

EXPLORING THE SELF-CONCEPT AND IDENTITY
OF SYDNEY CONSERVATORIUM STUDENTS
WITH AND WITHOUT
ABSOLUTE PITCH.

Julie O'Connor

A thesis submitted in partial fulfilment
of the requirements for the degree of
Bachelor of Music (Music Education) (Honours),
Sydney Conservatorium of Music,
University of Sydney.

2006

Abstract

Absolute Pitch (AP) is the ability to identify pitches without external references (Parncutt & Levitin, 2001). It is a rare ability that is more prevalent among musicians. This qualitative study explored the perceptions of Sydney Conservatorium of Music students through interviews, focusing on the value of AP possession, and implications for music self-concept. The study involved 12 Conservatorium University and High School students; six participants were self-nominated absolute pitch possessors, and the remaining six were categorised as relative pitch (RP) users.

Through discussions of the value, prevalence and practicality of AP, the data suggested that AP is a highly desirable ability among Conservatorium students, and particularly valued by those who possess it. The results also suggested that RP students tend to have less positive self-concepts in aural perception and music theory, while having more positive self-concepts in other musical arenas.

The majority of the AP participants had a desire to become a solo performer, and the RP participants' tended to plan broader musical goals such as combining teaching and ensemble performance. These results suggested that the possession of AP has had a significant effect on the identity of these individuals.

Acknowledgements

First and foremost, I would like to thank my supervisor, James Renwick, whose insightful advice (and subtle pushing) inspired and motivated me throughout the study. I am also particularly grateful for the assistance of Julie Montague, from the Conservatorium High School, in organising the secondary participants, and Kathy Marsh, for her willingness to share her extensive knowledge of qualitative research. Finally, I would like to thank my family, and Daniel, who were so understanding, supportive and encouraging throughout this unusually hectic year.

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CHAPTER 1 – INTRODUCTION

Many educators would acknowledge that the perceptions students have about their abilities are linked to their motivation to learn and achieve (Austin, Renwick & McPherson, 2006). An achievement in music, whether it is a high test or performance score, positive feedback from a teacher or mastering a piece, can motivate a student not only to continue studying music, but to maintain the level of effort required to improve. Within the field of music, there are a number of complex, abilities that are not easily attained, but highly regarded among musicians and non-musicians. One of these is *absolute pitch* (AP), sometimes called *perfect pitch*, which is the ability to identify or sing pitches without any external reference (Parncutt & Levitin, 2001).

This qualitative study will explore the perceptions of individual students within the Sydney Conservatorium of Music through in-depth interviews, focusing on absolute pitch, the value of possessing this ability, and the implications for how advanced musicians perceive their musical abilities (*music self-concept*). Chapter one will outline firstly, the purpose and significance of the study, followed by the research questions, definitions and a description of the research context and thesis structure.

Purpose and relevance of the study

Students studying at specialist music institutions are often exposed to other students with seemingly astonishing musical abilities. For those who have, for most of their music education been one of the few, if not the only “musical” person in their social circle, enrolling in a school exclusively for advanced musicians affects the way in which the student views his or her abilities or self (Davidson, 1999).

The practical benefits of the possession of absolute pitch for musicians have been researched extensively. For example, AP is useful for musicians studying atonal music, where there is no tonal centre that can be used as a reference point (Takeuchi & Hulse, 1993). However, another possible benefit which appears to have been neglected in much of the AP literature, is the possession of the ability as a symbol of musical distinction. From the study of the music self-concept of Conservatorium students and their views on absolute pitch, this study aims to demystify the

phenomenon in terms of the value of the ability for Conservatorium students. Also, AP is most relevant in cultures that assign labels to particular frequencies, such as $A=440\text{hz}$, so this study explores the significance of AP within the culture or context of the Sydney Conservatorium of music.

While there is an abundance of research in both self-concept and absolute pitch, an extensive literature search has uncovered no studies to date that attempt to establish a link between the two notions. Some studies on the self-concept of gifted and talented students in schools offer related findings; Hoge and Renzulli (1993) for example, noted that the high expectations communicated to individuals labelled as “gifted” can contribute to feelings of failure, or inability to measure up to expectations. On the contrary, Moulton, Moulton, Housewright and Bailey (1998) conducted a study with American adolescents, on the psychological effect of being labelled as gifted, and found that this label offers a sense of accomplishment, of being unique, and of being respected or highly regarded.

The study also seeks to highlight other musical skills that are desired by Conservatorium students, and to explore the ways in which possessing (or not possessing) them affects a student’s self-concept, then possibly affecting motivation and achievement. The study addresses these more general musical skills, such as aural perception and performance, in order to compare perceptions of these abilities with perceptions on absolute pitch.

Through studying the achievement expectations of the students, the study aims to investigate the ways students construct their self-concepts and identity around their musical abilities, and the influence of family and peer interactions on these constructs. A broader objective in this study, which is closely linked to the field of music psychology, is to gain insight into the motives that direct student behaviour in the unique, often competitive social context of music institutions.

Significance of the study

Some of the existing AP studies suggest that the possession of this ability offers psychological benefits, which might have an effect on an individual’s self-concept. Parncutt and Levitin (2001) stated that AP was not essential to understanding music,

but ‘it is a sensory and aesthetic life-enhancer’ (p.29). If this view is widespread, it could be assumed that specialist music students without AP may construct a less positive music self-concept, which in turn could influence motivation, identity and achievement.

This is a previously unexplored topic which may uncover a number of related, but seldom explored areas of music education research. For example, the label of ‘absolute pitch possessor’ would undoubtedly have an effect on a student’s self-concept in music, but little is known about the positive or negative effect of being labelled a ‘relative pitch possessor’, or the precise level of ability in aural tasks that generates the perception of being proficient or skilled in music.

The study may also highlight the implications for teachers in catering for students with or without absolute pitch in music schools.

Research questions

This study aims to provide an in-depth description of the phenomenon of absolute pitch within the Conservatorium and three broad research questions structure the study.

- 1. What is the effect of AP possession on music self-concept?*
- 2. How does AP possession contribute to the construction of an individual’s musical identity?*
- 3. What are the perceived advantages/disadvantages of AP possession for Conservatorium students?*

Thesis structure

Chapter 2 reviews the literature related to absolute pitch, self-concept and identity. Chapter 3 outlines the research design and methodology, followed by participant

profiles in chapter 4. Chapter 5 summarizes the results, and chapter 6 is comprised of a discussion of these results and the implications for teaching and learning.

Definitions

This study will refer to four main terms; *Absolute pitch*, *Relative pitch*, *Self-concept* and *Identity*.

Absolute pitch (AