for a broader definition of aural skills than there is at present. However, it might simply be that teachers need to re-focus their approach to training performance-related aural skills, instead of perceiving it as something to develop at the end of a lesson. As we have seen in Study One, teachers may need to instruct candidates in the relevance, role and application of aural skills in performance; the ABRSM would certainly advocate this perspective. Ultimately, this could result in a movement towards change; that is, a rudimentary modification of teachers' and candidates' views about the purpose and relevance of the ABRSM's aural tests.

#### Other sub-scales

Both the scale and arpeggio and sight-reading tests seem to be good predictors of performance ability. Although good performers consistently did better than poor performers on the sight-reading test and all of the good performers passed the sight-reading test, more than half of the poor performers also passed the sight-reading test. This could mean that the scaling system used for the sight-reading test does not sufficiently discriminate between those that are good or poor at sight-reading. It appears that the sight-reading sub-test could be a good discriminator, since (to repeat) one would expect *most* candidates to pass (but not to do reasonably well, which is

what the Mann-Whitney U Test indicates). For the scale and arpeggio test, good performers do slightly better on scales and arpeggios than do poor performers, yet an extremely good performer can still fail this sub-scale. This once again questions the scaling system used for examining (performers') scales and arpeggios. However, Study One also suggested that some teachers do not prepare candidates sufficiently, or early enough, for scale and arpeggio work, aural work, or sight-reading. The significant variable here is how much preparation they have put in, which is perhaps a consequence of how much importance/time they (and their teachers) attach to the sub-tests. Alternatively, this could be explained in that the poor performers actually included *very* few who failed the performance sub-test, and in relation to this study, must be considered as *relatively* poor performers. If a larger sample of poorer performers was used which produced the same result, then one would need to question the scaling system used for examining scales and arpeggios.

Although the literature is scarce on the skills used in scales and arpeggios, we have seen in chapters IV, V and VI that sight-reading tasks are thought to reveal the musicality of a performer, and are often used as a test for this (Seashore, 1938/1967; Regelski, 1975; Sloboda, 1976, 1985; Pratt, 1990; Davidson and Scripp, 1994; Salaman, 1994; McPherson, 1996). It was also argued that a sight-reading task reveals expressive and communicative capabilities, along with an implicit understanding of how the music works as a functional whole (Sloboda, 1985; Priest, 1989, 1993). Indeed, in chapter VIII, the Senior Representative of the ABRSM reported that the sight-reading test 'lets us see what's really going on'. He explained that this test can discriminate between a

"...poor performance, which is a result of poor teaching, because you can tell that they have a natural ear...[and a ] poor performance that is a reflection of the performer's ability."

Quite how this can be identified is unclear. Perhaps it is because sight-reading, by its very nature, assesses skills that are generic to the instrument (Priest, 1993; Salaman, 1994). This could also be a possible interpretation for the scale and arpeggio test's ability to discriminate between good and poor performers.



This difference in scoring between good and poor performers' overall examination mark needs exploring. Although the overall examination marks do significantly differentiate between good and poor performers, the spread of marks allows for a significant number of 'poor' performers to obtain a merit. Although this analysis concerns *relatively* poor performers, one would still expect to find fewer poor performers attain a merit. However, the evidence broadly supports the view that although the ABRSM's examinations undeniably focus on performance itself, there is also a recognition of other and wider musical issues, the marks for which obviously affect the aggregate. As the ABRSM states, ' the ABRSM's graded examinations...in the context of learning a musical instrument...[ensure] that each element of musicianship is well developed and accurately measured at each grade' (Taylor, 1998, pp.2-3).

The information gained from these results needs to be discussed in relation to the ABRSM's music examinations in the context of learning an instrument. First, it was found that statistically, the overall examination mark does differentiate between good and poor performers ( $P < 0.0001$ ), which is particularly revealing in the light of the above findings. Good performers consistently score in the higher range of classification with either a merit or distinction; none of them fail. Poor performers, however, either simply pass or fail the overall performance examination. Thus, although the three sub-tests tend not to differentiate significantly between the 'musical' aspects of good and poor performance (the spread of pass and fail rate for both groups is relatively similar), perhaps the data is more meaningful when interpreted in the light of the overall classification of the performance examination. That is, if the overall examination mark significantly differentiates between good and poor performers, then the validity of the sub-scales is questionable. The results indicate that the scaling system employed by the ABRSM, for scoring the sight-reading and scale and arpeggio tests, may need further refinement. However, in Study One, the ABRSM proposed that the performance examinations were designed to assess 'the broad business of music education', not just performance.

Although theoretically one can score from 0 to 21 on both the sight-reading and scale/arpeggio tests, and 0 to 18 on the aural test, the pass mark is set high and examiners do not incorporate the

lower end of this scale (see histograms, Figs. 1-5 above). Tables 3- 8 and figures 1- 5 reveal that in the case of each of these sub-tests, the lower part of each scale is under-used. This trend can be seen in higher education, where a mark below 30 is rarely given, and the pass mark is usually 40. Additionally, the 'real' scale of the ABRSM's performance scale is shortened at either end. Particularly for the aural test, examiners assess the overall impression, rather than the individual sub-tests. It would be more desirable for the sight-reading tests, the scale and arpeggio tests, and the aural tests to provide a wider spread of marks so that the difference between good and poor performers is more distinct. One would expect some degree of skewness due to the fact that one would expect to be passing most candidates entered. However, the skewness of these scales ultimately limits the distinction between good and poor performers, but it has already been discussed that the ABRSM has a valid reason for this: one needs to encourage poorer candidates to develop and progress, rather than awarding them a very low mark which may discourage further development. The ABRSM is, and rightly so, sensitive to the needs of those who participate in these examinations: the majority are children. The ABRSM's aim is to encourage children to develop and learn from their performance in the examinations. In order for this to happen, the ABRSM limits the spread of marks to the higher end of all the sub-scales so that relatively poor performers are not discouraged by very low marks.

### **Internal Validity of the Examination**

In spite of the possible reasons for confining marks to the upper end of the scaling system, it was felt that an analysis of the association between all the sub-tests was needed. To this end, a Spearman Rank Correlation analysis was employed to examine the marks on each sub-test. However, the difficulty with interpreting correlations in this context is that it could be desirable to have low inter-test correlations, so one can be sure that one is measuring different skills in each test. However, if the tests purport to assess skills that reflect performance ability and musicianship, then it may not be going too far to suggest that the sub-tests ought to correlate with each other.

Whilst the marks on the aural test are not indicative of how well candidates will perform in the sight-reading test, there is a significant correlation between marks on the scale and arpeggio test and the aural test (.37,  $p < .001$ ), although this remains relatively low. There is a significant positive correlation which shows that performers who score highly on the sight-reading test tend to also score highly in their scales and arpeggios (.42,  $p < .0001$ ). Again, this correlation is moderate, but higher than that between aural marks and scale and arpeggio marks.

These findings suggest that there is some internal validity between the scoring on the aural and scale and arpeggio tests, and the sight-reading and scale and arpeggio tests; the aural test, however, seems to provide little information in terms of validity or in providing insight into performance ability. To explore the results of these three correlations further, in view of the apparent ability of the overall examination mark to distinguish between good and poor performers, all of the sub-tests were analysed in relation to the overall examination mark. Both the sight-reading (.68,  $p < .0001$ ) and scale and arpeggio (.68,  $p < .0001$ ) marks tended to correlate positively and significantly with the overall examination mark, predicting high and low marks on either one of the sub-tests with high or low overall marks. These findings add weight to the findings in the preceding paragraph. However, performers' aural test (.41,  $p < .0001$ ) marks reveal a much lower relationship to their overall examination mark. Furthermore, out of 97 candidates, 14 failed the scale and arpeggio test, 21 the sight-reading test and only 8 failed the aural test. The sight-reading test seems hardest to pass, with aural tests contributing the least information (both scalically, numerically toward the overall mark, and musically). The majority who failed the aural tests ( $N=6$ ), however, received a 'pass' in the overall examination. Conversely, the two candidates who failed the overall examination passed the aural test. At the other end of the overall examination scale, all candidates who received a 'distinction' also passed the aural test. It could be interpreted that the aural test is not a valid or reliable measure of the skills needed when performing effectively. This suggests that the aural test may be assessing something quite different from the skills needed for an effective performance, as there is only a slight relationship between this sub-test and the other sub-tests. Indeed, throughout this study the aural test marks correlate far more weakly with all aspects of the examination than with any

of the other components of the performance examination. This questions the internal validity of these tests relative to performance *per se*. Furthermore, the aural tests assume that mental states are made up of elementary units and this is how the ABRSM tests them. That is, aural skills are assessed as if they exist in a pure form while it is arguable that they only exist in a global, contextual form. The question that needs addressing then is whether, and to what extent, this de-contextualisation is a legitimate approach to assessment.

The ABRSM's aural tests may appear to have face validity; however, for the majority of interviewees (Study One), the aural tests are met with open criticism and thus do not seem to hold face validity with teachers and students. However, the ABRSM which advocates the use of these tests may well be unaware of this perception, and indeed, must think that they have face validity. It is not only desirable, but vital that the ABRSM recognises and addresses these disparate views; for teachers and their students, and wider public relations.

### The role of understanding

A possible interpretation of these results might be explained with reference to the literature on musical understanding. Although it is not known how the individual tasks within the ABRSM's aural test contribute to the overall aural test mark, one explanation for the apparent lack of internal consistency with the other sub-tests could be that the candidate does not associate the skills assessed in the aural tests with performance ability. This might explain why the aural tests only marginally reflect performance ability. Indeed, Study One tends to suggest that this is the case. However, this has many interpretations. For example, it may be that candidates perform poorly on Test D; but what would this then tell us? Although the ABRSM's Test 'D' requires explicit knowledge (where the candidate answers questions about a piece of music played by the examiner), the majority of interviewees in Study One, and the majority of authors, suggest that this 'knowledge' can remain implicit, a sort of 'knowing how'; that is, knowing 'instinctively', without being able to explain. If musical understanding is the objective, different from 'knowing about music', then the ability to use operations in music may be more important than knowing the formal names for them (Priest, 1993).

Both the literature and Study One provide support for the theory that a candidate who cannot understand the relationship between aural ability and the act of performance, lacks 'something'; this lack arguably renders a performance unmusical (Seashore, 1938). However, if the aural tests are assessing musicality, then there would be a more polarised relationship between good, 'musical' performers and those who are not; as we have seen, on the basis of a small sample, there appears not to be. This hypothesis is difficult to test as the ABRSM does not provide specific assessment criteria on each task in the aural sub-test. However, the ABRSM argues that one cannot presume that the prepared pieces are adequate reflections of a candidate's musical performance ability, due to the intense input of the teacher. Indeed, the Board proposes that the aural test responses will indicate whether the performer is merely communicating what his/her teacher has taught him/her to communicate or whether the performer has a real understanding and demonstrable knowledge of musicianship and its transferable skills. From the evidence of the aural test marks, the ABRSM may be correct in this assumption. Indeed, this gives grounds for the Board's inclusion of separate aural tests within the performance examination. However, we must tread cautiously. Whilst accepting this as a valid reason for assessing aural skills in some manner, it nonetheless does not necessarily imply that one needs to assess these skills out of context.

On the other hand, it could be claimed that aural skills, as they are currently assessed and therefore defined, are not paramount to a proficient performance. If the ABRSM's aural tests inadequately reflect performance-related skills, and furthermore, if the candidates themselves do not comprehend the relevance of these skills to performance, then this would account for the questionable lack of validity of the ABRSM's aural tests. Given the literature and the findings of Study One, one could tentatively draw the conclusion that a broader definition of aural skills is needed. Moreover, the musical understanding that is required to accomplish this (arguably the ability to relate and apply performance-related aural skills), should be made manifest through the performance of prepared pieces. In addition, the use of the piano for test-stimuli, and the required sung response, are all factors which contribute to both teachers' and candidates' inability to associate the function and meaning of the aural tests with performance.

If the ABRSM's performance examinations are a valuable measurement of musicality and are to provide vital information for areas that need developing, then all elements of the results need to be meaningful to the teacher and pupil; that is, a guide that indicates potential areas of weakness may help further the cause of performance-related concerns. As Seashore (1938) asserts, 'the bare fact of low rating is of relatively little significance unless the real cause is revealed in the process of organising the measurement' (p.301). The ABRSM's aural test mark may just be a case of poor scaling. However, evidence from Study One and the literature broadly support the view that there is more to it; in any case, the other scales do not suffer so much.

As there is no precise information that can lead to a conclusion about what they do or do not reveal about performer ability, the following study sought to explore alternative means of assessing aural skills. Study Three is an experimental approach to accessing and assessing aural skills. Of particular importance is the context in which these are ascertained. If there is a need to assess aural skills, as the research indicates, then perhaps a performance task would be a more appropriate vehicle for evincing these skills. The following study explores ways in which to do this, essentially through the skills used and made manifest through a sight-reading test. We have seen that the literature, and the ABRSM, view sight-reading as a skill that reveals a performer's musicality. It is also a domain through which specific instrument-related aural skills may be realised. It is envisaged that, if there is a need for a broader definition of aural skills than is currently used, then such a test of 'musicality' may indicate the way forward.

## Chapter X Study Three: The Assessment of Aural Abilities through an Unprepared- Performance Task

### INTRODUCTION

The aim of this study was to design new tests that are based on the criteria for musicianship that have been investigated throughout the thesis, and then to pilot them. Additionally, it sought to explore whether performers from different instrumental groups utilise different aural skills in different ways, and in varying degrees; in other words, whether the demands of different instruments necessitate the mastering of aural skills specific to the instrument-domain. Subjects consisted of forty performing musicians, twenty being pianists and twenty being violinists. These two instrumental groups were chosen, one with fixed pitch and the other with non-fixed pitch, to explore the above hypotheses.

The preceding chapters, Studies One and Two, identified teachers' misgivings about the ABRSM's aural test. Working exclusively to the aural skills as defined by the ABRSM was perceived by many teachers and pupils as a very limited and unhelpful method of developing and focusing aural abilities. To begin this chapter, it is appropriate to redefine the essence of aural ability both through the literature and in the light of the findings for Studies One and Two.

The findings to date reveal that the ability to identify relationships between aural skills and performance proficiency is a key area that needs addressing within teaching strategy and assessment. The majority of interviewees agreed that through the acquisition of relevant musical knowledge, and in conjunction with an understanding of the relationship between aural and performance skill, musicality would be enhanced. This theory identifies a need to either i). review the ABRSM's aural tests with a view to re-educating performers and teachers about the role of aural in performance, or ii). to revise the ABRSM's aural tests paying specific attention to skills that are explicitly related to performance proficiency. The literature and Study One propose

that aural imaging, with the integration of active and discriminative- listening and understanding, evinces musicality. Essentially, this is the ability to transfer the printed pitch to an internal aural image against which the pitch produced can be referenced, monitored and adjusted (Howard, 1982; Sloboda, 1985; Hatfield, 1987; Fowler, 1988; Pratt, 1990). However, interviewees hint that aural imaging is more than this, particularly when it is associated with musicality. A full response involves the ability to use good listening skills plus good technique at the service of communication and 'expressive content'. Harvey (1994) terms this 'musical awareness' whereas Sloboda (1988) stresses this need for self-monitoring as 'knowing what to listen for' (p.101). The literature is however divided on this issue; some argue that this knowledge needs to be explicit, while others assert that this understanding is just as effective if it remains implicit, manifest through one's ability to 'feel'. Study Two also hypothesised that teachers' and pupils' lack of understanding of the role of aural skills within performance relates to the inconsistent success of the ABRSM's aural test results. From the literature and the studies discussed above, it can be argued that aural imaging is a skill that requires the integration of many other aural, cognitive and kinaesthetic skills.

The previous two Studies identified that there may be a need for the assessment of aural skills that are pertinent for individual instrumental groups. This stemmed from the hypothesis that aural skills, as they are currently defined and assessed, may be too narrowly defined and may vary between instrumentalists. More specifically, it might be argued that aural skills encompass not only auditory information but also kinaesthetic and haptic cues. In concrete terms, the degree to which aural imaging is necessary may vary for different instrumental groups. As the ABRSM's aural tests stand at present, there is no room given for the assessment of such skills, except in the sight-reading test itself (on a 'by their fruits ye shall know them' basis). It may be argued that such skills and abilities are assessed by the Board, as other ones may be in performance (such as intonation), yet these are not examined out of the context of performance, whereas other aural skills are.



The validity and reliability of the ABRSM's tests were explored in chapter VI and Study Two. Study Two indicated that there was no significant relation between performance scores and aural test scores. The reason for this may be related to the method of such specific assessment. One of the major assumptions of Study Two was that a good performer must have good aural skills; it is the results in context that matter, not the assessment of skills in isolation. There seem grounds for suggesting that a sight-reading task may be an appropriate way of assessing the skills which the ABRSM's aural tests do not directly assess; this would not only provide the assessment of skills within a performance context, but arguably, would also reveal a performer's musical knowledge independent of their teacher's influence. However, it is acknowledged that the ABRSM's sight-reading test itself may indeed assess such skills and abilities; the subtle, but vital difference is the proposition that a sight-reading task provides an ideal avenue through which to assess these skills directly.

Further to this, it has been suggested that understanding the relevance and the role of aural skills in performance is the key to developing these aural skills, what Fowler (1988) defines as 'ways of thinking and doing simultaneously'. The interviewees in Study One divide understanding into two distinct categories, i). the intellectual, verbalisable knowledge about music, and ii). an inherent, insightful understanding which encompasses 'feel'. However, neither of these definitions is mutually exclusive.

There is mounting evidence to suggest that once aural skills are mastered, they are transferable to other performance situations. For example, the interviewees in Study One assert that if a musician performs without understanding, in terms of how to manipulate and communicate meaning through one's instrument, then 'something is still lacking'; it was suggested that the ability to relate aural skills to performance allows for this transferability. It could also be argued that what is 'lacking' may be a failure of musical imagination. It is therefore proposed that for an effective assessment of aural skills, they need to be examined in their transferable state. It could be claimed that a sight-reading task is a suitable vehicle through which to assess these skills.

To explore the assessment of the above aural skills, a series of tests were designed based on a sight-reading task. Outlined below is an explanation of how these skills are made manifest through such a task, and how they can be assessed.

- **Aims**

1. To develop tests which assess the necessary aural skills identified in Study One. These are:- a) as sense of pulse and rhythm, b) insightful understanding, which can be either implicit or explicit, c) aural and kinaesthetic imaging, d) a sense of 'feel', and e) communication.
2. To test the hypothesis that:- a) an unprepared -performance task will successfully discriminate between good and poor performers, b) an unprepared-performance task will more effectively discriminate between good and poor performers than the ABRSM's aural tests, c) violinists will score higher on Task 2 than pianists, d) presentation order B will be more effective at discriminating between good and poor violinists than presentation order A.

## **RATIONALE**

We have seen, in chapters IV, V and VI, that recent studies have used sight-reading tasks to assess the ability to image aurally. Indeed, Sloboda (1985) claims that sight-reading is the ultimate way of assessing a performer's musicianship. However, aural imaging is not the only feedback process that performers rely upon which can be ascertained through sight-reading. As Priest (1989) found, when interviewing professional musicians, 'for most it is the kinaesthetic sense that supports the aural image in producing the desired sound' (p.185). The opportunity to utilise aural, visual, kinaesthetic, and haptic cues when sight-reading, provides a situation where all instrumentalists should be able to demonstrate a broader range of aural abilities which are pertinent to their particular instrument.

Study One and the literature review revealed that there are some pertinent aural skills underlying performance that are not easily assessable during the performance of a prepared piece, and are not provided for through the current format of the ABRSM's aural tests. The inherent inability within the current examination system to distinguish between the performer as a product of their teacher and the 'real' aural skills grounded within the pupil needs redressing. It is postulated that these 'real' aural skills should be reflected through the performer's ability to transfer and apply these acquired skills to performance situations, other than that of the prepared/taught performance. This, in part, led to the proposal that a sight-reading task may effectively reveal the performer's acquisition and transferability of these aural skills.

A task involving playing a complete short piece of music was decided upon, so that assessment was directly related to performance. The design centred around the assessment of aural imaging, stylistic awareness and 'feel', whilst directly addressing the issues of timbre in that the subject's own instrument was used.

## **DESIGN**

### **Development of Sight-Reading Task**

From the findings of the thesis so far, the following will detail how the aural skills already identified may be assessed through a sight-reading task. Aural imaging will be assessed through the performer's ability to play and adjust to any intonation/pitch, rhythmic, timbral, or dynamic anomalies where necessary. For example, an awareness of intonation or pitch will be reflected in the ability of the performer to manipulate aural imaging and aural feedback, allowing the subject to respond and adjust if necessary. It was intended that this task not only assesses the imaging, but also kinaesthetic and haptic memory. As the sight-reading task is designed to assess skills relevant to each instrumental-domain, this task should be relevant for all instrumental groups. Aural, kinaesthetic, and haptic imaging, as these skills correspond to the appropriate instrument, are also assessed through the subject's ability to locate a notated motivic pattern from the aural

stimulus. This task was worked into the design to further test the hypothesis that aural skills may be domain-specific.

Each subject was given 3 minutes to read through the unprepared stimulus, (in Appendix V) without being able to play through it. This enabled the subject to familiarise themselves with the music, allowing for a reading through of the music and employing any cognitive strategies such as aural imaging. This may be viewed as less liberal than the ABRSM's current procedure, in which the candidate is allowed to try out anything they want during the half-minute preparation time. However, as one of the primary aims of the sight-reading task is to assess the ability to image aurally, playing the music through would contaminate and minimise the discernment of monitoring this process.

Task 1. The subjects were then asked to play through the music, stopping to make amendments to any mistakes they noticed. Here the purpose was to assess the use of aural imagery in relation to intonation, rhythm, and the extent to which the subject is able to adjust such mistakes. Once concluded, the subject was asked to comment on his/her performance. This questioning aimed to assess the subject's ability to monitor his/her own performance in relation to whether it sounded as they had hoped it would sound. The purpose of this questioning was to ascertain the extent to which performers have integrated their knowledge of performance and aural ability. To further this aim, subjects were allowed to identify or demonstrate (in any way) where they thought they had made a mistake, and how it should have been played.

Task 2. The subject was then asked to play through the music a second time, paying particular attention to pulse and rhythm, and to continue playing even when s/he was aware that mistakes occurred. This was to assess a sense of pulse and rhythm, regardless of pitch and intonation. In addition, the ability of the subject to make fewer mistakes should provide evidence for the use of the instrument-relevant skills such as aural imaging and kinaesthetic feedback. Subjects were then asked to comment on their performance of this task; the assessor particularly used this questioning session to clarify the reasons for possible disruption of pulse and/or rhythm, e.g. if

the pulse was interrupted, the subject may have encountered rhythmic or pitch problems; if this was a plausible mistake then the assessor did not penalise the performance as the aim of the task was to maintain a sense of pulse and rhythm.

Task 3. Understanding and knowing were assessed through stylistic performance of dynamics, phrasing and articulation, and through responding to a set of questions relating to the piece after subjects have played it. For example, subjects were asked questions concerning the style of the piece and the reasons why they performed it in a certain way. Subjects were also provided with the opportunity to perform the music in a different style, or improve upon their previous performance. In conjunction with this, 'feel' was assessed through the performer's use of interpretation and expression, sense of pulse and of rhythm, and through the overall 'musicality' of the performance. An additional purpose to this design was to examine the degree to which subjects' increasing familiarity with the musical material of the complete piece affected their performance as the study proceeded. Therefore, the projected classification tasks needed a composition providing musical material that was clearly and simply structured with motifs and melodies that repeated and developed, concluding with a return to the opening section.

Task 4. The ability to relate musically and communicate to another player was assessed through an ensemble task. This task was placed last so that the subject would have gained some familiarity of the music, allowing attention to be focused to some extent on the other player.

#### Scoring system and criteria

*Task 1.* This task was introduced to explore the subject's ability to utilise aural imagery and feedback. Because the subject had not played the music previously, the ability to correct mistakes whilst playing provided some information that the 3 minute preparation had led to effective aural imaging. However, if there were no mistakes it would be difficult to come to a conclusion. The assessor would either award full marks to the subject's sight-reading experience/musicianship/aural imaging, or she would conclude that there was a flaw in the task.

To gain more insight into this, the questioning at the end of this task enabled the assessor to establish the subject's perceptions on his/her performance.

*Task 2.* The subject was asked to play the music through, maintaining a sense of pulse and rhythm. If rushing occurred, questions were asked directly relating to the pulse and/or rhythm. For example, 'what happened here?', the assessor indicating a 'problem' passage after the second performance.

*Task 3.* To establish expressive capabilities and a 'feel' for the music, the subject was again asked to play the music through. At the end of this task, questions were asked about interpretation.

*Task 4.* This task was designed to assess a sense of ensemble, whilst also ascertaining communication skills.

### Scoring

*Task 1. Aural imaging.*

0= no correction of evident pitch error

1= recognition verbally of error, but no evidence in performance

2= slight evident of correction in performance, but no verbal realisation

3= verbal and performance evidence of error correction (inconsistent)

4= verbal and performance evidence of error correction (consistent), and for an error-free performance.

### *Verbal response*

A score of 1 indicates that the subject verbally acknowledges that there were mistakes in his/her performance but was unable to locate these problems in any demonstrable way. For example, there was no evidence of correction during the task.

A score of 2 indicates that the subject does correct mistakes during performance but this is inconsistent. The number of mistakes was not fundamental to the scoring of this task, the amendment of them was. To this end, the score of 2 was allocated to those subjects who progressively corrected intonation/pitch mistakes but were unable to do so initially. For example, initially subjects consistently played a C natural instead of a C sharp; as they continued to play this mistake was recognised and the subsequent adjustment was made. And further, no verbal realisation or recognition of the other mistakes was made. For example, an F natural was played in bar 11<sup>1</sup> instead of an F sharp, likewise in bar 15<sup>3</sup>; this was neither commented upon by the subject nor were they able to indicate this mistake within the music itself.

A score of 3 indicates that the subject corrected his/her performance and was able to verbalise about it (e.g. 'I played that wrong there...I was expecting it to go up...but it didn't'). However, this realisation was inconsistent in that similar mistakes went unnoticed.

A score of 4 : as 3 but with the vital addition of consistency.

#### *Task 2. Pulse and rhythm*

0= no sense of either pulse or rhythm

1= sense of one but not the other

2= sense of both (inconsistent).

3= sense of both (consistent)

#### *Verbal response*

If the subject played too fast, causing the pulse to be disrupted, then the assessor would question what happened and then assign the appropriate score. For example, if the subject identified a difficult rhythm to play, due to the technical problems encountered, the troublesome passage would upset the subject's sense of pulse. A score of 2 would be accredited if the interruption was a result of problems. In this situation, the subject would be asked to play that particular extract once more to verify the designated score.

### *Task 3. Expression*

0= no attempt at expression, or sense of 'feel'.

1= some attempt at expression, but inconsistent and no verbal awareness of style.

2= adequate expression but when questioned about interpretation, no verbal realisation of style.

3= Good expression and musicality. Insufficient evidence of verbal awareness.

4= As score 3 but with sufficient verbal awareness of style.

### *Criteria and verbal response*

A score of 0 was allocated when the subject played through the music once more without any additional attempt at dynamics, phrasing or 'musicality'.

A score of 1 was allotted when the subject was clearly making an effort to add expression, i.e. through adding accents and stress to notes, but this was ineffective and inappropriate.

Additionally, the subject was unable to show any awareness of purpose.

A score of 2 was allotted when the subject included adequate expression, such as improved phrasing, but was unable to say why s/he chose to play it that way.

A score of 3 was allotted when the subject showed a sense of musicality and expression but was verbally uncertain as to the style or period of the piece.

A score of 4 was allotted when the subject showed both musicality and a verbal understanding of his/her intentions.

### *Task 4. Performance ensemble*

0= no evidence of communication with pianist, either visual or audible.

1= some evidence of communication but this hindered the performance. For example, the performer would lose his/her place or interrupt the performance.



2= evidence of good communication and a sense of ensemble performance.

### Presentation order

The order of the presentation of these tasks was important. The aural imaging task was placed first to establish the performer's imaging ability without previously having heard the music stimulus. Task 2 was so placed because the subject should have corrected some of the mistakes and would be more readily able to play through the music without stopping. Task 3 was so placed because by this stage, the subject would have become more familiar with the music and is more likely to respond to performance directions than if this task was presented first. And finally, Task 4 was placed at the end of the sight-reading task because the ability to communicate with another, using an unseen piece of music, should develop in parallel with familiarity. It should be noted that subjects played from the *whole* work (i.e. their line plus the accompaniment) so that they could perceive the relationships between the two parts before, and whilst, attempting to put them together.

## PILOT STUDY

### Subjects

A sample of 5 subjects were chosen, all of whom had taken Grade 5 of the ABRSM's performance examination during the Autumn of August 1997. The sample was chosen from 2 local teachers whose pupils were violinists. Teachers were asked to select pupils who had performed relatively well in the ABRSM's performance examination and whom they considered to be 'good, well-rounded' performers.

The assumption in using Grade 5 subjects was based upon the principle that the ABRSM's tests are designed to assess musicians progressively. If the early tests are sound, then the development of other tests, if piloted successfully, could then be applied to other Grades. Grade 5 is sometimes considered to be the pivotal Grade from which performers either continue to develop or give up

their instrument. Indeed, by the time candidates reach Grade 5, they are expected to possess technical facility, basic stylistic understanding and an understanding of how aural skills relate to performance ability.

### **Task Stimuli**

For the Grade 5 violinists, J.S.Bach's 'Gavotte I' from his Suite No.3 in D, BWV 1068, was chosen, from one of the ABRSM's Performance examination Grade 3 lists(in Appendix V). This was chosen because Bach's style of music is probably familiar to most Grade 5 violinists. The music exists in a simple binary form, with typical 'balancing phrases' in which dynamic 'echoes' might be appropriate, threading their way through related keys. The key signature is D major which Grade 5 violinists would be accustomed to. The piece consists of a short melodic motif which is repeated and varied upon.

### **Procedure**

The assessment took place with the researcher and pupil in the examination room (the subject's usual teaching room). An informal chat between the assessor and the subject ensued with the objective of setting the subject at ease. The assessor then explained the purpose of the study and outlined the tasks to be taken. The verbatim instructions were as follows:

***Task 1.** First, I will begin by showing you a piece of music. I'll then give you 3 minutes to look over and read through the music. It's important at this stage that you just read through the music first without attempting to play it. Would you like to ask me any questions? Do you understand what you've got to do?*

Each subject was then given time alone to read through the music. The assessor left the room at this point. Three minutes were allocated for this task.

After 3 minutes, the assessor re-entered the room. The assessor then generally enquired if s/he was ready to begin. The following instructions were then delivered:

*Would you like to play through the music for me? If you notice any mistakes, I'd like you to correct them immediately. Don't worry about stopping and starting, just take your time. Do you understand what I've asked you to do? OK., when you're ready...*

When the subject had finished playing, or discontinued the task, the assessor thanked the subject. The following questions were then asked:

*How do you feel about that? [were you pleased with your performance?...did you play well, or make mistakes? Can you show me where you went wrong...why was that, what did you do?].*

**Task 2.** *This time I'd like you to play the music all the way through without stopping to correct yourself. Just try to keep going. Always try to keep a steady tempo and rhythm. OK., when you're ready.*

**Task 3.** *Now I'd like you to add a little bit more to your performance. Could you play through it again please, but this time try to respond to performance directions and interpret the music...play it how you feel it should be played.*

When the subject had finished playing the assessor thanked the subject and asked the following questions:

*Are you happy with that performance? Could you tell me why you played it like that? What sort of style were you playing it in...Could you have played it differently? What overall feel did you get from the music i.e. what period, what form.*

**Task 4.** *Finally, I'd like you to play through the music one more time, but this time with the accompanist. While you are playing, I'd like you to try to communicate with the accompanist...look at him to make sure*

*you are playing together and use the music to communicate what you want to do. The accompanist will bring you in.*

At the end of the 4th task, the subject was debriefed and thanked for his/her time and valuable information.

The subject was free to interrupt the assessor at any point during this dialogue. The subject was asked if s/he had understood the purpose of the tasks and had understood what was required of him/her during the tasks; when the answer was positive the study was able to begin. The assessor stressed to the subject that s/he could ask any questions throughout the procedure, making sure that the subject understood what was asked of him/her. After every task instruction the subject was asked if s/he understood the task objectives. The assessor scored subjects' responses at the end of each task. It should be noted that this dialogue is here for the purposes of piloting the tasks only. This verbal interaction would need to be minimised in real life where the examiners would have to assume that candidates had been sufficiently well prepared by teachers to eliminate most of it.

## FINDINGS

During the implementation of this pilot study, it became obvious that from Task 1, subjects were disturbed by interruptions made in their performance to correct mistakes. For example, the most common first mistake was playing the C sharp in bar 2<sup>4</sup> as C natural. Three of the 4 subjects who made this mistake corrected it, but in doing so they lost their sense of pulse and foundered in the following 2 bars. However, as this first task was designed to assess the ability to image, monitor and adjust to feedback then these 3 subjects demonstrated this. Only one subject was consistent in redressing his mistakes, whilst 3 were inconsistent in this and one subject did not make any sign of adjustment. One of the problems seems to stem from the trill in bar 4<sup>1</sup>, where 3 out of the 5 subjects misinterpreted the trill and continued to do so throughout the piece. Since there is more than one interpretation of a trill, including simplification to a mordent, or even omitting

altogether, subjects were not marked down if the interpretation was ambiguous. The trill was only seen as problematic if it caused loss of rhythmic consistency. Perhaps in the 'real' world of examinations, it would be better not to include Baroque ornamentation at this stage. This task may have identified those subjects who were effectively using aural imaging although one can imagine that if a subject had played the piece through with correct intonation, and without needing to adjust, one cannot assume that this subject possesses effective aural imagery. Indeed, trying to assess effective aural imaging skills would be perhaps more relevant if the subjects did not interrupt their performance but commented on this when they had completed playing. As it was, the frequent interruption left it difficult for the assessor to comment adequately on the performance. The potential problem of remembering where subjects had made a mistake was the reason for the assessor examining this skill as it was assessed. The assessor felt that this task was somewhat inadequate at assessing the desired skills.

Task 2 revealed a better response. Although the subjects were specifically asked to maintain continuity and a regular pulse, 2 out of 5 of them disrupted their performance from the difficulty in interpreting the rhythm of the trill previously mentioned. The rushing and disruption of pulse and rhythm at most of these trill bars made it difficult for the assessor to identify a sense of rhythm and pulse. Two of these subjects 'rushed' the trill and the succeeding 2 quavers, disrupting both the rhythm and the pulse of bar 4 and bar 5. When questioned specifically about this passage, 4 subjects commented that they were unsure of how to play the trill but felt that they had played the rest rhythmically correctly. In bars 16 to 17, 3 of the subjects seemed to lose their sense of pulse, with little sense of direction. This remained unacknowledged by the subjects. Indeed, at this second time of playing the extract, only 1 of the 5 subjects seemed to possess some knowledge or 'feel' about the direction of the piece at that point, in that momentum was consistent with phrasing. Task 1 may have unnerved them, leaving subjects somewhat disorientated as to whether to continue playing or to correct mistakes as they went along. Subjects still tended to correct mistakes which made it difficult to detect accurate pulse or rhythm. Indeed, the task of assessing pulse and rhythm simultaneously seems to be a little naive; disruption of either will affect the other.

In Task 3, the trill still seemed to create technical problems for 2 of the subjects. To this extent, it may have been expedient for the assessor to demonstrate how the trill should be played (or even allowed subjects to omit it) as this technical facility was not meant to be assessed. In Task 3, all subjects tended to play the piece as they had in Task 2, with little change in expressive features, such as dynamics and phrasing. Four of the 5 subjects began the piece by adhering to the dynamic marking but as the piece progressed, little in the way of dynamic change was noted. When questioned about their performance, only 1 subject was able to adequately discuss the style of the music: 'It's a bit like Handel'.

Task 4 seemed to yield more positive results. Subjects were evidently more relaxed at playing with a pianist. The performances were more committed and possessed a sense of authority. However, 2 of the subjects played the piece through only indicating or looking at the accompanist at the beginning and at the end of the piece. Of the remaining three subjects, 2 disrupted the pulse at the double bar, apparently waiting for the pianist to bring them in, and 1 was unable to keep time with the accompanist at bar 11<sup>1</sup> and 12<sup>1</sup>.

With reference to the scoring system, its implementation during the tasks became too fussy and confusing, due to the number of scores to choose from and the very specific, yet subtle, criteria used. The score range and criteria used to meet this assessment were too elaborate to apply in reality. The difference in the range of scores for each task became meaningless as the assessor progressed, unable to adequately score the distinctions between verbal responses. Indeed, the problem with using these scales assumes that the examiner is correct. For example, can we rate, rightly or wrongly, whether someone inwardly 'feels' the music? Although this may be unnecessary, as it should be evident through the subjects' display of pulse, rhythm and expression, measuring this independently of all other qualities caused problems. However, the element of questioning did provide some valuable information. If the assessor was unsure of the subject's performance in the task, then asking for verbal recognition made it possible to confirm the result or add to the aural and visual evidence. Evaluating verbal recognition in relation to performance evidence can be somewhat misleading. The scoring system tends to assume that

those who can verbalise about their performance are more able to apply transferable skills than those who cannot. One cannot assume that this is the case.

This exploratory study had some value in using a sight-reading task to examine aural skills, yet as the task stood, there were many modifications needed. First, the task needed to be clearly defined for the performer, making sure that a misconception of a task would not lead to an inappropriate response. The pragmatics of a varying scale system needed addressing. To this end, the following study was designed.

## MAIN STUDY

### Design

#### Design of revised tests

As a result of the previous findings, the tasks were revised. Its terminology was changed from that of a sight-reading task to an *unprepared-performance task*. It was felt that the label sight-reading was misleading to both the subjects and the assessor; ultimately, although based on the skills used during sight-reading, the label of an unprepared-performance task was considered as a more appropriate and less deceptive title. The other most significant difference between the two designs was the development of an 'embedded melody task'. The 'embedded melody task' refers to a specific motif or melody located in the musical text which is then played in isolation. The task is to identify where that particular melody is located. The revision of the previous tasks were as follows.

The rationale for varying test presentation order is similar to that of the pilot study. That is, not all instrumentalists may use the same aural skills to the same degree. For example, a violinist may use intonation to 'bend' pitch at an expressive climax, whereas a pianist does not have this means available; alternatively, a pianist may use finger pressure. The rationale for using violinists and pianists is that aural skills should be markedly different, due to the piano being a

fixed-pitch instrument whereas the violin is variable. Also, it is arguable that pianists do not use, or perhaps need, the use of aural imaging as markedly as violinists. Finally, the comparison of these two instrumental groups provided the greatest availability of subjects. The aim was to evaluate the tasks, and through the presentation order, to explore the hypothesis that pianists rely on aural imaging to a lesser extent than violinists.

The embedded-melody task consisted of a 2 bar phrase selected from the music stimuli. This is, essentially, a variation of the main theme in the piece and was selected because of its variation in pitch, rhythm and contour. This task was used as the control for the study, achieved by manipulating the presentation order of the tasks. Using the presentation order as a control, it should become clear whether aural imaging is dependent on first playing the music through or whether subjects can identify it upon first hearing it played. Those who use aural imaging should be able to locate and identify the 'embedded melody' whereas those who cannot effectively image will be unable to locate it.

### Materials

The same music for violinists as in the pilot study: J.S.Bach's 'Gavotte I' from his Suite No.3 in D, BWV 1068 from one of the ABRSM's Grade 3 lists. This was chosen because Bach's style of music is probably familiar to most Grade 5 violinists. For Task 2, bars 14<sup>3</sup> to 16<sup>4</sup> were chosen because the main theme was developed and varied, providing pertinent information for the subject to discriminate between these bars and those of the main theme (see Appendix V).

For the Grade 5 pianists, Bartok's 'Round Dance No.17' was chosen from one of the ABRSM's Grade 3 list for pianists (in Appendix VI). This was chosen for a variety of reasons. First, it is generally accepted in music that one's sight-reading ability is roughly two Grades below their current grade ability. Having explored many Grade 3 pieces used by both Trinity and the ABRSM, Bartok's piece was chosen specifically because of its content, length and musical structure. There is much simple repetition in this piece yet varying underlying harmonic



structures. For Task 2, bars 11<sup>1</sup> to 12<sup>4</sup> were chosen. This extract contains the main theme whilst varying the bass line enough to be differentiated from the opening bars (see Appendix VI).

These two pieces of music were chosen for their similarity in form and content, both consisting of a main motif and its variations with transitional and developmental sections. The cue references (or embedded melodies) are essentially located within the thematic motifs and are clearly differentiated by the corresponding composers on the basis of their rhythmic and melodic organisation. Both cues are first heard at the beginning of the piece; it spans 6 measures of Bach and 8 measures of Bartok. None of the musicians reported having ever played or heard the music previously. This was particularly important to maximise the possible presentation order effect.

#### Presentation order

Half of the subjects were presented with Task 2 first and then with Tasks 1, 3 and 4. The other half of the subjects were presented with Tasks 1, 2, 3 and then 4. These groups were allocated to one of two orders of stimuli presentation, maintaining an equal number of good and poor performers (as credited by the assessor) within each group: either order A or order B. The rationale for the presentation order was that the ability to aurally image would discriminate between good and poor performers on Task 2.

#### Subjects

A representative sample of 40 subjects was chosen, 20 pianists and 20 violinists. The sample was generated by 15 teachers from the West Midlands, West Yorkshire and Leicestershire, each selected because they are listed in the 'ISM register of professional private music teachers' as teaching either the piano or the violin or both; others were teachers who had been interviewees in Study One or were specific professional musicians known by the researcher. All pupils had taken Grade 5 of the ABRSM's performance examination within the last year. The subjects were chosen by their teachers. The teachers were all originally contacted by telephone and those who agreed to participate were sent a personalised letter confirming suggested dates for the study to take place. The researcher and teachers discussed the issues surrounding the criteria used for

evaluating an effective performance that had emerged from Study One. When the teacher had understood and agreed with the selection criteria, which were identified in Study One, teachers were then asked to allocate their pupils to one of two groups: as either good performing musicians or poor performing musicians. Teachers were specifically asked to choose subjects who, in their view, were either good or poor performers. Information was gathered regarding any other instruments the subject played, whether they enter examinations and if so, which Board, and what, if any, specific teaching methodology teachers referred to.

Subjects were firstly asked to perform a prepared-piece of their choice from which was made an independent assessment of performance ability (either as good or poor performers) by the assessor. The criteria for an effective performance, which were identified in Study One, was used. Prior to the assessment taking place, the assessor coded the subject information sheets so that during the assessment, the assessor was not informed about the group allocation of the subjects, i.e. they were assessed 'blind'. This was to provide a separate qualitative rating of good or poor performers for the assessor. This enabled a comparison of teacher and assessor opinions on the rating attached to each subject and therefore, to each group. These were compared to ascertain whether the two independent assessments of subjects' performance groups were equally matched, to increase confidence in the validity of the difference between good and poor performers. Out of 40 subjects, one subject's performance ability was disagreed upon.

### **Procedure**

Each subject was examined in either their own home or that of their teacher, with testing time lasting approximately 25 minutes. After the performance of the subject's chosen piece, they were given the unprepared-performance task with the assessor scoring subjects' responses at the end of each sub-task.

**Task 1a.** Each subject was given 3 minutes to read through the unprepared stimulus, without being able to play through it. This enabled the subjects to familiarise themselves with the music,

allowing for a reading through of the music and employing any cognitive strategies such as aural imaging. The subject was then asked to play through the music paying particular attention to pulse and rhythm, and to continue playing even if mistakes occurred. This was to assess whether a sense of pulse and rhythm were existent, regardless of pitch and intonation.

Task 1b. Subjects were then asked to comment on their performance on this task. This was to assess the subject's ability to monitor his/her own performance in relation to whether it sounded as they had hoped it would sound. This also enabled subjects to identify or demonstrate where they thought they had made a mistake, why and how it should have been played. This task was designed to assess their aural imaging, monitoring and responding to aural/kinaesthetic/haptic feedback. Essentially, this questioning was to assess the subject's understanding of his/her performance.

Task 1c. Subjects were then asked to identify which style the piece more closely resembled when compared to pieces prepared or performed previously in their musical education. They were asked to give reasons for their choice. This was to ascertain the subject's knowledge and awareness of the context and style of the piece. The rationale behind this was to assess the subjects' ability to compare and contrast existing musical knowledge with the music they have in front of them. It was intended that this would provide information about the subjects' learned skills and knowledge as a transferable skill. Subjects could either name, play, or sing any aspects they wished to highlight, indeed any means of explanation or indication was encouraged. This was stressed so that the subjects' were not limited to a specific means of communicating their musical knowledge or of highlighting their mistakes.

Task 2. Subjects were asked to identify an extract from the passage they had just played by reading the score while the assessor played the extract through, on either the piano or violin as appropriate. This extract was played twice so that the subject could be reminded of the stimulus to be able to reference it to the music and his/her instrument, through imaging, kinaesthetics or haptic cues. If the subject was unable to detect the passage on the second time of hearing it in

isolation, then the subject was encouraged to replay the whole piece of music and stop when the passage had been identified. This was to help the candidate recognise and identify the passage and its relationship to the piece, comparing aural cues with external monitoring and referencing. It is important to stress that this exercise was included because previous research does not indicate whether aural imaging need necessarily occur prior to hearing the stimulus. It should also act as encouragement for the performer to enable them to continue in a relaxed environment.

**Task 3.** Following this task, subjects were then asked to play through the piece again, but this time with expression and trying to play the correct notes. They were given the opportunity to comment on this performance following their rendition. Again, this commentary was encouraged so that any weaknesses in the subject's performance could be freely identified and discussed, providing additional information about their aural skills as opposed to any technical difficulties.

**Task 4.** Violinists played the piece through with the piano accompaniment. The subjects were asked to try to communicate musically with the accompanist. The pianists were asked to play through the piece with the aim to communicate as much expression as they could. These tasks were intended to reveal subjects' ability to maintain a sense of ensemble (for violinists), communication and a musically expressive performance.

### **Scoring**

**Task 1a.** 1= poor rendition with rhythm, pulse and pitch incorrect

2= good rendition with either pulse or rhythm disrupted

3= good rendition with pulse and rhythm largely accurate

**Task 1b.** 1= showing no awareness of accuracy and mistakes

2= showing some general awareness of accuracy and mistakes but unable to be specific

3= showing awareness of accuracy and mistakes (in any manner)

### *Verbal Responses to 1b*

A score of 1 was allocated when subjects showed no realisation of accuracy or mistakes. For example, one subject remarked that their performance 'went ok.' when it was clear to the assessor that the task provided many problems for the pianist. When asked if they thought they had made any mistakes, the subject replied that '..I probably didn't phrase it quite right but...no, it went ok.' when it was clear it did not. This subject made rhythmic mistakes throughout the piece without any apparent awareness of this. A violinist commented that 'it didn't feel right in this bit [indicates middle section, bars 10<sup>3</sup>- 14<sup>2</sup>]...it just didn't make much sense', which was shown through lack of phrasing, direction and insecure intonation. Although these comments may indicate that the subjects were aware of their mistakes, the lack of a sense of direction and pulse, with little demonstrable understanding of how the piece is structured, seems to indicate that the subjects really did not know or understand what they were doing.

A score of 2 was allocated when the subject was aware of his/her mistakes but when questioned about them could not be specific. For example, one subject reported that 'it wasn't too good...couldn't get the notes right...it kept changing key [indicates accidentals]'. Here the pianist noted that it was during the 'middle section', bars 8<sup>4</sup> to 10<sup>4</sup>, that he/she went astray but was unable to indicate the specific notation or rhythms that were incorrect. A violinist reported that their performance was '...not too good...made mistakes', indicating the trills in bar 1, 2 and 4. The subject also commented that they had forgotten the key which was probably because 'I stopped', before continuing at a slower, more amenable pace. However, the subject did indicate the pitches and rhythms that caused problems which is the reason for allocating a score of 2. The apparent understanding of what the subject was doing provides the rationale for allocating a score of 2. Clear indication of problems was identified but little attempt was made to amend these.

A score of 3 was allocated when the subject played correctly or incorrectly, with the ability to identify precisely his/her mistakes or difficulties. For example, one subject commented that 'I'm quite happy with it...I forgot the F\* [indicates first line] but remembered it after that...It was ok.'. This clearly shows that the subject was aware of the inaccuracy of key and quickly made

amendments to his/her faulty pitch relations. A violinist commented that their performance '...was alright...but I ran out of bow [indicates bar 14]...my trills were a bit funny'. The performance as a whole was in tune and possessed a sense of pulse and rhythm. There were a few slips with maintaining bow length but this performance showed awareness and understanding.

*Task 1c.* 1= incorrect identification of style of piece

2= correctly identifying style of piece but being unable to show why

3= correctly identifying style of piece, in relation to previous prepared or known pieces, and being able to give reasons which show an understanding of this choice

#### *Verbal Responses to 1c*

The score of 1 was allocated to those who did not exhibit any transfer skills in relation to the style or genre of the music. For example, most frequently subjects would report that they did not know: 'it's like...er strange...I don't know'. A violinist reported that they simply did not know, even when the assessor helped the subject by specifying rhythmic similarities.

The score of 2 was allocated to two subjects who could correctly relate the music to other pieces they had played or to a particular style but who could not give or demonstrate an explanation for this. For example, one subject replied that 'it sounds modern...it just does' but could not indicate the reasons for this. A violinist remarked that '...it could be Romantic or Baroque...I suppose you can play it any way'. If encouraged a little further, this subject may well have provided an answer worthy of a score of three. Indeed, the scoring of 2 did cause a few problems during assessment because the assessor was uncertain whether the subject knew implicitly how the music should be played, i.e. they had 'feel' for it, or where they were guessing. It was anticipated that Task 3 would clarify this ambiguity through the subject's expression of musicality and/or feel.

The score of 3 was allocated to those subjects who correctly identified the style/genre of the piece and were able to give reasons for this. For example, one subject related that 'it sounds like it

could be Bartok...or someone like that'. However, this subject did not give reasons other than 'knowing;' that it sounded like Bartok. I felt that this in itself warranted the score of 3 because the subject must have possessed some transferable skills of knowing and realisation to be able to provide this answer. This can be referred to as the type of knowledge that has been previously discussed in chapters IV, V and VI, that of implicit understanding. Indeed, this particular subject displayed a sound sense of pulse and 'feel' when he performed Task 3, promulgating the evidence of an inner musicality. A violinist remarked that 'it sounds like the Handel I like playing [the subject plays some memorised music which does indicate Handel]...because of the rhythm [indicates grace notes] and nice scrunches'.

*Task 2.* 1= incorrect identification

2= identifying the correct melody but inaccurate harmony. The subject realises it's not quite right and finds it on playing

3= identifying correctly the passage

*Task 3.* 1= poor/adequate rendition with no awareness

2= adequate rendition and verbal commentary shows awareness of this

3= good rendition and verbal awareness correlates with performance

*Task 4.* 1 = poor sense of communication and sense of performance

2= adequate communication but not consistent

3= good communication and sense of performance

The total possible score ranges that subjects can attain on the tasks is from 6-18.

## RESULTS

The total possible score on the tests was 18 for both pianists and for violinists. The data were analysed using ANOVA<sup>1</sup> to compare good and poor performers' scores on each task and between violinists and pianists. These analyses were carried out to assess the ability of the tasks to differentiate between good and poor performers. The comparison between violinists and pianists was to examine the hypothesis that the two instrumental groups may use aural skills to varying degrees. A comparison between good and poor performers was additionally made using Frequency distributions. ANOVA was used to test for significant differences between the two performance groups using numeric data. However, given that there are only three levels of scoring, Frequency distributions are used as descriptive statistics to show possible trends which may predict levels of significance if the sample was bigger.

Table 1a shows the mean of subject's scores on each task and under both presentation orders.

Table 1b shows a comparison of mean scores on the ABRSM's aural test and the mean scores on the unprepared-performance task. It can be seen that the unprepared-performance tasks discriminate somewhat better than the ABRSM's aural tests.

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<sup>1</sup>. A Two-Factor ANOVA was used, instead of the non-parametric equivalent, the Kruskal-Wallis test, so that possible interactions between the scores of each experimental condition could be examined. Given the reasonably high number of subjects, and that a Kruskal-Wallis test showed similar main results to those revealed in the above analysis, a Two-Factor ANOVA was justified.



**Table 1a**

**Mean of subjects' scores on each task and under both presentation orders**

Group	Order A					Order B				
	GP	PP	GV	PV	X	GP	PP	GV	PV	X
	1a	2.4	2.2	2.6	1.8	2.2	2.6	1.8	2.8	2.2
b	2.6	1.4	2.8	1.4	2	2.8	1.2	3	1.6	2.1
c	2.8	1.4	3	1.6	2.2	3	1.6	3	2	2.4
2	1.8	1	2.8	1.8	1.8	1.6	1.2	2.8	1.4	1.7
3	2.6	1.8	2.8	1.8	2.2	2.8	2	2.8	1.4	2.2
4	2.4	1.6	2.8	2	2.2	2.6	1.4	2.8	1.8	2.1

GP= Good pianists

PP= Poor pianists

GV= Good violinists

PV= Poor violinists

**Table 1b**

**Comparison of mean scores on the ABRSM's Aural Tests and the Unprepared-Performance Task between good and poor performers**

	Performance Group:	Mean total scores:	Mean difference:	Possible total:
ABRSM	Good (N= 27)	14.59	.81	18
	Poor (N= 27)	13.78		
P/Task	Good (N= 20)	11.48	1.63	18
	Poor (N= 20)	9.85		

### 1). Good and Poor Performers and Their Responses to Task 1a

Using the scores for all four groups, a two factor ANOVA was carried out to compare the scores on Task 1a. Table 1 reveals that there is a significant difference between good and poor performers [ $F(1, 36) = 15.1, p < .0005$ ]. Table 2 shows that the highest mean scores were obtained by good performers (2.6), with poor performers obtaining a mean score of 2. On a musical<sup>2</sup> interpretative level, Table 3 shows that the majority of good performers (12) scored 3, with the remainder scoring 2; no good performers scored 1. Most of the poor performers (16) scored 2, with the remaining 4 equally spread between scores of 1 and 3. There is therefore a tendency for the poor performers to obtain reasonably good scores on this task, while good performers tend to score highly. Low scores were therefore rare on this task.

### 2). Instrumental Groupings and Their Responses to Task 1a

Table 1 also shows that difference between good and poor performers is not attributed to a difference between violinists' and pianists' scores on Test 1a [ $F(1, 36) = .4, p > .5$ ]. An analysis of the means (Table 2) shows that good violinists (2.7) and good pianists (2.5) do better on Task 1a than do poor violinists and poor pianists (both obtaining a mean score of 2). Table 4 shows the frequency distribution of scores. At a musically interpretative level, Table 4 shows that good violinists are more likely to score highly, with poor violinists and poor pianists likely to do relatively well, mostly obtaining a score of 2. Good pianists are equally spread between the scores of 2 and 3. There is therefore a tendency for both poor violinists and poor pianists to obtain reasonably good scores on this task, while good violinists tend to score highly. Low scores were therefore rare on this task.

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<sup>2</sup>. As in Study Two, the term 'musical' is used here to denote the meaningfulness of the frequency distribution, although there is no statistical significance.

**Table 1**

**Two Factor ANOVA comparing the difference in scores on Task 1a between all four performer groups**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
good/poor (A)	1	3.6	3.6	15.1	.0004
piano/violin (B)	1	.1	.1	.4	.5217
AB	1	.1	.1	.4	.5217
Error	36	8.6	.2		

**Table 2**

**Incidence table comparing the difference in scores on Task 1a between all four performer groups**

		piano/violin:	piano	violin	Totals:
good/poor	good		10 2.5	10 2.7	20 2.6
	poor		10 2	10 2	20 2
Totals:			20 2.2	20 2.3	40 2.3

**Table 3**

**Frequency distribution of scores on Task 1a for good and poor performers**

		Score			Totals:
		1	2	3	
Performer Group	good	0	8	12	20
	poor	2	16	2	20
Totals:		2	24	14	40

**Table 4**

**Frequency distribution of scores on Task 1a for all four performer groups**

		Score			Totals:
		1	2	3	
Instrumental Group	GP	0	5	5	10
	PP	1	8	1	10
	GV	0	3	7	10
	PV	1	8	1	10
Totals:		2	24	14	40

### **1). Good and Poor Performers and Their Responses to Task 1b**

Using the scores for all four groups, a two factor ANOVA was carried out to compare the scores on Task 1b. Table 5 reveals that there is a significant difference good and poor performers [ $F(1, 36) = 92.8, p = .0001$ ]. Table 6 shows that the highest mean scores were obtained by good performers (2.8), with poor performers obtaining a mean score of 1.4. The frequency distribution of scores (Table 7) shows that the majority of good performers (16) scored 3, with the remainder scoring 2; no good performers scored 1. Most of the poor performers (12) scored 1, with the remaining 8 scoring 2. There is therefore a tendency for the poor performers to obtain low scores on this task, while good performers tend to score highly. This task seems to spread the scores more and differentiate more clearly between good and poor performers.

### **2). Instrumental Groupings and Their Responses to Task 1b**

Table 5 also shows that difference between good and poor performers is not attributed to a difference between violinists' and pianists' scores on Task 1b [ $F(1, 36) = 1.9, p = .1772$ ]. Table 6 shows that the highest mean scores were obtained by good violinists (2.9) and good pianists (2.7). Poor violinists and pianists scored a mean of 1.5 and 1.3 respectively. Table 8 shows the frequency distribution of scores. Generally, one can interpret this frequency distribution at a musical level. That is, both good violinists and good pianists tend to score highly whereas poor pianists tend to score low. Poor violinists are equally spread between the scores of 1 and 2.

**Table 5**

**Two Factor ANOVA comparing the difference in scores on Task 1b between all four performer groups**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
good/poor (A)	1	19.6	19.6	92.8	.0001
piano/violin (B)	1	.4	.4	1.9	.1772
AB	1	-1.4E-17	-1.4E-17	-6.6E-17	1
Error	36	7.6	.2		

**Table 6**

**Incidence table comparing the difference in scores on Task 1b between all four performer groups**

		piano/violin:	piano	violin	Totals:
good/poor	good		10 2.7	10 2.9	20 2.8
	poor		10 1.3	10 1.5	20 1.4
Totals:			20 2	20 2.2	40 2.1

**Table 7**

**Frequency distribution comparing scores on Task 1b between good and poor performers**

Performer Group	Score			Totals:
	1	2	3	
good	0	4	16	20
poor	12	8	0	20
Totals:	12	12	16	40

**Table 8**

**Frequency distribution of scores on Task 1b for all four performer groups**

Performer Group	Score			Totals:
	1	2	3	
GP	0	3	7	10
PP	7	3	0	10
GV	0	1	9	10
PV	5	5	0	10
Totals:	12	12	16	40

### **1). Good and Poor Performers and Their Responses to Task 1c**

Using the scores for all four groups, a two factor ANOVA was carried out to compare the scores on Task 1c. Table 9 shows that there is a significant difference between good and poor performers [ $F(1, 36) = 67.6, p = .0001$ ]. Table 10 shows that good performers scored the highest mean (3) with poor performers scoring a mean of 1.6. Table 11 shows the frequency distribution of scores. For the purposes of a general, musical interpretation, the majority of good performers (19) score high on the task, obtaining a score of 3. The majority of poor performers, on the other hand, are equally distributed between the scores of 1 (9) and 2 (9). This task, therefore, tends to create a better spread of scores between good and poor performers.

### **2). Instrumental Groupings and Their Responses to Task 1c**

Table 9 also shows that difference between good and poor performers is not attributed to a difference between violinists' and pianists' scores on Task 1c [ $F(1, 36) = 1.6, p = .214$ ]. Table 10 shows that the highest mean score was obtained by good violinists (3) followed closely by good pianists (2.9). Poor violinists (1.8) and poor pianists (1.5) obtained the lowest mean. The difference in means between good pianists and good violinists, and poor pianists and poor violinists did not reach significance. Table 12 shows the frequency distribution of scores. To interpret these results at a more general, musical level, Table 12 shows that good violinists (10) and the majority of good pianists (9) obtain the highest score, whilst the majority of poor violinists (8) and poor pianists (10) are equally spread between the scores of 1 and 2. Thus, good violinists and good pianists tend to score higher on Task 1c than do poor violinists and poor pianists.



**Table 9**

**Two Factor ANOVA comparing the difference in scores on Task 1c between all four performer groups**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
good/poor (A)	1	16.9	16.9	67.6	.0001
piano/violin (B)	1	.4	.4	1.6	.214
AB	1	.1	.1	.4	.5311
Error	36	9	.2		

**Table 10**

**Incidence table comparing the difference in scores on Task 1c between all four performer groups**

		piano/violin:	piano	violin	Totals:
good/poor	good		10 2.9	10 3	20 3
	poor		10 1.5	10 1.8	20 1.6
Totals:			20 2.2	20 2.4	40 2.3

Table 11

Frequency distribution of scores on Task 1c for good and poor performers

		Score			Totals:
		1	2	3	
Performer Group	good	0	1	19	20
	poor	9	9	2	20
Totals:		9	10	21	40

Table 12

Frequency distribution of scores on Task 1c for all four performer groups

		Score			Totals:
		1	2	3	
Performer Group	GP	0	1	9	10
	PP	5	5	0	10
	GV	0	0	10	10
	PV	4	4	2	10
Totals:		9	10	21	40

### 1). Good and Poor Performers and Their Responses to Task 2

Using the scores for all four groups, a two factor ANOVA was carried out to compare the scores on Task 2. Table 13 reveals that there is a significant difference between good and poor performers [ $F(1, 36) = 41.7, p = .0001$ ]. Table 14 shows that good performers (2.2) obtain the highest mean, whilst poor performers obtained a mean of 1.4. Table 15 shows the frequency distribution of scores. From a more general, musical perspective, Table 15 indicates that the poor performers' group contributes most to the difference, with 13 scoring 1 and 7 scoring 2. The majority of good performers (9), however, scored 2, with 3 of the good performers scoring 1. Indeed, some of the poor performers did better than some of the good performers.

### 2). Instrumental Groupings and Their Responses to Task 2

Table 13 also reveals that there is a significant difference between violinists' and pianists' scores on Task 2 [ $F(1, 36) = 32.9, p = .0001$ ]. Table 14 shows that the highest mean was obtained by violinists (2.2), with pianists scoring a mean of 1.4. The frequency distribution of scores also shows that there is a difference between violinists' and pianists' on Task 2 (Table 16). For the purposes of a general, musical interpretation, the majority of pianists (12) score a low of 1, with the remainder (8) scoring 2. The majority of violinists' scores (16) are equally distributed between score 3 and 2, with the remaining 4 violinists scoring 1.

To examine these instrumental differences further, Table 13 shows a significant interaction effect [ $F(1, 36) = 4.6, p < .05$ ]. Table 14 shows that good violinists obtain the highest mean score (2.8), followed by good pianists (1.7) and poor violinists (1.6). Poor pianists obtained the lowest mean score (1.1). Table 14 shows that good pianists score better than poor pianists but did not score different from poor violinists. Good violinists scored better than all other groups. The frequency distribution of scores also revealed a difference between scores on Task 2 for the four instrumental groups (Table 16). For the purposes of a general, musical interpretation, Table 17 shows that good violinists are better overall, with poor violinists falling just below good pianists. Interestingly, poor violinists scored almost the same as good pianists. Poor pianists were the least

effective at this task, with the majority scoring the lowest mark. Therefore, good performers do better than poor performers in general, with violinists doing better than pianists so that poor violinists perform at a similar level to good pianists. The hypothesis that good violinists are more effective at aural imaging is partially supported.

**Table 13**

**Two Factor ANOVA comparing the difference in scores on Task 2 between all four performer groups**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
good/poor (A)	1	8.1	8.1	41.7	.0001
piano/violin (B)	1	6.4	6.4	32.9	.0001
AB	1	.9	.9	4.6	.0382
Error	36	7	.2		

**Table 14**

**Incidence table comparing the scores on Task 2 for all four performer groups**

		piano/violin:	piano	violin	Totals:
good/poor	good		10 1.7	10 2.8	20 2.2
	poor		10 1.1	10 1.6	20 1.4
Totals:			20 1.4	20 2.2	40 1.8

**Table 15**

**Frequency distribution of scores on Task 2 for good and poor performers**  
Score

		1	2	3	Totals:
Performer Group	good	3	9	8	20
	poor	13	7	0	20
	Totals:	16	16	8	40

**Table 16**

**Frequency distribution of scores on Task 2 for violinists and pianists**  
Score

		1	2	3	Totals:
Instrument	piano	12	8	0	20
	violin	4	8	8	20
	Totals:	16	16	8	40

**Table 17**

**Frequency distribution of scores on Task 2 for all four performer groups**

		Score			Totals:
		1	2	3	
Performer Group	GP	3	7	0	10
	PP	9	1	0	10
	GV	0	2	8	10
	PV	4	6	0	10
	Totals:	16	16	8	40

### **1). Good and Poor performers and Their Responses to Task 3**

Using the scores for all four groups, a two factor ANOVA was carried out to compare the scores on Task 3. Table 18 shows that there is a significant difference between good and poor performers on [F (1, 36)= 32.7, p= .0001]. Table 19 shows that good performers (2.8) obtain the highest mean, whilst poor performers obtained a mean of 1.8. Table 20 shows the frequency distribution of scores. From a more general, musical perspective, Table 20 indicates that the majority of poor performers (11) scored 2, followed by 7 of them scoring 1. However, 2 of the poor performers scored 3. The majority of good performers (15) scored 3, with the remaining 5 scoring 2. There is therefore a tendency for poor performers to obtain reasonably good scores on this task, while good performers tend to score highly.

### **2). Instrumental Groupings and Their Responses to Task 3**

Table 18 also shows that there is no significant difference between violinists' and pianists' scores on Task 3 [F (1, 36)= .3, p> .5]. Table 19 shows that good violinists obtain the highest mean score (2.8), followed closely by good pianists (2.7). Poor pianists (1.9) and poor violinists (1.6) obtained the lowest mean scores. Table 21 shows the frequency distribution of scores. For the purposes of a general, musical interpretation, Table 21 indicates that the majority of good violinists (8) and good pianists (7) scored 3. Half of the poor violinists (5) scored 1; however, of the remaining 5, 4 of these scored 2 and the other scored 3. In contrast, the majority of poor pianists (7) scored 2; of the remaining 3, 2 of them scored 2 and the other obtained a score of 3. These results tend to suggest that the majority of good performers score highly on this task, with none of them scoring 1. Poor pianists tend to do reasonably well on this task, with poor violinists obtaining the lowest marks. Therefore, the relatively good scores of poor performers is largely due to the poor pianists rather than poor violinists.

**Table 18**

**Two Factor ANOVA comparing the difference in scores on Task 3 between all four performer groups**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
good/poor (A)	1	10	10	32.7	.0001
piano/violin (B)	1	.1	.1	.3	.5708
AB	1	.4	.4	1.3	.2601
Error	36	11	.3		

**Table 19**

**Incidence table comparing the scores on Task 3 between all four performer groups**

		piano/violin:	piano	violin	Totals:
good/poor	good		10 2.7	10 2.8	20 2.8
	poor		10 1.9	10 1.6	20 1.8
Totals:			20 2.3	20 2.2	40 2.2

**Table 20**

**Frequency distribution of scores on Task 3 for good and poor performers**

		1	2	3	Totals:
Performer Group	good	0	5	15	20
	poor	7	11	2	20
	Totals:	7	16	17	40

**Table 21**

**Frequency distribution of scores on Task 3 for all four performer groups**

		1	2	3	Totals:
GP	0	3	7	10	
PP	2	7	1	10	
GV	0	2	8	10	
PV	5	4	1	10	
Totals:	7	16	17	40	



### 1). Good and Poor performers and Their Responses to Task 4

Using the scores for all four groups, a two factor ANOVA was carried out to compare the scores on Task 4. Table 22 shows that there is a significant difference between good and poor performers [ $F(1, 36) = 34.2, p = .0001$ ]. Table 23 shows that good performers (2.7) obtain the highest mean, whilst poor performers obtained a mean of 1.7. Table 24 shows the frequency distribution of scores. From a more general, musical perspective, Table 24 indicates that the majority of poor performers (12) scored 2, followed by 7 of them scoring 1. However, 1 of the poor performers scored 3. The majority of good performers (13) scored 3, with the remaining 7 obtained a score of 2. There is therefore a tendency for poor performers to obtain reasonably good scores on this task, while good performers tend to score highly.

### 2). Instrumental Groupings and Their Responses to Task 4

Table 22 also shows that there is a significant, although marginal, difference between violinists' and pianists' scores on Task 4 [ $F(1, 36) = 4.6, p < .05$ ]. Table 23 shows that good violinists obtain the highest mean score (2.8), followed by good pianists (2.5). Poor violinists (1.9) and poor pianists (1.5) obtained the lowest mean scores. Table 25 shows the frequency distribution of scores. For the purposes of a general, musical interpretation, Table 25 indicates that the majority of good violinists (8) scored 3, whilst the remainder scored 2. Good pianists were equally distributed between the score of 2 and 3. The majority of poor violinists (7) scored 2, with 2 of the remaining poor violinists scoring 1 and the other obtained a score of 3. In contrast, poor pianists were equally distributed between the score of 1 and 2. These results tend to suggest that good violinists tend score highly on this task, with none of them scoring 1. Good pianists also tend to do well on this task. Both poor violinists and poor pianists also tend to do reasonably well at this task, with the task spreading the score of poor violinists more so than poor pianists.

Table 22, however, shows that there is no significant interaction effect [ $F(1, 36) = .1, p = .76$ ]. As Task 4 was different in nature for violinists and pianists, there was not expected to be an

interaction effect. The difference between instrumental groups, therefore, should not be interpreted as meaningful.

**Table 22**

**Two Factor ANOVA comparing the difference in scores on Task 4 between all four performer groups**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
good/poor (A)	1	9	9	34.2	.0001
piano/violin (B)	1	1.2	1.2	4.6	.038
AB	1	2.5E-2	2.5E-2	.1	.76
Error	36	9.5	.3		

**Table 23**

**Incidence table comparing the difference in scores on Task 4 between all four performer groups**

		piano/violin:	piano	violin	Totals:
good/poor	good		10 2.5	10 2.8	20 2.7
	poor		10 1.5	10 1.9	20 1.7
Totals:			20 2	20 2.3	40 2.2

**Table 24**

**Frequency distribution of scores on Task 4 for good and poor performers**

	1	2	3	Totals:
good	0	7	13	20
poor	7	12	1	20
Totals:	7	19	14	40

**Table 25**

**Frequency distribution of scores on Task 4 for all four performer groups**

	1	2	3	Totals:
GP	0	5	5	10
PP	5	5	0	10
GV	0	2	8	10
PV	2	7	1	10
Totals:	7	19	14	40

## 2. Effect of Order of Presentation for Task 2

### a). Does the order of presentation affect scores of good and poor performers?

Table 26 confirms the findings of Tables 13 and 14, in that there is a significant difference between good and poor performers' scores on Task 2 [ $F(1, 36) = 20.54, p < .0001$ ]. However, Table 26 shows that the presentation order does not effect the scores of good and poor performers. Table 27 shows the incidence table of a two factor ANOVA comparing good and poor performers' scores on Task 2 between presentation order A and B. This indicates that the presentation order did not produce a significant difference between good performers' scores (mean= 2.3 for presentation A, 2.2 for presentation B), nor between poor performers' scores (mean= 1.4 for presentation A, 1.3 for presentation B). The distribution of scores for each presentation order shows that for presentation A, the majority of good performers (5) scored 2 while the majority of poor performers (6) scored 1 (Table 28). For presentation order B, the majority of good performers (8) are equally spread between mean scores of 2 and 3. The majority of poor performers (7) obtained a score of 1 (Table 28). Thus, the order of presentation did not significantly affect performance on this task when violinists and pianists are combined.

**Table 26**

**Two Factor ANOVA comparing the presentation order effect on good and poor performers**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
good/poor (A)	1	8.1	8.1	20.54	.0001
Order (B)	1	.1	.1	.254	.6177
AB	1	2.776E-17	2.776E-17	7.037E-17	1
Error	36	14.2	.394		

**Table 27**

**Incidence table comparing the presentation order effect on good and poor performers**

		good/poor:	good	poor	Totals:
Order	A		10 2.3	10 1.4	20 1.85
	B		10 2.2	10 1.3	20 1.75
Totals:			20 2.25	20 1.35	40 1.8

**Table 28**

**Frequency distribution comparing good and poor performers' scores:**

**For order A**

		Score			
		1	2	3	Totals:
Performer group	good	1	5	4	10
	poor	6	4	0	10
Totals:		7	9	4	20

**For order B**

		Score			
		1	2	3	Totals:
Performer group	good	2	4	4	10
	poor	7	3	0	10
Totals:		9	7	4	20

b). The effect of presentation order upon violinists' and pianists' scores on Task 2.

The next question which needs addressing concerns the area of domain-specificity. Task 2 was designed to assess aural imaging, and previously it was proposed that aural imaging is a skill required by violinists more than of pianists. If aural imaging is more pertinent to violinists, the following results should be found:- a) violinists will do better on Task 2 than pianists, and b) there will be an order effect upon violinists' performance but no order effect upon pianists' performance.

Table 29 indicates that there is a significant difference between violinists' and pianists' scores on Task 2 [ $F(1, 36) = 14.582, p = .0005$ ], with violinists scoring significantly higher than pianists.

However, Table 29 also shows that this difference is not attributed to the effect of the presentation order [ $F(1, 36) = .228, p = .636$ ]. Table 30 shows the incidence table of a two factor ANOVA comparing violinists' and pianists' scores on Task 2 between presentation order A and B. This indicates that the presentation order did not produce a significant difference between these groups. Hypotheses a and b were therefore supported.

**Table 29**

**Two Factor ANOVA comparing the presentation order effect upon violinists' and pianists' scores on Task 2**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
Order (A)	1	.1	.1	.228	.636
piano/violin (B)	1	6.4	6.4	14.582	.0005
AB	1	.1	.1	.228	.636
Error	36	15.8	.439		

**Table 30**

**Incidence table comparing the presentation order effect upon violinists' and pianists' scores on Task 2**

	piano/violin:	piano	violin	Totals:
Order	A	10 1.4	10 2.3	20 1.85
	B	10 1.4	10 2.1	20 1.75
Totals:		20 1.4	20 2.2	40 1.8

c). Is there a difference between the four groups on Task 2 when comparing presentation A with presentation B?

A two factor ANOVA reveals that the presentation order does not produce a significant difference between instrumental groups [ $F(3, 32) = .8$ ] (Table 31). Table 32 summarises the differences in mean scores across all groups and their scores on Task 2, under both orders of presentation. This shows that good violinists' mean score (2.8) is the same under both conditions and is the highest. If we compare the mean scores in Table 32, it can be seen that good pianists and poor violinists perform slightly less well on presentation B than on presentation A (by .2 and .4 respectively), but not significantly so.

Examining the frequency distributions of all groups on presentation A and B, it can be seen that, for presentation order A, the majority of good violinists (4) are the only group to score 3 on Task 2 (Table 33). Good pianists and poor violinists perform equally as well. Poor pianists (5) scored 1. Therefore, the score of 3 was rare on Task 2 in order A. In presentation order B, Table 33 shows that good violinists' scores on Task 2 remained the same as in presentation A. The distribution of scores for all other groups was similar for both presentation orders.

Although there were no significant order effects, Table 32 suggests that presentation order A is slightly better at spreading the scores between good and poor pianists, but order B is slightly better at spreading scores between good and poor violinists.



**Table 31**

**Two Factor ANOVA comparing the presentation order effect upon all four performer groups**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
Order (A)	1	.1	.1	.5	.4846
Group (B)	3	15.4	5.1	25.7	.0001
AB	3	.5	.2	.8	.4855
Error	32	6.4	.2		

**Table 32**

**Mean scores for all four performance groups across both conditions**

Group:		GP	PP	GV	PV	Totals:
Order	A	5 1.8	5 1	5 2.8	5 1.8	20 1.85
	B	5 1.6	5 1.2	5 2.8	5 1.4	20 1.75
Totals:		10 1.7	10 1.1	10 2.8	10 1.6	40 1.8

**Table 33**

**Frequency distribution of scores between all four performer groups under both conditions**

		Score			Totals:
		1	2	3	
Performer group	good pianists	1	4	0	5
	poor pianists	5	0	0	5
	good violinists	0	1	4	5
	poor violinists	1	4	0	5
Totals:		7	9	4	20

		Score			Totals:
		1	2	3	
Performer group	good pianists	2	3	0	5
	poor pianists	4	1	0	5
	good violinists	0	1	4	5
	poor violinists	3	2	0	5
Totals:		9	7	4	20

d). Does presentation B discriminate more between violinists than presentation A?

Table 34 summarises the effect of the presentation order between good and poor violinists. This shows that there is a significant effect between the groups [ $F(1, 16) = 32, p = .0001$ ]. Table 35 shows that good violinists (2.8 for both presentation A and B) perform better on Task 2 than do poor violinists (1.8 and 1.4, respectively). However, Table 34 indicates that this difference is not attributed to the order of presentation [ $F(1, 16) = .889, p = .3598$ ]. Exploring the frequency distribution of poor violinists' scores on each presentation order, there is a tendency for Order B to spread the scores more (Table 36). Table 36 shows that the majority of poor violinists tend to score low (3) in presentation B, whereas in order A, poor violinists tend to do reasonably well, with the majority (4) scoring 2.

**Table 34**

**Two Factor ANOVA comparing the presentation order effect between violinists' scores on Task 2**

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
Order (A)	1	.2	.2	.889	.3598
Group (B)	1	7.2	7.2	32	.0001
AB	1	.2	.2	.889	.3598
Error	16	3.6	.225		

**Table 35**

**Mean scores for good and poor violinists across both presentation orders**

Group:		GV	PV	Totals:
Order	A	5 2.8	5 1.8	10 2.3
	B	5 2.8	5 1.4	10 2.1
Totals:		10 2.8	10 1.6	20 2.2

**Table 36**

**Frequency distribution of scores between all four performer groups under both conditions**

**Order A**

		Score			
		1	2	3	Totals:
Violinists	good	0	1	4	5
	poor	1	4	0	5
Totals:		1	5	4	10

**Order B**

		Score			
		1	2	3	Totals:
Violinists	good	0	1	4	5
	poor	3	2	0	5
Totals:		3	3	4	10

## DISCUSSION

Statistics are like a bikini. What they reveal is suggestive. What they conceal is vital.  
(Koestler, 1966, p.90)

The findings reveal that the above constructed unprepared-performance task does effectively discriminate between good and poor performers. However, some of the tasks are more efficient at spreading the difference in scores between good and poor performers than others. These distinctions will be discussed with a) reference to instrumental groupings, and b) the extent to which the order of presentation affects scores on Task 2.

The results also show that, in Task 2, there is a significant difference between violinists' and pianists' performance scores. This will be discussed in relation to the possibility of domain-specific skills.

Thirdly, issues for further development, such as the validity and the reliability of the tasks, will be discussed with particular reference to their usefulness to the ABRSM's performance examinations.

### **Why are Good Performers Scoring Better?**

Throughout, good performers did better than poor performers. These tasks were purposely designed to access the necessary aural skills that directly relate to an effective performance, using the information accrued from the previous studies. We have seen how researchers have stressed the importance of aural imagery for performance (Seashore, 1919; Seashore, 1938; Schumann, 1956; Regelski, 1975; Zenhausern, 1978; Kosslyn, 1980; Shepard and Cooper, 1982; Finke, 1986, in Welch, 1990; Pratt, 1990; Priest, 1993; Townsend, 1996), and that expression and understanding, indeed 'general musical efficiency' are key performance abilities which can be tapped through sight-reading (Sloboda, 1976, 1985; Salaman, 1994, Priest, 1993). In addition, both the literature and Study One have argued that the ability to 'feel' and communicate in performance is one of the main features of musicality. The author of this thesis proposes that all these abilities can be

subsumed under the umbrella of aural skills. It is therefore suggested that a) these tasks are assessing aural skills that are directly relevant to, and vital for, an effective performance, b) the tasks objectively differentiate between relatively 'good' and 'poor' performers, and c) for both violinists and pianists, two distinctly dissimilar instrumentalists, this unprepared 'performance/aural' task seems a viable measure of appraising a good performer.

### **Why are the Scores of Poor Performers Often Quite Good?**

Fundamentally, one needs to remember that teachers were unlikely to have recommended pupils who were *very* poor performers; indeed, this issue was a delicate matter, whereby some teachers were initially defensive and dismissed the possibility of any of their pupils being poor performers. Having said this, teachers were willing to supply pupils who they thought were in need of more performance-related skill or who had only barely passed their recent Grade 5 performance examination. For these reasons, it can be assumed that the 'poor' subjects used in this study were *relatively* poor performers.

However, good scores in poor performers may imply that the tasks need adjusting. For Task 1a, poor performers did relatively well. There are a variety of possibilities why this result occurred:

- a) that the music stimulus was not of a sufficiently difficult standard to distinguish more effectively between good and poor performers,
- b) that the *reading* time allowed prior to playing through the music was too long a period,
- c) that poor performers are not necessarily poor 'sight-readers'. As this task is primarily designed to assess the ability to maintain a sense of pulse and rhythm, and given that both the literature and Study One have proposed that pulse and rhythm are fundamental to an effective performance, and are frequently trained before any of the other aspects of performance, then one would expect even relatively poor performers to possess some sense of both. As pulse and

rhythm are arguably the building blocks which form the basis of performance ability, then it may not be surprising to find that poor performers were able to maintain these two competencies,

d) the scoring system was too limited in its range of marks,

e) the criteria used to assess the performers were too flexible and not as severely distinguished as might be necessary.

Score 3 was allocated when the subject played correctly or incorrectly, with the ability to identify precisely his/her mistakes or difficulties. For example, one subject commented that 'I'm quite happy with it...I forgot the F\* [indicates first line] but remembered it after that...It was o.k.'. This clearly shows that the subject was aware of the inaccuracy of key and quickly made amendments to his/her faulty pitch relations. Although this may not show an ability to image aurally there is some sign of transferability of aural skills, specifically, in this case, accessing the norms of tonal music as a yardstick.

Additionally, the assumption that good performers have well-developed aural skills whereas poor performers have relatively less developed aural skills may be somewhat presumptuous; some poor performers may well be scoring adequately precisely because their aural skills are developed, but these may not be sufficient for a good performance.

For Task 1b, the majority of poor performers scored the lowest mark. This task was designed to assess the level of a performer's understanding in relation to how they had played the piece in Task 1a. More specifically, it was created to establish a performer's ability to monitor and respond to mistakes that may have occurred, through the use of aural imaging or kinaesthetic/haptic feedback. The apparent inability of poor performers to identify or demonstrate difficult areas was viewed as a lack of understanding, or realisation, of their overt mistakes; indeed, it is proposed that neither aural, kinaesthetic nor haptic information was

referenced adequately. It could be that subjects were unable to understand the direct role aural skills play in performance.

However, if this is so, the inability to relate the two areas might have many interpretations. One explanation that would reaffirm the findings in the literature, is that it was not obligatory to use explicit, declarative knowledge. The subject's knowledge was equally accepted when the response consisted of knowledge that remained procedural. As there remains controversy and dissent about whether declarative knowledge facilitates or inhibits performance skills, Task 1b did not discriminate, hierarchically, between declarative or procedural knowledge; this was based on knowing *how to*, as well as knowing *that* (Fowler, 1988). If the objective is that musical understanding enhances performance quality, different from 'knowing about music' (which is perhaps more akin to Task 1c), then the ability to use operations in music is clearly more important than knowing the formal names for them (Regelski, 1975; Nuki, 1984; Cziko, 1986; Priest, 1993, Banton, 1995; McPherson, 1996). A possible explanation for this could be that poor performers do not possess an adequate performance strategy from which can be referenced the aural, kinaesthetic or haptic cues (McPherson, 1996), or that they were unable to transfer their understanding of notation or aural stimuli into a musical response; thus, indicating an inability to monitor and co-ordinate an understanding of internal images to external performance (Priest, 1993; McPherson, 1996). Therefore, it could be argued that the more experienced and/or technically accomplished performers were more able, when reading from previously unseen music, to effectively use aural, kinaesthetic or haptic imagery whilst referencing their response on their instrument; the less experienced could not connect these activities together.

For Task 1c, poor performers were equally spread between the scores of 1 and 2. As opposed to Task 1b, Task 1c was developed to assess a performer's general musical awareness about the historical context of the music. It was proposed that this task would access the performer's 'feel' for the music, the initial 'musical' response to the music having played it a second time. The distribution of scores for poor performers could be attributed to a) marked differences in a performer's musical experience of the repertoire, b) an *implicit* 'feel' of the music which had not



been developed enough to communicate this in abstract terms, c) the 'open' means of communicating their intentions was much freer than demanding declarative knowledge, so that some poor performers could portray a possible understanding. For example, one pianist explained that '...it sounds like the last piece that you have to play in exams...the modern one...the notes don't go together...they hurt your ears'.

The possible lack of candidates' understanding of the role of aural skills in performance may also be related to the explicit responses that they are required to give; if the function and meaning of aural skills in performance needs to be communicated verbally, then this relationship needs to be consolidated prior to the candidates' ability to express this in terms of speech (Cziko, 1986). If, as both Study One and the literature suggest, the performer needs only to re-code the printed score into its auditory form, then the 'decoding' of this re-coding into verbalisation is a step beyond performance, requiring a quite different type of understanding *about* music. Edwards (1986) proposes that declarative knowledge 'is knowledge about something (and it seems...that aural knowledge and images may be a form of [declarative] knowledge' (p.152).

The simultaneous scoring of verbal and demonstrable responses caused problems. Prior to scoring the results of this study, it was proposed that indications of implicit understanding would be awarded the same mark as explicit understanding; only if the knowledge in the former seemed markedly inferior would the score be lowered accordingly. However, in reality, the assessor found that understanding, whether implicit or explicit, was evident through the subjects' responses. The allocation of score 2 proved to be the most difficult to allocate; further refinement of Task 1c would make amendments by either omitting the scoring of 2 or by further clarification of task responses. Ultimately, the use of verbal or demonstrable responses was encouraged to guide the assessor in her validation process.

For Task 2, the majority of poor performers scored the lowest mark. However, poor violinists did not differ significantly from good pianists' scores. These results will be discussed below, in respect of the differences between pianists and violinists.

For Task 3, there is a tendency for poor performers to obtain reasonably good scores, with the marks spread across all three categories. The possible reasons for this spread of scores are that:-

a) Some poor performers may more readily learn from their previous renditions of the piece and are more able to produce a more accurate performance, whilst showing some awareness of expression.

b) The scoring of verbal responses posed a problem for the assessor as these commentaries were not obligatory.

c) Informative commentary that showed the performer's awareness of his/her rendition may have unintentionally inflated the score. This result suggests that poor performers are aware of their mistakes or limitations, even though they could not transfer this knowledge into enhancing their performance. As one of the aims of this task was to assess self-monitoring, then the tendency for poor performers to do well shows that they possess the monitoring skills that are imperative for utilising feedback strategies, but are unable to apply these to any effect. Indeed, the literature tends to support this view that the understanding of the relationships between notation, aural imaging and self-monitoring, culminating in a transferable skill, provides the necessary processes to develop aural imaging (Seashore, 1967; Regelski, 1975; Davidson and Scripp, 1994; McPherson, 1996). For example, McPherson (1996) researched musicians' performance ability in relation to various abilities to 'think in sound'. These consisted of skills such as improvising, playing by ear and from memory, and sight-reading. He notes that 'older, more experienced subjects reported mentally rehearsing (i.e. silently singing while fingering) music when preparing to perform from memory'. Young, less experienced subjects '...often fail to connect what they hear in their mind with the instrumental fingerings needed to execute these thoughts' (McPherson, 1996). Complementing this study, Banton (1992), in her study using auditory masking tasks while sight-reading, found that for pianists, less competent sight-readers use aural feedback inappropriately whereas competent sight-readers consult aural feedback when the performance deviates from their intended sound and then they make adjustments. Further in

her study, Banton (1995) proposed that expertise could be the key to using aural imagery effectively (Seashore, 1938; Cambell, 1986; Brodsky and Henik, 1996); expert pianists could visualise the music and did not need to rely on auditory feedback, using kinaesthetic and haptic cues instead. Banton's (1995) findings tend to support the results of the present study in that pianists performed significantly worse than violinists on Task 2, which may indicate that, as this task was designed to assess *aural* imaging, this ability is not so necessary for a pianist's performance. However, because the task was administered on the subject's own instrument, one might have expected that a pianist would reference his/her kinaesthetic or haptic cues to identify the extract. Perhaps even, these results reflect the particular type of musician, i.e. perhaps a soloist does not need to reference auditory feedback in the same way that an orchestral or ensemble instrumentalist may do. As the poor performers in this study tended to be aware of their performance through self-monitoring, rewarding this ability was seen as fruitful and necessary.

The suggestion that some form of sight-reading task will effectively assess a performer's ability to image is also hinted at by Sloboda (1974, 1976), Halpern and Bower (1979, 1982), Shaffer (1980) and Banton (1992, 1995). The idea that one needs to develop an understanding of the role that aural skills play in performance, whether implicit or explicit, in order to perform efficiently, has been discussed throughout this thesis. In particular, it has been suggested that this knowledge only becomes fully operational when it is used as a transferable skill, rather than developed as an end in itself. The findings of Task 1b imply that poor performers may well not have developed the necessary *understanding*, and hence *the effective use of*, aural ability in performance. The more abstract, generalisable knowledge may refer to what authors have deemed to be *explicit* knowledge; that is, as Task 1c is less able to discriminate between good and poor performers than Task 1b, it is possible that the global features of music, in which the overall structure, phrasing and context of the music are most pertinent, are more readily identifiable than local features. Indeed, as chapter VI has discussed, local features are determined by the 'operation of the listener's sensory systems' (Dowling and Harwood, 1986, p.160) whereas global features rely much more on memory and, therefore, the performer's 'experience with sets of similar pieces

[which provides the] building up of schemata knowledge that allows for the filling in of aspects not explicitly stated' (Neisser, 1976, in Dowling and Harwood, 1986, p.160). This essence of *knowing* through previous experience of, and exposure to, global features is also proposed by other researchers (Seashore, 1939; Weaver, 1939; and Gibson, 1979). While it is proposed that Task 1c is assessing this type of knowledge rather than the more local knowledge akin to Task 1b, Task 3 acknowledges the '*knowing* through previous experience (in this instance, through previous readings and playing of the music stimulus), and rewards it appropriately. However, the implicit *knowing* of how a piece *feels* can be attributed to musicality and may not be accessible through verbal means. Therefore, the ability to perform in a specific style, without necessarily being able to verbalise this knowledge, is a concept which should be allowed for in both Task 1b and, in particular, Task 1c.

d) If the performance was noticeably better than the previous 2 renditions, then the assessor tended to allocate scoring relative to the previous marks. Again, as was noted under section 'c', the ability to transfer the knowledge gained from previous performances, and to apply this to further performances, was also seen as part of the assessment criteria; i.e. to assess the degree of improvement upon their previous performances resulting from the application of aural skills.

For Task 4, poor performers also performed adequately. For poor violinists, who scored higher than the majority of poor pianists, the piano accompaniment seemed to enhance the performer's sense of intonation, pulse and rhythm. As violinists are more likely to perform with pianists than not, they may be particularly attuned to adjusting intonation in line with the piano. The greater sense of confidence that the majority of poor violinists seemed to display may also be a reason for the wide spread of marks for poor violinists.

Task 4 was different in nature for both instrumental groups and so a comparison between the two would be inappropriate; that is, whilst pianists were asked to play through the music once more with the intention of communicating to the assessor as musically as possible, violinists were asked to perform with a piano accompaniment whilst simultaneously communicating and

responding within the ensemble. Poor pianist's scores tended to be low, although they were spread equally between scores of 1 and 2. The necessity for the pianist to play through the piece *yet again* may provide one reason why poor performers scored low on this task. Those poor pianists who did relatively well on this task may have learned from their previous renditions and were able, on this 4th performance, to enhance their realisation; indeed, the very fact that they were asked to produce a *performance* may account for improved execution.

### **The Results of the Order Effect on Task 2 for Violinists and Pianists**

Task 2 was designed to assess subjects' ability to image aurally, first by relating what they hear to the written notation, and if this proved unsuccessful, to play through the music themselves with the premise that when they come across the particular passage then aural and perhaps kinaesthetic or haptic cues will be referenced, leading to the correct identification of the specified extract. Three hypotheses related to this task:- a) that violinists would be better at this task than pianists, developed from the hypothesis that violinists need to utilise aural imagery for an effective performance more than pianists; b) there will be no order effect upon pianists' performance on Task 2; and c) the presentation order B will discriminate between good and poor violinists better than presentation order A.

Violinists were found to perform significantly better on Task 2 than pianists, with no significant discrimination between pianists' scores. Indeed, some good pianists even scored the lowest mark. Good violinists also performed significantly better than poor violinists on Task 2. However, no order effects were significant. Plausible interpretations of these results might be that violinists more readily reference aural imaging skills whilst performing than do pianists. This might suggest that pianists do not use this skill and are more reliant on other aural or kinaesthetic skills whilst performing. Woszczyk (1996, in Brodsky and Henik, 1997) argues that 'empirical investigations have now confirmed that the cognitive map of the auditory space is parallel in orientation and alignment to the map involving visual space' (p.1). Moreover, musical imagery 'is based on explicitly musical stimuli involving melodic, rhythmic, harmonic, and

dynamic components' (Brodsky and Henik, 1997, p.1). Study One also revealed that pianists did not require the ability to image aurally to the extent of a non-fixed-pitch instrument; it was suggested that the role of kinaesthetics was of prior importance.

It may not be that violinists have superior imaging skills, it may be that the tasks are biased. This may be due to the development of these tasks being designed by a violinist, namely the author. However, the very nature of using unprepared task stimuli should also be assessing the relevant kinaesthetics and haptics referenced by pianists and violinists. Therefore, poor pianists may do well due to kinaesthetic and haptic cues, perhaps because pianists rely more on these than on aural imaging. The mean score for good pianists (1.7) and poor violinists (1.6) on this task is remarkably close. This may indeed suggest that violinists need to use aural imagery to develop skills for an effective performance, which would be a possible explanation for poor violinists doing reasonably well on this task in relation to good pianists. Another interpretation might be that the use of the two different periods and styles of music is not acceptable as a reliable basis of comparison between the two instrumental groups. That is, the music of Bartok, and in particular the passage chosen for the 'embedded melody' task, could be more difficult to detect than the music of Bach and the particular music chosen for violinists. Perhaps the musical characteristics of the stimulus were not sufficiently cognitively salient to provide subjects with sufficient understanding (Nuki, 1984; Banton, 1995). However, as both of these pieces were chosen from the ABRSM's Grade 3 list, it is plausible that the level of difficulty for each piece of music was equally matched.

The order of presentation had no effect upon the relative performance of good and poor violinists, although poor violinists did score lower under presentation B than presentation A. Possible reasons for this might be that the difference did not reach significance because subjects were given two attempts at identifying the passage, first through hearing it and then by playing through the whole piece until the extract could be identified. As it has been discussed that aural imaging does not necessarily have to be utilised prior to playing the music oneself (Priest, 1996), the second attempt at identifying the extract was not regarded as a fundamentally inferior

response. On the other hand, if the assessor had markedly differed between scoring the first and second attempt, the difference between good and poor violinists' scores in order B, as opposed to order A, may have reached significance.

### **Possibilities for Further Research**

Concerning matters of validity, one reason why poor performers perform adequately on some of the tasks, as discussed above, may be explained by the limitations of the three point scale used to score the tasks. Further improvements should consider a wider scale which could distinguish the results between good and poor performers more efficiently. The frequency distributions of the task results indicates that poor violinists tend to push up the mean score for poor performers to 2. Again, the validity and reliability of the scoring framework is questioned; these results could imply that the assessor was not examining violinists and pianists fairly. That is, the assessor was a more advanced violin player than pianist which could have biased the results. Indeed, this bias may have impinged upon the whole construction of these tasks, but against this perspective, the results suggest that this is not the case. One way of guarding against this would be to have instrument-specific assessors, or even better for this comparative experiment, one assessor who is equally proficient on both instruments. The generalisability of the tests also needs to be addressed. Further research is needed to ascertain whether the tests are appropriate for other instrument groups.

The findings from Task 2 indicate that aural imaging could be a domain-specific skill, which for violinists is central to performing effectively, but which for pianists may either not be needed to the same degree or may be replaced with other aural skills. The proposition that the use and type of aural skills an instrumentalist uses are domain-specific has implications for the definition of aural skills; perhaps the usual umbrella definition of 'aural skills' needs redressing. If we are discussing the assessment of aural skills for all instrumentalists, then within this category should also be the inclusion of kinaesthetics and haptics. This not only widens the traditional prescription of aural skills, it redefines it, and in doing so, makes relevant the essential elements which have eluded, confused and ignored the domain-specificity of instrumentalists' needs. The

ABRSM's tests seem, perhaps pragmatically, biased towards pianists, with solo instrumentalists and vocalists finding it hard to cope with chordal and linear questions of discrimination.

One possible explanation for violinists performing better than pianists on Task 2 is that this task may be more difficult for pianists. For example, the violin line is one-note-at-a-time in one clef, whereas the piano piece is up-to-four-notes-at-a-time in 2 clefs with different phrasing/articulation in the two hands. In terms of quantity of information to take in, pianists have much more to contend with. If measuring aural competence via a test which is based on something *like* sight-reading, and comparing results for 2 instrumental families, one may suggest that the results are distorted by the greater difficulties facing pianists. However, it is proposed that both instrumental groups will be familiar with their specific instrumental challenges when playing music. It is considered that each music stimulus is appropriate for the instrument domain, given that all subjects were Grade 5 standard. The whole impetus behind using these musical examples was that the aural/kinaesthetic/haptic cues used whilst playing an unprepared-task would be appropriate for each instrumental domain.

Research into the 'aural feedback' skills that are utilised when performing on a brass instrument also point towards the domain-specificity of aural skills. For example, Cook (1996) found that trombonists rely on haptic and kinaesthetic skills when aural feedback was masked; both the literature and Study One provide evidence for wind players relying more heavily on both haptic and kinaesthetic skills, rather than aural cues, to learn their instrument. Stowman (1996) produced similar findings for trumpeters (Brodsky, 1997; Brodsky and Henik, 1997). Further to this, Yeager (1952) found wind players 'are significantly less able to indicate where visually and aurally presented stimuli did not agree' (p.156), more so than pianists, organists and vocalists. In support of the present study, Stecklein and Aliferis (1957) found that string players scored the highest on this task, concluding that 'every shade of intonation is controlled by the sensitivity that the string performer's ear has on the placement of his finger' (in May and Elliott, 1980, p.156). However, one needs caution to interpret these results. The above authors used the tasks in the 'Gaston test of Musicality', where arguably only 2 items relate directly to the skills used in



performance; i.e. identifying written notation from hearing it aurally, and noting a change of pitch or rhythm. All the tasks were administered on the piano. Pianists came a close second to string players in these tests which May and Elliott (1980) attribute to years of piano study which inevitably develops domain-specific aural skills; it is suggested that the use of the piano to administer the tests could be the reason for this, as well as the assessment of skills more relevant to the pianists e.g. chord identification.

To pursue this further, Nuki (1984), cited in Banton (1995) found that when pianists read a piece of music through before performing it, they are more able to commit the music to memory than when they played it through initially (kinaesthetically) or heard the music without previously imaging it. Nuki (1984), in his study on pianists, reported a high correlation between sight-reading ability and memorisation skills, advocating that this provides evidence for the use of the inner ear. However, this conclusion is questionable. We cannot conclude from a correlation study that sight-reading skills improve memorisation or vice versa because neither of the variables are manipulated by the assessor; all that can be concluded is that there is a positive relationship between the two abilities. Luce (1958, 1965, in McPherson 1995, p.143) produced similar findings to Nuki (1984). However, Luce (1958) argues that, for those who read music, 'ear-playing may be more beneficial to the development of musicianship than sight-reading' (p.143).

For the ensemble task, Task 4, to maintain uniformity for examination purposes, there needs to be a situation whereby the ensemble skills of pianists are assessed. For example, what they've read in the previous tasks could be a harmonically self-sufficient half of a piano duet, which the examiner later completes. Additionally, since in examination contexts accompanists themselves are sometimes not very accomplished pianists, this element of Task 4 seems potentially hazardous and impractical for violinists.

The concerns for Task 1c are also recognised in that some current sight-reading tests are quite dissonant/atonal, in which 'evident' pitch errors aren't as clearly apparent as they would be in a simple baroque or classical tonal piece. Therefore, one should not always limit the styles of sight-

reading to familiar ones, especially as instrumentalists progress toward Grades 7 and 8. It is important to remember at this stage that the above proposed tasks are prototypes. These need further research and development before the eventual application to 'real' performance examinations.

There is also some disparity between the two instruments on Task 1c; subjects were asked to identify which style the piece more closely resembled when compared to pieces prepared or performed previously in their musical education. By Grade 5, Baroque style would be common experience to violinists, whereas Bartok would be much less so. To remedy this, it may be more consistent to find a simple keyboard binary dance from the same period. However, whilst designing these tasks, the researcher found it difficult to locate any such pieces amongst the specified Grade 3 pieces of the three major performance examination boards. In spite of this, it is recognised that the search for such music should have been much broader.

The exploratory nature of this study can only lead to tentative conclusions. However, the evidence broadly supports the view that the definition and assessment of aural skills needs to be widened. That is, there seems grounds for suggesting that aural, kinaesthetic and haptic cues are referenced to varying degrees depending upon the instrument played. In the light of these possible interpretations, it may be appropriate to assess these skills within the context of a performance situation. It might not be going too far to suggest that future research may explore the potential of an unprepared-performance task to assess such skills. It would also be desirable to explore the nature of understanding in performance, with a view to establishing the types of knowledge that enhance performance proficiency, and the learning strategies through which this knowledge is taught and assimilated. While empirical research is needed for this investigation, it would be wise for future scholars to heed the words of Dirac, the physicist:

...It is more important to have beauty in one's equations than to have them fit the experiment...It seems that if one is working from the point of view of getting beauty in one's equations, and if one has a really sound insight, one is on a sure line of progress. (In Koestler, 1966, p.246)

### INTRODUCTION

This thesis set out to identify specific criteria used to evaluate an effective musical performance, and the aural skills which facilitate this. To provide as much detail as possible to the growing picture, it was necessary to identify teachers' methodology in training aural development and ascertain what they think, and what they teach in practice. These findings were then compared and contrasted with the performance criteria and aural-related assessment specific to the ABRSM. The implications for what was found will be discussed in relation to the three empirical studies (which comprise Part II), concluding with a proposal for new or desirable methods of developing aural ability with the specific intention to integrate these skills with performance development. Additionally, recommendations will be put forward to develop ways of assessing aural skills within the context of the ABRSM's performance examinations. This will involve outlining ways for examiners to evaluate aural abilities within performance itself, complemented by separate tests that are more relevant to the perceived requirements of aural development in relation to performance ability.

### SUMMARY OF FINDINGS

The findings of Part II of this thesis provide some insight into the perception and assessment of performance-related aural skills. Study One has shown that teachers and their pupils are frequently unaware of the relationship between aural skills, as they are currently defined through the ABRSM's test, and performance ability. Paradoxically, as a result of this, the training of aural ability tends to be assessment-led, and thus leads to the concept of aural skills divorced from performance. However, once the distinction between testing and performance was established, interviewees were not only able to identify aural skills that are pertinent to

performance, but also viewed the acquisition and application of aural skills as fundamental to an effective, musical performance. Fundamentally, interviewees emphasised the need to integrate the training of aural skills with performance ability. The underlying reason given for this was that performers need to understand how these two phenomena are connected, which in turn facilitates the transference of these skills to enhance each performance, and ultimately to 'feel'.

Interviewees identified the most important aural skill as aural imaging, in conjunction with effective active-reflective listening. However, the use of sensory feedback need not purely be an acoustical phenomenon; responding to both kinaesthetic and haptic cues was also regarded as essential reference points for performing musicians. The reliance on these three sensory feedback mechanisms however, was viewed as having varying importance for different instrumental-groups. It is of note that interviewees suggest that aural skills in general, and aural imaging in particular, may vary in importance depending upon the instrument played. For example, it could be claimed that violinists rely more on referencing auditory feedback than do fixed-pitched instrumentalists. And further, there seems grounds for suggesting that the degree to which instrumentalists reference the other sensory cues also depends upon the instrumental group. For example, the acoustic-aural imaging used by a string player is arguably not as essential for a pianist, who may rely more on kinaesthetic feedback. In particular, the evidence broadly supports the view that performers image with respect to the timbre of their instrument. The implications these findings have for assessment purposes will be discussed under the appropriate heading.

The training of aural imaging, however, is somewhat disparate. Interviewees most commonly use singing as a tool to facilitate and evaluate its development, a skill acquired initially away from one's instrument. However, when referencing the ABRSM Practical Examinations, singing was viewed as an inappropriate response to assess aural skills.

The importance of understanding that is attached to the development and appropriate realisation of these skills is uncertain. Essentially, this revolves around the debate of whether the understanding is conceptually verbalised or realised through a musical performance. However, in spite of this, all agree that understanding is revealed through the ability to apply aural skills to appropriate performance situations. This is demonstrated through a musically informed performance.

Study Two revealed that all of the ABRSM's sub-tests adequately distinguish between good and poor performers, with the vital exception of the aural sub-test. There may be many reasons for this disparity yet none can be conclusive. For example, the scoring system might not be discriminative enough or another possible interpretation could be that, as teachers and candidates are unaware of the relationship between these tests and performance, then it is highly likely that their results would not reflect their performance ability. However, there seems grounds for suggesting that aural skills, as they are currently assessed, are too narrowly defined.

This hypothesis led to the exploratory study in chapter X. This investigated the possibility that different instrumental groups may use aural skills to differing degrees. In particular, it aimed to provide a vehicle of assessment through which aural, kinaesthetic and haptic cues are referenced without limiting the sphere of performance to a particular instrument. In essence, an unprepared-performance task was designed to access and assess relevant skills that two fundamentally different instrumental groups used (in this case the violin and piano). Some items were more distinguishing than others. However, there are grounds for suggesting that an unprepared-performance task might be a possible tool through which future research can explore and design methods of assessment.

## DISCUSSION OF MAIN FINDINGS

### The Skills and Abilities that Make Up an Effective Performance

We have seen that interviewees naturally divide an effective performance into three categories: musicality (encompassing the important element of 'feel'), communication (the art of conveying 'musicality'), and technique (a domain-specific facility). All are inseparable and do not exist *in vacuo*; an effective performance is the result of an amalgamation and necessary integration of these in their totality. Ultimately though, interviewees perceive a competent performance as 'musical'.

### Musicality

This thesis began by outlining some of the main theories that underlie the concept of musicality. Although variously defined, most researchers, psychologists, educationalists, and musicians describe an effective performance as being musical, deriving this conclusion from the assessment of skills that underlie 'musicality' and performance (Seashore, 1938; Wing, 1939; 1940; Revesz, 1946; Mainwaring, 1947; Drake, 1954; Kyne, 1967; Bentley, 1969; Elliott, 1987; Sloboda, 1985; 1988; 1991; 1994; Bruner, 1990; Pratt, 1990; Boyle, 1992; Persson, 1993; ABRSM, 1995; Papousek, 1996). Whilst it is recognised that most authorities imply that an effective, musical performance must combine aspects of the intellect, the physical and the emotional, there is a lack of a working definition.

We have seen that disparate yet complementary definitions of musicality have led to a difference in approach to teaching, assessing, and investigating this phenomena. This present thesis aimed at transcending this problem by bringing together the various categorisations of musicality, in order to establish a cohesive working definition of musicality. This was partly achieved by incorporating the views of these three main disciplines, whilst maintaining the empiricism and theoretical stances of all.

It is argued that this thesis has gone some way in uncovering the properties that may encompass such an elusive term as musicality. There seems ground for suggesting that the effective realisation of aural skills is central to musicality. Moreover, interviewees identify three important ingredients of musicality which the literature does not identify as performance-related aural skills; essentially, interviewees assert that understanding, 'feel', and the communication of these are seminal to a musical performance. Underlying the development of these skills are inner hearing, active listening, and responding to sensory feedback.

If this area of music psychology is to progress, a universal definition of musicality across music psychologists, musicians and teachers is required, alongside its various manifestations; to attain this, a confluence of all contributory disciplines is called for (Hargreaves, 1986). In Great Britain, there still remains a poverty of interdisciplinary approaches and belief systems. Although the current findings cannot claim to universally define musicality, we have come some way in uniting the disparities as far as it concerns performing musicians. Priest's (1989) definition of a musical performance echoes the findings of this thesis. He states that musicality

...is recognised by those who have it, but which is difficult to define in a way acceptable to all. Most definitions include the ability to give a committed performance, to play expressively and to communicate in a meaningful way...some aspects [are] skills which lead to this ability to give a 'musical' performance. (p.176)

#### Inner hearing and active listening

Interviewees agree that the most pertinent aural skills in performance are aural imaging, active listening and monitoring and adjusting to sensory feedback. Essentially, these abilities encompass the ability to hear inwardly the music before being able to externalise and communicate it. The literature also identifies aural imaging as essential to a musical performance (Seashore, 1919/1938; Clarke, 1987; Sloboda, 1988; Priest, 1989/1993; Pratt, 1990; Gordon, 1993; Brodsky and Henik, 1997). Aural imaging interacts with active-reflective

listening and the ability to adjust the intended performance through the feedback of the sensory receptors. These are all interactive skills, one cannot exist effectively without the others. The effective application of these skills was viewed as the essence of musicality and communication.

### Understanding

The development and, by definition, the conception of this understanding by interviewees and performers is one of the key reasons for the apparent disassociation of aural skills, as they are assessed by the ABRSM, and performance proficiency. Essentially, this disparity revolves around the nature and manifestation of performance-related understanding. Fundamentally, it is the debate between the need for declarative versus procedural knowledge.

Interviewees discussed two distinct, yet rather nebulous, definitions of understanding. The first can be characterised as a conceptual understanding, where knowledge is concerned with factual information. It is the intellectual grasp of the context and structure of the music and its relation to the whole. This classification of understanding is generally the common usage of the concept. Whilst not exclusively relying upon this type of understanding, the literature also emphasises the need for an intellectual and declarative form of musical understanding (Crane, 1915; Lester, 1987/1995). However, the second type of understanding, which does not preclude conceptual knowledge, goes beyond the conceptual realm into the province of implicit knowing. This was described as a 'feel' for the music, a more instinctive, and inner response to performance than knowing *that*; it is knowing *how*. It is the ability to realise the function of expression within its contextual significance, and to communicate this. The literature also supports this need for a sense of 'feel' (Clarke, 1988; Bruner, 1990; Rooley, 1990; Priest, 1993; Davidson and Scripp, 1994). Ultimately, this 'feel' is the result of reflective perception, appraisal of the relevant cues, and interpretation; it is the stamp of authority on the performance. It is the functional understanding and realisation of these skills in performance that is paramount to musicality.



It may not be going too far to suggest that the ABRSM's aural tests require a knowledge that is fundamentally declarative. Indeed, the overtly declarative means of assessment which is employed may hinder those who possess an 'implicit' understanding of how music works. If one is testing the acquisition and transferability of musical skills, as the ABRSM purport to be doing, then the prepared-performance should reveal these skills, which, if it is felt necessary, could be confirmed by performance on the sight-reading task. There is scarce evidence to suggest that the present aural tests provide any meaningful additional information.

The comprehension and realisation of aural skills in performance may be the crucial ingredients necessary for an effective and musical achievement. Indeed, the literature also tends to support this perspective. As Clarke (1987) elucidates, a musical performance is where a performer brings out 'expressive principles' that convey a certain 'expressive characterisation'; it is the development of knowledge and understanding that enables the performer to do this. It is the bridging of the gap between this and performance-related aural skills that is identified as the means to an effective, musical performance (Clarke, 1987). Although the characteristics and constitution of this understanding remain uncertain, the present research tends to suggest that an implicit, insightful and functional understanding of the way in which aural skills enhance performance efficiency is seminal to performance proficiency and musicality. It is therefore necessary to provide an integral approach to training performance-related aural skills. There may be a particular learning style that develops and facilitates self-awareness and the ability to respond effectively, yet the tendency of music psychologists to approach such research through cognitive explanations needs to be addressed (Hargreaves, 1986). It is proposed that the basic nature of this understanding can be gleaned from the way teachers train performance-related aural skills.

The pertinence of understanding for a performer can be seen in the National Curriculum, where it is suggested that musical understanding can be demonstrated by 'showing awareness', performing with fluency and expression, and responding sensitively (U.K. Council, 1993). The National Curriculum recognises that understanding of form is a musical response, not just an

abstract understanding. Pupils are required to communicate this understanding through effectively organising musical relationships which are coherently organised. The relevance to this thesis is that assessment is activity-based and contextualised (QCA, 2000).

This thesis proposes that the way of knowing is through empiricism and pragmatism, where the mind 'has the capacity to imagine and predict outcomes, as well as re-combine, analyse and categorise sensory impressions' (Helmholtz, 1954, p.52). This knowledge must assume universal import and value. The introduction of an organisational body such as the QCA, which evaluates, monitors and standardises GCSE, A and As level music education, may be expedient in this process. We need to test whether skills are relevant and generalisable outside the immediate context of examinations. Teaching and learning should be interactive (pragmatic), not purely as a means to pass examinations.

To explore the cognitive and anti-cognitive approach to learning, one might envisage a study involving perceived and actual responses. For example, an improvisation session could be recorded and the subjects could produce feedback about what they had done, or aimed to do. The material could then be played back to them, resulting in a qualitative analysis of what they are doing. Indeed, Maxwell Davies (in Lowery, 1963) and Cziko (1986) assert that the essence of musicality is seen through the ability to improvise.

### **Redefining Aural Skills**

The findings from Study One suggest that the traditional concept of performance-related aural skills needs addressing; indeed, it is proposed that the definition of aural skills should be broader, and incorporate skills that have not generally been viewed as aural skills. It is argued that aural ability does not just pertain to the ear; it also encompasses the realms of 'feel' (the concept of understanding), and haptic, kinaesthetic and aural sensory perceptions.

Many of the elements which it was agreed produce an effective performance incorporate the use of developed aural skills; these incorporate acoustical and timbral awareness, and the ability to 'hear inwardly'. The quest for meaning, 'feel' and its outward manifestation lies in the realm of action; it is through *doing* that we learn the essence of performance and the acquisition of transferable skills (Bruner, 1990). This departure from the 'traditional' use of the term 'aural skills' will ultimately result in a rethinking and reworking of this concept.

It is proposed that understanding and the related development of self-monitoring skills is the pivotal point by which the acts of thinking and doing simultaneously are either effective or redundant (Regelski, 1975; Fowler, 1988; Davidson and Scripp, 1992).

Such judgement exercised repeatedly in myriad similar situations, practised and refined to the point of automation, is the essence of artistry in performance...Even when technical capacities are safely locked away in physical memory, the elements of judgement and choice remain - in the form of decisions of taste and of style. (Howard, 1982, pp.181-185, as in Fowler, 1988, p.28)

We may be able to abstract, encode and realise something but may be unable to verbalise it.

### Teaching Performance-Related Aural Skills

The various methods interviewees use to train performance-related aural skills are fundamentally aiming to develop a functional understanding of how aural skills relate to and inform performance. This in turn facilitates musicality and communication, ultimately through the development of feel and sensory perception.

At a global level, interviewees use improvisation and playing by ear to encourage imaging, listening and responding to feedback; these are essentially tools to engender authority and ownership. To train the inner ear and active listening, interviewees use singing. Underneath these qualities, interviewees unanimously train a sense of 'feel'. Overwhelmingly, movement is seen as crucial to developing this.

Throughout all of the most effective ways of training performance-related aural skills, it is the active involvement of the learner that is paramount to knowledge acquisition. It is the involvement in the performance itself, rather than the intellectual, abstract training, that develops the necessary understanding of aural skills in performance. The most pervasive theorists in the literature also advocate action-related learning; it is only through this that a meaningful understanding of how aural and performance skills interact can be developed (Cziko, 1986; Bruner, 1990; Davidson and Scripp, 1994). The crucial role of good teaching is acknowledged by the ABRSM; they have set up a programme of development which is available to all music teachers. However, Study One reveals that teachers are far from confident about training performance-related aural skills.

We need to identify the difficulties encountered when teaching aural skills and then implement a method that works. The problem is that aural training has been and is often tailored to examinations; radical reversal of this doctrine needs to pervade the whole of performance teaching. In so doing, any form of aural testing which is relevant to the performance domain should be immediately recognisable as a means of assessing skills that directly feed into performance ability.

### **Assessment**

Although Study Two shows that the sub-tests in the ABRSM's performance examinations adequately discriminate between good and poor performers, the aural sub-test only marginally does so. And further, the aural-test scores correlate poorly with the other subtests, but more markedly so with the overall examination mark. However, the reasons behind this result are unclear. It could be argued that, as the ABRSM is assessing 'rounded musicianship' then the aural test marks may not greatly discriminate between good and poor performers. However, as all the other sub-tests effectively mark out good performers and significantly relate to the overall examination mark, it seems somewhat strange that it is only the aural-tests that do not reflect performance ability. Possible interpretations could also suggest that training is at fault.

As we have seen, interviewees divorce the concept of skills assessed in aural tests from performance-related aural skills. Consequently, one could suggest that candidates do not perceive the relationship and so perform badly, or that training is left to the last moment and the candidate is therefore insufficiently prepared. However, there seems evidence to suggest that sight-reading is approached with the same attitude. Nevertheless, in contrast to the aural marks, sight-reading marks are positively and significantly related to performance ability and the overall examination mark.

It is argued, as a result of the empirical investigations and the literature review, that aural skills, as they are currently defined and assessed by the ABRSM, are too narrow. All three of the studies point towards the domain-specificity of aural skills. This has a variety of implications, first, that musical skills and knowledge are utilised differently and to varying degrees by different instrumental groups. The Board's aural tests do not allow for this diversity of relevance, neither do they embrace it. They do not assess intonation or audiation, skills which have shown to be crucial to certain instrumental groups. Furthermore, there is increasing evidence to support the hypothesis that instrumentalists reference their particular instrument when perceiving and interpreting audio and visual cues. The use of the piano for test administration is therefore deemed to be inappropriate for practical musicians. These oversights need careful consideration, which will either lead to a redesign of the aural tests or, arguably more appropriate to this type of examination, abolished altogether. More importantly, a redefinition of the term 'aural skills' aims to delimit and expand the boundaries of the ABRSM's traditional usage.

But first, let us examine the fundamental areas of the ABRSM's aural tests that raise concern .

#### Declarative versus procedural knowledge

Part of the ABRSM's aural test requires an explicit, factual knowledge of specific musical aspects. However, interviewees argue that this type of understanding is unnecessary and unrelated to performance proficiency. We have seen that both the developmental tools and the

subsequent learning and acquisition are based around procedural knowledge. Performers are encouraged to develop an insightful understanding of the function aural skills have in performance, and to realise these skills, not, as they are generally assessed, through the ability to name and talk about this at the intellectual level, but instead to effectively apply this understanding to other performance situations.

This is not to dismiss the relevance of discussing musical phenomena, however. Indeed, interviewees often encourage peer-group discussion, yet this must not be decontextualised. This is only employed to inform and enhance understanding when it is of benefit to performance itself. More precisely, discussion revolves around aspects of musicality. For example, to encourage a 'feel' for the music, in relation to pulse or rhythm or any other communicative aspect, discussion is used to provide the performer with a model from which to associate certain sensory responses. Discussion then, is used to explain expressive devices rather than intellectual facts; it is used as a developmental tool, not as a means of assessment.

A combination of the intellect and a feel for the music performed creates a ripe situation for a performer's musicality to flourish. In Study Three, both of these aspects have been incorporated and tested for, allowing for both to exist without compromising or disallowing those who cannot verbalise their knowledge. Whether this study equally assesses both implicit and explicit knowledge is unclear; further development in this direction is required before both types of knowledge are unequivocally assessed without a predilection for one type over the other. One way of achieving this would be to allocate *equal* scores to a performer who displays a particular type of knowledge, in spite of the manifest response. This would provide a more objective measure of knowledge in that the scoring propensity would not be biased toward a particular type of response. Indeed, Study Three did not rank responses in accordance to whether they were verbalised; the scores were meant purely as an indication of the type of response, not, as it appears, as a hierarchical ranking in terms of ability. It would also be desirable to systematically monitor the types of responses (e.g. either verbal or through demonstration) which could then be analysed in relation to overall performance on all of the

tasks and performance skill in general. This would perhaps provide an insight into the 'real' value of declarative versus explicit understanding.

### Domain-specificity

All three of the empirical studies have suggested that the aural skills required for an effective performance may be domain-specific; the argument for the domain-specificity of aural skills is further developed by the notion that performers image with respect to the timbre of their instrument. The interviewees in Study One suggested that aural imaging may be a domain-specific skill, proposing that performers employ imaging by referencing the timbral characteristics of their own instrument. In addition to this, skills such as aural imaging may vary in their importance, depending on the instrument played. Interviewees asserted that pianists, for example, may rely more on kinaesthetic feedback than auditory information, and brass instrumentalists may be more reliant on haptic and kinaesthetic feedback than on auditory information. The findings of Study Two also provide some trends that may suggest this. It was found that violinists tended to score better on the ABRSM's aural tests than did pianists and wind players. Because the ABRSM's tests are primarily auditory skills, these findings could suggest that violinists rely more on auditory cues than do pianists and wind players. However, these are tentative findings and consequently should be interpreted with caution. Study Three, however, also gives support to the theory that aural skills may be domain-specific. Task 2, which consisted of identifying an embedded-melody, was specifically designed to assess aural-imaging whilst controlling for timbral effects. Good violinists scored significantly better on this task than good and poor pianists; indeed, there was no significant difference in scores between poor violinists and good and poor pianists. Having identified aural imaging as an important aural skill, it became apparent that aural ability may be dependent upon the instrument played. That is, although aural imaging may be vital for string players, it is less important to pianists, for example, except in sight-reading and improvisation. Studies Two and Three provide some support for this hypothesis yet the limited amount of data is too sparse to draw any decisive conclusions. However, the literature also supports this perspective (Regelski, 1975; Cziko, 1986; Priest, 1989; Reaney, 1989; Cook, 1996; Stowman, 1996; Brodsky

and Henik, 1997a; Edlund, 1997), and in conjunction with the qualitative findings of Study One, the ABRSM's tests do not seem to adequately reflect, and consequently assess, all musicians' skills.

It is therefore argued that the timbre of the piano may inhibit a candidate's full discrimination and thus, response due to the inability to relate the timbral cues to their specific instrument. Indeed, it may be further argued that the necessary understanding of the relationship between the aural stimulus and performance is hindered by the lack of reference points. These findings would suggest that the use of a piano for administering the ABRSM's aural tests does not provide an equitable or universally valid assessment of aural imaging in particular, and of domain-specific aural skills in general. However, in Study Two pianists do not score significantly better on the aural tests than any other instrumental group. More serious perhaps, is that the perceived disparity between the aural tests and performance proficiency generates a view that the aural tests are divorced from performance-related aural skills.

Gephardt (1978) looked at whether timbre affects responses to aural perception. He found some evidence that familiarity of the instrument used to administer tests increased accuracy. We all get used to the piano sonority as it is the most frequent instrument used to administer aural tests, but is it more relevant and desirable to use one's own instrument? One of the reasons why this may be so is that performers often 'finger' or 'sing inwardly' the response before externalising it (Mainwaring, 1931; Seashore, 1938; Gephardt, 1978); the importance of imagery and kinaesthetic cues are evident, as the timbre of an instrument sometimes gives the pitches away.

In support of these findings, Thackray (1978) emphasises the importance of '...sounds to the visual position [on one's instrument] to associate those sounds with the feel of playing them'. (p.xi). However, 'not all of the felt experiences of mind result directly in acts or in any other overt behaviour' (Regelski, 1975, p.162). Regelski (1975) continues that some stay in the brain as images, others connect with other mental acts and do result in behaviour, whereas still others 'cause us to perceive the mental actions that we call subjective feeling' (p.162).



The idea that aural skills may be domain-specific has many implications, perhaps the most pertinent one to this thesis is, if these skills are applicable to instrumentalists in varying degrees, then it seems unjust to subject different performers to the same aural tests as they currently exist in the ABRSM's performance examinations. However, it is recognised that the ABRSM's tests are designed because of their pragmatic nature; indeed, any change to this current format will need careful consideration of the practicalities of new tests. However, in a world where education is continually advancing in synchronisation with new technology, and is scrupulously validated and monitored, and rightly so, it is not acceptable for such a 'powerful' and influential business to remain placid. The existing methods of assessment need to be challenged, resulting in a product which is valid and serves the interests of its consumers.

Study Three has indicated that sensory skills and perceptions can be assessed within a context that is generic to the instrument-domain. As an unprepared-performance task is entirely geared toward the instrument, then these tests would not only be applicable to all instrumentalists but would also be domain-specific. This seemingly paradoxical statement nonetheless seems to be the way forward for assessing such skills.

### **The Unprepared-Performance Task**

The skill of sight-reading has been expounded upon by many as assessing skills pertinent to musical proficiency (Seashore, 1938; Luce, 1958; Regelski, 1975; Sloboda, 1976; Priest, 1989). Another reason for using an unprepared-performance task is that the effective use of the inner ear can be determined by how 'quickly and accurately [a performer] can "read" rhythm', applying behaviour based on prior experience and comprehension (Regelski, 1975, p.45); the visual cues of this task are imperative for the auditory, kinaesthetic and haptic cues to be fully utilised. However, the sight-reading test of the pilot study revealed its shortcomings. It is argued that the unprepared-performance task addresses these constraints in that it is purposefully designed to assess these very skills; thus, this test is subsequently different in nature and design to a sight-reading test.

Study Three has been an exploratory search for ways of accessing and assessing skills that are directly related to, and used whilst, performing. It is stressed that these are therefore not *tests per se*, but are presented as a guide to the development of more effective and efficient tests. If there is domain-specificity, then the proposed tests have the added advantage of accommodating this.

Although the unprepared-performance task developed and piloted in Study Three does discriminate between good and poor performers, some of the sub-tests spread the scores more than others. One might suggest that such a task utilises skills that are generic to the instrument domain, in this case the violin and piano. By using a task that is specific to the instrument, the relevant auditory, kinaesthetic, haptic, and/or visual cues that may be referenced to provide a musical performance are not limited to the traditional concept of 'aural skills'.

#### Pulse and rhythm

On Test 1a, poor performers tend to perform relatively well. This may suggest that a sense of pulse and rhythm is one of the primary skills needed to perform and so is developed prior to more advanced performance-related aural skills. However, there could be many interpretations to these findings. The scoring system could be at fault. Indeed, the three point scale used may be too limited to sufficiently spread the difference between good and poor performers. The criteria used to allocate scores may also be too flexible. It is suggested that future research could expand the range of the scale whilst tightening the criteria used to delimit these.

One could also propose that poor performers are not necessarily poor sight-readers, yet the findings of Study Two suggest that this is not so. It might be argued that the time allocated to preparing for the task is either too long or too short. Further research might explore the possible effects of time variation on the ensuing tasks; more distinctive results may ensue.

## Understanding

Task 1b can only provide tentative interpretations. As this task distinguished more markedly between good and poor performers, this may suggest that imaging and responding to sensory feedback is a reflection of a good performance. Indeed, the understanding that was demonstrated to verify the findings also suggests that this may be the essential link between aural and performance proficiency. However, the coding of verbal responses of understanding, as opposed to demonstrable response, may have unwittingly inflated the results. As the scoring of responses was not biased towards a verbal or demonstrable understanding, this possible bias was mitigated.

Perhaps if the criteria used to score the verbal responses were more specific, then the allocation of a particular score may be better determined which, in turn, would add weight to the viability of the tests. Allocating higher marks for verbal understanding, rather than for less articulate understanding or demonstration in the unprepared-performance task, is viewed as a fault in the scoring system; the marks should be viewed purely as a way of coding responses, not pertaining to a hierarchy of excellence. The verbal responses were regarded as valuable in that they provided confirmation of the assessor's assessment. In the light of administrative experience, the design of the scoring system needs amending. The reliance on this form of declarative knowledge needs addressing, making room for demonstrable, non-verbal behaviour (arguably just as informative and valid as verbal behaviour). If this is achieved, it is proposed that these tests may unite the two forms of understanding.

Perhaps understanding (either implicit or explicit) does facilitate the ability to combine performance and aural skills, but this cannot be presumed from Study Three. The whole area and role of understanding and knowledge, both implicit and explicit, needs further investigation. Perhaps neither explicit nor implicit understanding is predominantly needed; they need not be mutually exclusive. Indeed, both types may be an effective indicator of performance ability, which is ultimately revealed through musicality. It is no easy task to distinguish between the two as one must refer back to teaching strategy where it is possible that

the candidate's apparent misinformation or naiveté resulting from the nature of assessing aural is seen as adequate at best, or irrelevant at worse. The results of Study Two tend to verify this perspective, but conclusions can only be tentatively drawn as the individual marks for the sub-tests were not available, leaving one reliant on the aggregate scoring system.

### Expression and 'feel'

On Test 1c and Test 3, poor performers also performed adequately. Again, the criteria used for scoring may be questionable. The assessor thought it expedient to reward improved performance as the tasks proceeded. Because of this, poor performers may have more room to improve and were rewarded appropriately. This might well have inflated the poor performer's scores.

### The embedded-melody task

The results of Task 2 suggest that violinists may rely more on aural imaging than do pianists. Indeed, as there was no difference between good and poor pianists, or poor violinists, this task did not seem to reflect skills that pianists rely on.

The need to measure aural imaging is stressed by Seashore (1919), who asserts that '...it is in terms of this that we relive music in the nature of sounds which we have once heard and express new music in creative imagination' (p.339). However, Seashore adds that this can only be measured by introspection. Indeed, mental imagery '...does not lend itself accurately to psychophysical measurements' (Seashore, 1919, p.161). However, there has been some research demonstrating aural imagery through observable consequences of internal processing (Zenhausen, 1978; Kosslyn, 1980; Shepard and Cooper, 1982; Finke, 1986, in Welch, 1990, p.2). These often incorporate sight-reading tasks as stimuli; perhaps the sight-reading test in the ABRSM's performance examination is where aural imaging and the ability to monitor and respond to aural feedback is an adequate assessment of these. However, candidates are given credit for fluency and continuity and if one stops to correct that which does not concur with one's aural image, the ABRSM penalises this. This surely is the biggest difference between sight-

reading and the 'quick study' [for which the preparation time might be anything between half an hour to a day].

Fundamental to the design of the embedded-melody task, the subject is free to respond by demonstration, verbalisation, or through the very act of playing the music; the assessment is to evaluate behavioural objectives, regardless of their derivation. It is acknowledged that older performers are more likely to be ready for analysis, perception and identification than younger ones, to use terms and to understand them, whereas younger ones may turn more readily to demonstration and playing.

Perhaps this task is trying to assess covert criteria, that which is not immediately accessible from performance. Knowledge is fundamental to learning; if one can understand the *whys* and *wherefores* of education, then a fundamental base of knowledge will be gained through experience and understanding. It is clear from the pilot study and the literature that pupils, and even some teachers, do not understand the purpose of the ABRSM's aural tests in relation to the other components of the performance examination. The meaning of musical events lies in their relationships, and these must be explored in terms of the dynamic forces which bind them together. This is the process through which such a melody can be identified; it is also of note that this process is at the root of improvisation, which has been suggested as a possible extension of these tests into the higher grades.

...fine differences in timing or tuning may be noticeable in very short sequences, but be completely unrecoverable in longer ones. *Failures* of discrimination in the experimental task may be due to lack of cues that would be supplied by a more extended context. (Sloboda, 1985, p.153, italic in original)

Sloboda's statement gives credence to the use of the embedded-melody task, as it is placed within the context of a whole section of music. The fact that the ABRSM uses very short, out of context extracts may indicate their undesirability. However, it is acknowledged that this depends upon the grade, the test, and the purpose for which it is required. Furthermore, the

embedded-melody is distinct in both rhythm, pitch and harmony, which adheres to Sloboda's (1985) view that:

When listeners hear a melody, their processing of it normally involves the attempt to retrieve implicit harmonic and rhythmic structure. Representing the melody to themselves *means* recovering this structure. In contrast, a chord sequence can be heard without any attempt to recover an 'implicit melody'. (p.52, italics in original)

If performance is an elusive thing to assess, even more so are the aural skills used to facilitate this skill. An effective, musical performance is a continuum without sharp breaks; by examining the component parts and the whole it is hoped that the elemental structure will be revealed. The assessment of aural imagery, or the corresponding kinaesthetic and haptic cues, was the objective of Task 2.

In specific relation to Task 2, in experimental studies researchers often use a distracter<sup>1</sup> to ascertain internal representations; for example, on a second hearing of the embedded-melody, subjects are often required to whistle or hum while simultaneously pointing out the appropriate melody (Brodsky, 1997; Shifres, 1997). The difference in the task in Study Three is that the subject is allowed to actively participate in identifying the correct musical passage, without any 'distracter' to interfere with the process. Any response that indicated awareness of the melodic location or content was allowed. This liberal acceptance of response was designed because it is believed that some 'controls of a skilled activity generally function below the level of consciousness on which that activity takes place. The code is a hidden persuader' (Koestler, 1966, p.42).

Covert behaviour can become overt through speech and, for psychomotor mistakes, the subject can be asked what was wrong and how it should go (Regelski, 1975). However, Regelski (1975) warns that there are 'varying degrees of ability and readiness with regard to verbal behaviours, which are not the same as musical behaviours. They are a means, not...ends of

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<sup>1</sup>. 'Any event or stimulus which diverts attention'. (Reber, 1985, p.209)

value in themselves' (p.220). Some verbal behaviour may be different, and mean different things, to others.

### Ensemble and communication

There are many problems with Task 4. Although it discriminated between good and poor performers, this spread of scores was not particularly wide. Additionally, the tasks for violinists and pianists were fundamentally different. To maintain uniformity for examination purposes, there needs to be a situation whereby the ensemble listening-skills of pianists are assessed. For example, what they've read in the previous tasks could be a harmonically self-sufficient half of a piano duet, which the examiner later completes.

The aural skills required to perform as part of an ensemble are widely recognised (May and Elliott, 1980; Kinney, 1981; Pratt, 1990), the ability to communicate musically through watching, listening and responding to others all indicate 'an aural understanding of the printed, coded message' (Priest, 1989, p.176). In ensemble performance, the performer follows his or her cognitive map whilst interacting with the real-time performance and with others who are involved (Davidson and Scripp, 1994). A performance is effective if 'it can communicate the performer's expressive intentions', through internal representations (Shifres, 1997, p.599).

### **THE WAY FORWARD**

Ultimately, the new tests need to be introduced with proper facilities and support for teachers and performers alike. Workshops, literature and perhaps a help line (or better still, a forum set up on the internet to share and discuss mutual concerns) need to be established so that the implementation of the tests can be monitored, with a view to increasing client-understanding. The fact that this research highlights the benefits, as well as the problems, of the ABRSM's tests at present, in conjunction with consultation and further study to improve and utilise the present findings, would surely assist the Board in maintaining client loyalty; indeed, it may

even encourage more teachers to transfer their business to the Board. Although the ABRSM has redressed some earlier shortcomings by introducing new tests, with specific guidelines and seminars to support and aid teachers, and much supplementary documentation in written and aural form, these revisions do not seem to constitute the most desirable finished product.

To refine the ABRSM's tests along the lines of the arguments advanced in this thesis, it was felt that the realm of performance should remain the ultimate vehicle through which to assess aural skills. The unprepared-performance task, which was derived from a sight-reading task, provided the forum in which performers would demonstrate the intrinsic understanding and application of aural skills proper to performance, through the ability to *transfer* their knowledge and experience to other performance situations. Howard (1982) provides a neat summary of the essence of transfer:

[imagination] allows us to adjust our acquired know-how and techniques to particular cases and even to revise them or transfer them to new realms of application. (p.31)

This performance task also provided an approach medium through which all instrumental skills would apply (as sight-reading is specific to the instrument domain). Thinking and doing in performance also adheres to the theory that one learns and applies previous skills predominantly made manifest by the very act of *doing*; this is the dependent variable (Carlsen, 1969; Garvey, 1977; Howard, 1982; Sloboda, 1984; Edwards, 1986; Shuell, 1986; Fowler, 1988; Priest, 1989; Bruner, 1990; McPherson, 1996; Godoy, 1997). Clarke (1985) verifies the context of performance:

The more interesting features of musical understanding may be expressible only in a musical medium. (p.209, in Shifres, 1997 p.600)

In that this concerns, to an extent, the examination structures of the ABRSM, an unprepared task would seem both viable and desirable. However, this task would need to be slimmed down to comply with the requirements of the ABRSM's time allocation for each Grade examined. Traditional sight-reading tasks are already present in the ABRSM's performance



examinations, a skill which is based on how an instrument works, on how to manipulate, communicate and transfer performance-related knowledge to other performance situations; arguably, it is a realm through which pertinent sensory skills may be revealed. Although the Board asserts that it should not require its examiners to assess musicality from performance alone, it cannot claim this about the sight-reading task. If, as the Senior Representative of the Board asserts, the aural tests are present to distinguish the pupil from the teacher, then the presence of the sight-reading task should render these obsolete. Indeed, if we return to chapter IX and review the results of the ABRSM's sight-reading task, it can be seen that sight-reading ability is positively related to a candidate's performance ability. The development of the sight-reading task which was piloted in Study Three into an unprepared-performance task produced a form of assessment which was able to distinguish aural skills more directly related to performance than perhaps the present aural tests seem to do. Such a form of assessment may be welcomed by the Board. As Lehmann (1969) exhorts, 'we should not accept assumptions with no other basis than tradition' (p.25).

However, there are pragmatic drawbacks to the implementation of such a task. Study Three used the subject's own instrument to administer the tests, that of the violin and piano as appropriate. As the Senior Representative of the ABRSM has already discussed (in chapter VIII), this remains practically unviable. It was suggested that specialist examiners only assess one particular instrument at any one time, but this raises problems with limiting candidates who play the same instrument to one particular location which, again, would be pragmatically untenable; perhaps, if the examinations were spread out over more weeks, then 'specialist' examiners could each visit a number of centres. However, with the advent of mini-discs, and the wide spread use of audio tapes to administer tests throughout education, this 'imagined' problem could be overcome.

Future research could explore the findings of the small pilot study described in Study One, whereby trumpeters who previously were unsuccessful at completing the ABRSM aural tests were successful when the tests were administered on their own instrument. A large sample of

various instrumentalists could be divided up into those whose tests were administered on the piano and those whose tests were administered on the candidate's own instrument. The results could then be compared and contrasted. This would contribute to the important matter of making sure the tests are appropriate for all musicians.

It is important that further development of tests should begin by introducing small changes and piloting them. For example, Grade 1 to 5 examinations could develop an *embedded melody* with contour being the most detectable detail, progressing up the Grades with identification that includes pitch salience and other macro-structure details. This task is not necessarily assessing automated memory, it is also assessing the skills needed to judge and respond to a task 'on the spot'. If it is the skills that are being assessed, then time needs to be allowed for the task to be carried out as the process is not yet automated; this time allowance could be decreased in the higher grades.

To enable these findings to be developed for practical use, one needs to consider how the unprepared-performance task could be satisfactorily adapted to cater for both less and more advanced musicians than Grade V. From the findings of the literature, and the information gathered through the interviews in Study One, it is anticipated that further skills which require either auditory, kinaesthetic or haptic cues would be assessed. One way in which to do this would be to explore the potential assessment of improvisatory skills that would reveal developed 'aural' skills.

Aural imaging could be assessed using visual imagery as the stimulus for the lower Grades. For example, notation could be placed in front of the candidate and s/he would be required to compare the written score with an aural equivalent. This test could then progress through to the use of aural stimuli from which one is required to play by ear and improvise. Essentially, these tasks will be carried out on one's own instrument, allowing for the appropriate use of haptic and kinaesthetic cues where necessary. The improvisation task could gradually

introduce characteristics such as pulse, rhythm, harmony, aural imaging, expression and communication, continuously being encouraged and developed up to Grade 8.

If the challenge of 'building up knowledge and understanding of music in young people' (Senior Representative of the ABRSM) is to be met, then this thesis is seminal to the achievement of this. It identifies that there is a gap which needs closing; this gap is the understanding of practical implications for the use of aural/kinaesthetic/haptic/visual skills in performance (Clarke, 1987). This is the gap which needs to be bridged in devising aural tests (Thackray, 1978).

In order for this gap to be bridged, Seashore (1938) argues that the measures should reflect turning points in growth and training. And further to this, 'the guidance program often fails because it is done either by a mere musician or a mere psychologist' (Seashore, 1938, pp.299-300). Indeed, he proposes that the designer of the tests should be trained in both, which this thesis also proposes. We also need to allow the pupil to follow up from the results obtained. As Seashore verifies, 'the bare fact of low rating is of relatively little significance unless the real cause is revealed in the process of organising the measurement' (1938, p.301).

As Thackray (1978) relates,

Too often, it is felt, aural training is confined to certain limited aspects and skills which are required for examination purposes, such as sight singing. (p.v)

And further, though aural ability is

fundamental to all musical experience and skill, in practice it is often inadequately provided for in the study of music. (Thackray, 1978, p.3)

It is acknowledged that inevitably there will be substantial costs that the Board would incur to enable revisions to take place, yet it may be argued that the cost-effectiveness of this revaluation may outweigh the negatives. That is, the tests may have greater credibility and

validity, whilst simultaneously setting a new benchmark for the assessment of performance skills in music education. Minimum and accepted standards need to be routinely and sympathetically provided for; the total impact of the revaluation needs to be considered with care. These specific objectives need to be achieved if we are to progress.

## Chapter XII Conclusion

The use and application of aural skills whilst performing has been accepted throughout this century as a vital truism with regard to testing and assessing general musicianship, and in particular, performing musicians. However, the loose definition of these aural skills has led to a plethora of tests being developed to assess those skills which were assumed as being imperative to performance. The findings of this research have questioned these assumptions and have approached the whole concept of these skills with empirical enquiry. This has led to a re-definition of the very essence of aural ability, encompassing skills which have previously gone unnoticed. Indeed, the term 'aural skill' is somewhat loose, requiring new terminology to rectify the continuing scepticism and discontent that teachers and performers have in relation to the very notion of 'aural'. A working definition of aural skills needs to be introduced to enable a new approach to teaching, learning, monitoring and ultimately assessing these skills. In addition, it is important to establish the individual requirements and skills that are specific to each instrumental domain.

Aural skills and the assessment of them have always been isolated; this phenomenon is no longer an 'intellectual activity', but a practical one. No longer can aural, kinaesthetic and/or haptic cues be thought of in the abstract; they are directly relational to the instrument-domain and the performance-task in hand. Although the philosophical underpinnings of the ABRSM's practical examinations are acknowledged and supported, a new approach to aural skills, their training and their assessment is needed. The all-encompassing definition of aural skills, which I propose should be renamed 'sensory perceptions', does not solely involve auditory information; it also embraces the realms of 'feel' (the concept of understanding), haptics and kinaesthetics. It is felt that this redefinition provides the teacher, learner and assessor with a more appropriate approximation of the sensory skills necessary for performance. However, the most far reaching and yet tenable perspective is not what musicality is, but what a musical performance cannot exist without.

The ABRSM's aural tests have shown to be inadequate at addressing the real needs of practical musicians; separating sensory skills from the context of performance must surely misrepresent the evidence. It is proposed, ultimately, that one's aural (sensory) skills are what define an effective, musical performance. There is an argument for separating skills to develop them, but these skills are fully realised only when transferred back into context. The ABRSM, and its Senior Representative, have failed to uphold a valid rationale for implementing aural tests in isolation and through such a medium. ABRSM examiners could use aural tests in tandem with performance ability to diagnose areas of weakness, but should not, ultimately, form part of the graded examination. Examiners may well need to be trained differently, or more astutely perhaps, to identify the presence of musicality in a performance context.

No matter how hard we try to integrate aural tests with performance, we will not succeed so long as the understanding comes not from the performance itself but from fields surrounding it. Based on the findings, a comprehensive answer to what characterises a good performer does not necessarily lead to a prescription for remedying the poor performer. It is envisaged that the redefinition of aural skills, to sensory perceptions, will facilitate and/or reinforce the unity between these skills and performance ability. In so doing, it is anticipated that the knowledge-base and essence of musicality will, at one end of the scale, benefit music educators and instrumentalists, and at the other end, influence the training and assessment of music in performance examinations and in music education. The time has come to overcome the often defeatist attitude towards aural and, ultimately, open up a new perspective on music education.

## APPENDIX I

### ABRSM Test Rubric

#### Grade 1.

A. To tap the pulse of a passage of music in 2 or 3 time. The Examiner will commence playing the passage and the candidate will be expected to join in as soon as possible by tapping the beat, stressing where the strong beat falls. The candidate will then be asked to state the time.

B. To sing, as an echo, three short phrases limited to a range of three notes in a major key played by the examiner. The echoes should follow each phrase in strict time without an intervening pause. The key-chord and tonic will first be sounded and the pulse indicated.

C. To recognise a rhythmic change to a two-bar phrase played twice by the examiner, with the change being made in the second playing. Candidates will be required to recognise and tap or describe the change. The pulse will first be indicated. The examiner will be prepared to play both versions of the phrase a second time if necessary.

D. To identify certain features of a piece played by the examiner. The features will be confined to contrasted dynamics (*p/f*), gradation of tone (*crescendo/diminuendo*) and articulation (*staccato/legato*), of which the examiner will select one or two and advise the candidate accordingly before playing the piece. Questions on the selected features will then follow. Candidates are encouraged to use Italian terms in their answers where appropriate.

Grade 1 is a template used up to Grade 3.

#### Grade 2.

A. As in Grade 1 but with additional metre of  $\frac{6}{8}$ .

B. As in Grade 1 but with the range extended to five notes.

C. As in Grade 1 but now the candidate has to recognise a rhythmic or melodic change played in the major key. Candidates will be required to recognise and tap, sing, or describe the change. The key chord and tonic will first be sounded and the pulse indicated.

D. As in Grade 1 but with the additional need to identify tempo changes (*crescendo/accelerando etc.*).

### Grade 3

A. As in Grade 2 but with additional timings of  $\frac{9}{8}$  and 4.

B. As in Grade 2 but with the range extended to one octave in either major or minor key.

C. As in Grade 2 but there is now a four-bar phrase in a major or minor key.

D. As in Grade 2 but with the additional ability to recognise major and minor tonality.

### Grade 4.

A. To sing or play from memory a four-bar melody played twice by the examiner. The key-chord and starting note will first be sounded and named, and the pulse indicated. A second attempt will be allowed if necessary.

B. To sing five notes from a score in free time within the range of a third above and below the tonic in the key of C, F or G major. The test will begin and end on the tonic and will not contain any intervals greater than a third. The examiner will play and name the key-chord and tonic, and, if necessary, play each note after it has been attempted. Candidates may choose to sing the test from the treble or bass clef.



C. i). As Grade 3 test D, with the additional requirement for candidates to identify the general character of the piece.

ii). To clap the rhythm of a short extract played twice by the examiner from the piece just played, and state whether it is in 2, 3 or 4 time. They will be played without accompaniment.

#### **Grade 5.**

A. As in Grade 4 except it is a 'short melody' rather than specifically 'four-bar melody'.

B. As in Grade 4 with the amendments to sing six notes within the range of a fifth above and a fourth below the tonic in any major key up to two sharps or flats. The intervals will be no greater than a third except for the rising fourth from dominant to tonic.

C. i). As in Grade 4 with added requirement to identify the general texture, rhythm, form, style and period..

ii). As in Grade 4.

#### **Grade 6.**

A. To sing or play from memory the *upper* part of a two-part phrase played twice by the examiner. The key-chord and starting note will first be sounded and named, and the pulse indicated. A second attempt will be allowed if necessary.

B. To sing a short melody from score, with an accompaniment played by the examiner, in any major or minor key up to three sharps or flats. The key-chord and starting note will first be sounded and the pulse indicated.. Candidates can sing from the treble or bass clef. A second attempt will be allowed if necessary.

C. To identify the cadence at the end of a phrase, played twice, perfect or imperfect, and to state whether it is in major or minor key. The key-chord will first be sounded.

D. i). As 5 including phrase structure.

ii). As in Grade 5.

### Grade 7.

A. As in Grade 6, but this time the *lower* part.

B. As Grade 6, but up to four sharps or flats.

C. i). As Grade 6 but with addition of interrupted cadence.

ii). To identify the two chords forming the above cadence as tonic, subdominant, dominant, dominant seventh or submediant in root position, or tonic in second inversion. Candidates may alternatively use the equivalent roman notation. The key-chord will first be sounded and each chord played again.

iii). To identify whether a short passage, played once by the examiner, beginning in a major key modulates to its dominant, subdominant, or relative minor. The key-chord will first be sounded and named. Candidates may alternatively state the letter name of the key. ✓

D. i). As in Grade 6, test D i).

ii). As in Grade 6, test D ii). with addition of  $6_8$  time.

### Grade 8.

A. i). To sing or play from memory the *lowest* part of a short three-part phrase. The rest as

Grade 7.

ii). As in Grade 6, test C with the addition of plagal cadence.

iii). To identify up to four chords in the above cadential progression, played twice by the examiner, as tonic (root position, 1st or 2nd inversions), supertonic (root position or 1st inversion), subdominant (root position), dominant (root position, 1st or 2nd inversions), dominant 7th (root), or submediant (root). Equivalent roman notation alternatively. first, key-chord sounded.

B. As in grade 7, but accompanied by a higher part played by the examiner, in any major or minor key with up to four sharps or flats.

C. To identify 2 modulations, each played once by the examiner, beginning in a major or minor key. Passages may modulate to the dominant, subdominant, relative minor or major, or (from a major key only) to the supertonic minor. Candidates will be asked to name the new keys. Key-chord will first be sounded and key named.

D. To discuss matters relating to any musical features of a piece played by the examiner.

Candidates will comment on any 'interesting features' rather than to direct questions.

## Appendix II

### Interview Schedule: Teachers

Thank you for giving up your time to participate in this research.

I am looking at performance criteria used at different levels of musical development. The questions are related to this issue and I can assure you that you will remain anonymous.

#### **BIOGRAPHICAL DETAILS:**

**Date:**.....

**Name:**.....

**Specific musical training:**

**Occupation:**.....

**Instrument(s) played (stating no. of years):**

**Instrument(s) taught (stating at what levels):**

---

#### **Verbatim instructions and questions**

Regarding this interview, please do not relate your answers to what is perceived as the conventional methods of aural testing. If it helps, think of aural training as ear development.

Firstly, I'd like to begin by asking you a few questions about performance in general:

1a. What set of criteria would you use to evaluate an effective solo music performance? If it helps, think of a specific solo performance you have heard recently and identify what skills and abilities (or lack of these skills/abilities) made it a good (or bad) performance.

1b.. How would you train/teach these skills you have listed? Please be specific where possible.

2a. Would these criteria differ depending upon the developmental level of the performer?

For instance, would the performance assessment differ for the equivalent standards of grades 1, 5 and 8? If so, how? If not, why not?

2b. Does your approach to these criteria differ depending on the context (for example in an examination situation as opposed to a concert platform performance)? Please justify answer.

2c. Do these criteria you have stated in the assessment of performance, relate to your:

- Teaching methodology i.e.. What are your short and long term goals? How do you go about achieving these?;
- Practising techniques. (for example, how would you approach learning a new piece).

3. Does understanding influence the performance? For example, is being able to verbalise the music, e.g.. 'that's a minor third', an aid to performance skills, or does this lack of understanding inhibit performance? Please give reasons for your answer.

4. Do you think improvisatory skills are important in developing performance skills? Please give reasons for your answer.

I'm now going to ask you some questions on the significance of aural ability. Again, for the remaining questions, please do not relate your answers to what is perceived as the conventional methods of aural testing.

5. In the context of what you have said, do you think that aural skills (developing the ear) are important for the development of performance ability? Please justify your answer, showing what the relationship is. Between performance and aural skill development. In essence, please define 'aural skills'.

6. How do you think one would train the musician to acquire these ear skills? (what is the fabric of this training?)

7. Do you think aural development can, and should, be assessed away from the context of performance? What is the rationale for your answer?

8. How best do you think we can assess aural development (again, please specify your answer in relation to equivalent standards of Grades 1, 5 and 8)?

9. Does timbre effect the musician's ability to perceive and respond to conventional aural tests? E.G. Does the traditional use of the piano in administering aural tests pose a problem for non pianists? Please give your reasons

9b. Do you think that having to sing in an examination poses a timbral problem for the musician? Please give your reasons.

9c. Do you think that administering 'aural tests' on the candidate's own instrument and responding on their own instrument would be better at training and assessing aural development? Please give your reasons.

10. Do you think that the ability to sing is beneficial to a performer? Please give your reasons.

11. How has your background influenced the way in which you perceive performance and aural development? Were the two brought together?

12. Do you enter candidates for examination? Please specify why.

13. Before we end this interview is there anything else which you would like to add?

.....

## Appendix III

### Interview Schedule: ABRSM

First, thank you for giving up your time for this interview. As we have discussed on the telephone, and in the letter you should have received, I'm researching the significance of aural development to performing musicians. More specifically, I am focusing on the criteria the ABRSM uses to assess differing levels of performance ability. I can assure you that you will remain anonymous and no records of the interview will be kept with your name on them. Before we begin, is there anything you'd like to ask me?

---

I would like to start by asking you a few general questions concerning the nature of a good performance.

#### General

1. Could you clarify what the aims and objectives are of the Associated Board's practical examinations. What are they primarily assessing?

1a. Would it be fair to say that they are performance examinations?

2. What are the criteria used for assessing the differing levels of grades 1-8, for instance?

2a. How have you arrived at this breakdown of development? Are there any developmental theories that you have specifically used as a model?

3. As regards the other components of the examination, what are the aims of their assessment? (i.e. Sight-reading, scales, and aural tests).

3a. How do these other tests relate to the assessment of performance ability? Why do you have separate tests and not just the performance assessment itself?

4. What would you call a musical performance?

### **Aural**

Let us now turn to the specific issue of aural training and aural testing.

5. In 'these music exams', Jean Harvey states that the purpose of aural training is '...to ensure aural training is part of a musician's training'. Why is aural training so important to the performing musician?

6. What aural skills do you think are necessary to produce an effective performance? (How do these feed into performance?). Define what you mean by aural skills.

7. Would the lack of aural skills be apparent from the performance itself?

8. How does the aural test component relate to performance ability?

8a. Is that what these tests are measuring? How do you know that the tests are testing what you think they are?

9. What is the difference between the practical musicianship aural tests and those used in the Board's performance examinations? How are the criteria relevant and specific to performance ability as opposed to practical musicianship?

10. What is the best way to train these [performance-related aural] skills?



## **Development**

I'd now like to look at the developmental history of these tests.

11. When the aural tests were originally designed, how did you know what to assess and how to design the tests?

11a. How were the most recent tests developed? Were they based on an existing developmental model or theory?

11b. Why have there been recent changes to these tests?

11c. What has been the response to these changes from teachers and pupils?

12. How do you determine what aural skills to assess at a particular developmental stage? Why are specific tests introduced at specific levels?

13. What is your rationale for assessing aural skills away from performance?

14. On the whole, in the practical examinations, is a candidate's aural skill relative to their performance ability? More so than with the previous tests?

## **Musical Knowledge**

15. In her book, Jean Harvey states that one 'needs maturity in musical perception and understanding in order to play pieces' (p.4). Can you define musical perception for me.

16. What is meant by understanding? Are the tests now geared towards musical knowledge, would you say, rather than practice?

16a. What is the musical knowledge that is being assessed?. Is it an understanding of the connection between aural skills and performance? Is this understanding necessary in order to perform effectively?

16b. When a candidate lacks an understanding of performance-related aural skills, is it noticeable in the performance itself?

16c. Do you think the ability to verbalise about the aural tests specifically relates to understanding? Do you find that the inability of a candidate to verbalise correctly about the tests is reflected in his/her performance? E.g. does knowing it's a minor 3rd enhance performance skills? At what age is musical knowledge relevant?

17. Do you think knowledge of theory influences one's understanding and development of aural ability?

### **Timbre**

18. Why it is that the piano is used to administer the aural tests?

18a. Do you think that the timbre of the piano effects the candidates response?

19. Why do the majority of the tests require a sung response?

19a. Do many use their instrument to respond?.

19b. Do you think the ability to sing is important for the developing performer? How does singing inform the performance?

19c. Would you say that if candidates were unable to sing responses it would inhibit their performance ability?

20. Concerning the alternative option of keyboard skills: why were these skills a viable alternative to assessing aural skills?

20a. Why have they now been abandoned?

21. Are you happy with the present aural tests or do you think there is still room for redevelopment?

21a. Are there any other aural skills used in performance that you think need to be assessed separately, or do you think these are manifest within the performance itself?

22. And finally, before we end this interview is there anything else which you'd like to add?

-----

## Appendix IV.

### Covering Letter to Interviewees

Dear

I am undertaking research into the nature of training musicians, as a member of the RAMP unit (Research into Applied Musical Perception) at Huddersfield University, with the ABRSM acting as a collaborating body.

In the first part of this study, it is in essence my objective to gather data concerning the central elements necessary for an effective instrumental/vocal performance. In so doing, I shall elicit how aural development actively influences, informs and enhances performance skills, away from any conventional methods of aural testing.

In order to do this, I need the help from instrumental teachers, such as yourself, to gather this information by interview.

I will contact you, by telephone, within a few days to confirm whether you agree to participate. I have included a list of questions for you to look at before we arrange an interview. I can assure you of complete confidentiality.

I thank you in advance for giving up your time to consider this issue and would welcome any suggestions of other teachers/active musicians/educationalists who may be prepared to participate in this research.

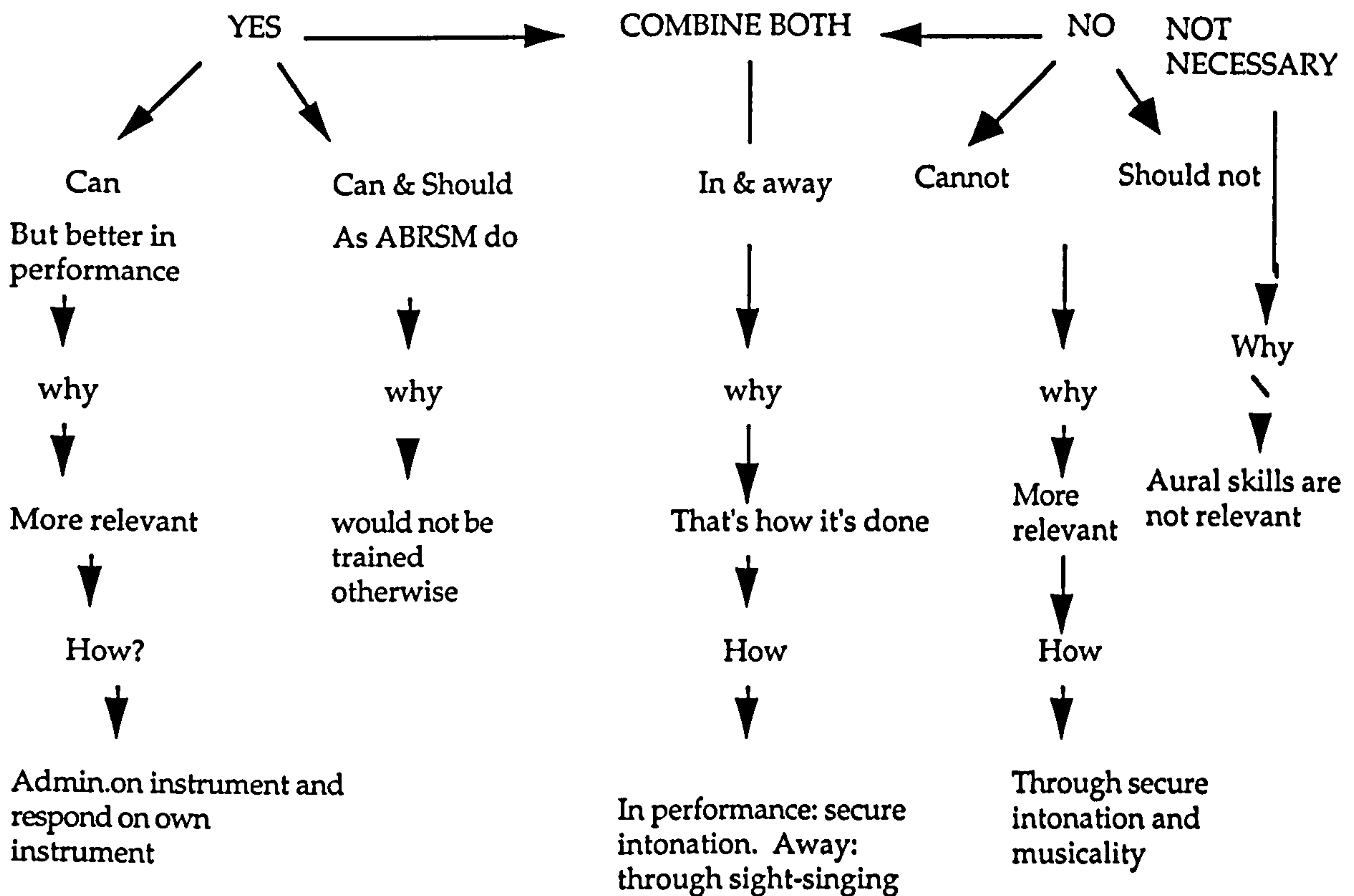
yours sincerely

[Alison McNeil]

APPENDIX IVa

This is a sample of the type of audit trail that was followed to code and interpret the interview data. The responses to question 7 are detailed below: 'can, and should, aural skills be assessed away from performance?'

First, responses were divided into simple yes or no answers, with subdivisions providing the reasons for a certain response. For example:



The frequency of responses were recorded, at all levels, starting with a simple yes or no response. These were collated with representative quotations as follows:

YES CAN: 9

...but healthier to have it in performance

YES SHOULD: 4

Yes and it should be. People's skills are differently balanced i.e.. good readers are often poor improvisers...memorises and vice versa.

That's why we exam it separately because it is examinable separately.

For those who will not be taught anything outside scales and sight reading.

NO CANNOT: 0

NO SHOULD NOT: 8

...as this often poses a block against aural development e.g.. I can't sing.

..young children need a more integrated approach.

Older students may enjoy doing aural exercises but they don't relate it to performance in the same way people do MENSA puzzles.

NOT NECESSARY: 2

aural tests are not necessary

If they're playing well they must have a good aural perception...I wouldn't think it's vital...or necessary...to do it in performance examinations. It's part of a much too intellectual approach...our examinations are still based upon what they used to be for organists in the 19th century. I don't think they've thought it through properly.

NOT NECESSARY TO TEST AT ALL: 1

How important is it to assess aural skills?

COMBINE THE TWO: 2

You're generation 's got to do something about it. My generation was so conditioned, we all are. Make it more appropriate both in and out of performance

DON'T KNOW: 1

I suppose it can but it's difficult. Ideally, I don't know.

CONFUSION: "You can't gage aural ability from performance, as aural tests often show".

This question proved complex to code because of interviewees' tendencies to relate aural skills to aural tests. Responses were therefore coded in multilayers; that is, codes were used to identify opinions about the ABRSM's aural tests, about self-defined aural skills, about how best to assess aural skills and many other cross references. Indeed, the questions were not necessarily asked as they are presented in the interview schedule. A natural flow of questions ensued as themes arose. For example, when asked if aural skills can and should be assessed

away from performance, many interviewees responded with attitudes about the ABRSM's aural tests. Interviewees were then asked specific questions about these tests whilst returning later to discuss the best means of assessing aural skills.

## **CODING**

1. ABRSM- are the tests relevant to assessing performance-related aural skills?
2. ABRSM assessment- Perceived problems.
  - a. The voice
  - b. Verbalisation of historical periods
  - c. Need to assess in context of performance
  - d. need to relate to performance, e.g. ask questions about prepared pieces.
  - e. Lack assessment of intonation.
  - f. Sight-singing.
  - g. Visual need.
3. ABRSM- general attitudes towards aural testing, e.g. implicit/explicit loathing
4. ABRSM- Training for its aural tests
  - a. Cheating
5. The need for aural testing
  - a. Training
6. Reasons for assessing aural skills away from performance
  - a. Otherwise would be assessing something else.



**7. How to best assess aural skills**

- a. Oral and written
- b. Instrument specific
- c. Pitching intervals
- d. playing one's instrument.
- e. Intonation (relates to 7c.).
- f. Admin. and respond on own instrument

**8. Training aural skills- general**

- a. imitation/repetition
- b. invention/improvisation

**9. Testing within prepared pieces**

- a. Intervals

**10. Reasons why assess within performance**

Interviewee responses were grouped during transcription in response to the questions asked, These were then coded, as indicated above, and then further divided into subcategories. The following extract is an example of how respondents answered a particular question and how they were consequently categorised. Further interview probing is indicated within square parentheses.

Interview question:

**How do you think we can best assess aural ability?**

I'm not sure we judge aural skills properly, certainly with the ABRSM [1.]. For a lot the aural is a nightmare, not because they don't know what to expect...it's the singing, the voice [2a].

Musicians always assume that if you're a good musician you can sing. By that they mean you can pitch accurately. Why should it be that they've got it in the voice? There's something wrong....it's not the pitching but remembering the tune...if I found this difficult, and I'm good at aural, no wonder the kids are knocked out...It's always been presented that musicians are good at aural, yet I know that's not the case because of the people I've come across [3] I've tackled the aural as deeply and helpfully as I could, but it's all been cheating e.g. away in a manger[4a].

They have to have some way of knowing the music that you are playing, the only way is for me to play and you to sing back, but it's completely false!!!. That's conditioning. The aural test does you down, it knocks you for six. Even now, the higher grades, recognise period of history, it has very little to do with performance unless you say we're going to perform, baroque ms. in one way and romantic in another, now see if you can recognise a romantic piece, but that would be by the performance. Why should that be a part of a performing exam. [2b+2c].

Child doesn't find it easy to sing back[2a]. Because listen smile think of something else and then it's gone. It's v. difficult for young. Words help to find things. One= I don't feel nervous if I talk in front of others, but not perform; and opposite= true, Semi-finals of young musician couldn't speak in camera, yet not at all nervous to perform= brought up that way. Thus, depends what's one used to. One shouldn't abolish aural tests otherwise no one would bother to train them.[5a]

[How best can we assess aural?]

"this is too big a question".

[What I'm trying to do is develop aural tests that test skills which feed directly back into performance]

Yes, the boards aural tests definitely need to be more related to performance.[2d] they're standing up, haven't got the piano to shield them, it's a one off and gone quickly. i wouldn't like to say how to get round it. if you've got an abrupt examine who won't give you the benefit of the doubt.

This has to be done in isolation. If it isn't we would be assessing something else. [6a].

Regarding G1, 5, 8, I'm quite happy with the published material since this has been put together by people more expert in the subject than I. However, there should be an INTONATION test- judging by the lack of attention this area receives[2e+7e].

I'm sure that current exams don't do it. Comparing the current ABRSM tests with more 'traditional' or 'old fashioned' tests, the ABRSM have clearly tried to address concerns, but have ended up presenting more problems. e.g. sight singing- far too hard for average grade 5 instrumentalists.[2f]. As Trinity Rep, I am aware that teachers are considering swapping board to avoid the AB. requirements in favour of the trad. version. My feeling is that training for these trad. tests train you to pass the tests NOT play your instruments.[2+4]. The weighting of 10% for aural tests always seems unduly high and unfairly so for many. BUT teachers can cope with training for the Trinity tests and feel more comfortable with them."

"Oral and written testing at all levels" [7a].

"In the case of brass instruments, accuracy of pitching intervals is a fair indication."[7b+c]

Aural tests don't always seem to relate to performance goals and it would be better if they did  
[2d]. Playing ones instrument could be a way.[7b+d].

"I don't know what other ways because when you're assessing aural what you try to do is get  
them to recognise what they've heard or remember what they've heard, but I'm not sure that's a  
particular aural ability.[1+2] "

The examination of aural tests works as well as anything can in the assessment of aural ability

They could give the aural tests from the pieces they've played[9], you know, they could play an  
interval and say 'which of your pieces did that come from?'[9a], there are lots of possibilities.

Yes, I hate the idea of separate tests where the teacher develops them separately, it's a nuisance,  
because you don't want to be an aural teacher you want to be a piano teacher.[10] They make  
you be a music teacher with a nominated instrument. Piano teachers spend their careers in that  
frustration because if you don't enter your pupils for examinations sooner or later the parent  
comes along 'doesn't on do grades when one learns the piano?' [Qu.12]

if it needs to be tested, I don't think they're necessary. if we do them, then lots of work on the  
instrument, imitating, inventing, repeating phrases.[8a+b] the ideal would be to do aural tests  
on own instrument.[7f] we not trying to catch kids out, we're trying to help them develop,

Playing back on the trombone something you've heard on the piano is not so extraordinary, but  
what it cuts out is the visual representation of somebody playing it which is a great help and  
why shouldn't it be a help? violinists sit behind each other to see which way the bows  
going."[2g]

APPENDIX V

A:1

# Gavotte I

from Suite No. 3 in D, BWV 1068

J. S. BACH

[♩ = c.126]

*f* *mf* *f* *tr*

5

9

*mf*

14

*tr*

18

*f*

22

*tr* *tr*

**TEXT BOUND INTO  
THE SPINE**

# Gavotte I

A:1

APPENDIX V

from Suite No. 3 in D, BWV 1068

J. S. BACH

[♩ = c.126]

The first system of musical notation consists of three staves. The top staff is the treble clef, the middle is the alto clef, and the bottom is the bass clef. The key signature is D major (two sharps). The time signature is common time (C). The first measure starts with a forte (*f*) dynamic. The second measure has a mezzo-forte (*mf*) dynamic. The third measure has a forte (*f*) dynamic and includes a trill (*tr*) over the final note. The fourth measure also has a forte (*f*) dynamic and includes a trill (*tr*) over the final note.

The second system of musical notation consists of three staves. The top staff continues the treble clef line. The middle staff continues the alto clef line. The bottom staff continues the bass clef line. The dynamics are *f*, *mf*, and *f* respectively. The system concludes with a repeat sign at the end of the fourth measure.

The third system of musical notation consists of three staves. The top staff has a mezzo-forte (*mf*) dynamic and includes a trill (*tr*) over the final note. The middle staff has a mezzo-forte (*mf*) dynamic. The bottom staff has a mezzo-forte (*mf*) dynamic and includes a trill (*tr*) over the final note. The system concludes with a repeat sign at the end of the fourth measure.

The fourth system of musical notation consists of three staves. The top staff has a forte (*f*) dynamic. The middle staff has a forte (*f*) dynamic. The bottom staff has a forte (*f*) dynamic and includes a trill (*tr*) over the final note. The system concludes with a repeat sign at the end of the fourth measure.

The fifth system of musical notation consists of three staves. The top staff has a trill (*tr*) over the final note. The middle staff has a trill (*tr*) over the final note. The bottom staff has a trill (*tr*) over the final note. The system concludes with a repeat sign at the end of the fourth measure.

# 17. ROUND DANCE

Lento,  $\text{♩} = 70$

The first system of musical notation consists of a grand staff with a treble and bass clef. The tempo is marked 'Lento, ♩ = 70'. The music is in 3/4 time. The first measure has a treble clef and a bass clef. The treble clef part has a melody with notes G4, A4, B4, C5, B4, A4, G4. The bass clef part has a bass line with notes G3, A3, B3, C4, B3, A3, G3. The first measure is marked with a dynamic of *p, dolce*. There are handwritten annotations below the staff: 'Soloist' and 'cresc' with arrows pointing to the bass line.

The second system of musical notation continues the piece. It features a grand staff with treble and bass clefs. The treble clef part has a melody with notes G4, A4, B4, C5, B4, A4, G4. The bass clef part has a bass line with notes G3, A3, B3, C4, B3, A3, G3. The first measure is marked with a dynamic of *p, dolce*. There are handwritten annotations below the staff: 'cresc' and 'cresc' with arrows pointing to the bass line.

The third system of musical notation continues the piece. It features a grand staff with treble and bass clefs. The treble clef part has a melody with notes G4, A4, B4, C5, B4, A4, G4. The bass clef part has a bass line with notes G3, A3, B3, C4, B3, A3, G3. The first measure is marked with a dynamic of *pp*. There are handwritten annotations below the staff: 'mf' and 'cresc' with arrows pointing to the bass line.

The fourth system of musical notation continues the piece. It features a grand staff with treble and bass clefs. The treble clef part has a melody with notes G4, A4, B4, C5, B4, A4, G4. The bass clef part has a bass line with notes G3, A3, B3, C4, B3, A3, G3. The first measure is marked with a dynamic of *p*. There are handwritten annotations below the staff: 'cresc' and 'cresc' with arrows pointing to the bass line.

The fifth system of musical notation continues the piece. It features a grand staff with treble and bass clefs. The treble clef part has a melody with notes G4, A4, B4, C5, B4, A4, G4. The bass clef part has a bass line with notes G3, A3, B3, C4, B3, A3, G3. The first measure is marked with a dynamic of *p*. There are handwritten annotations below the staff: 'cresc' and 'cresc' with arrows pointing to the bass line.



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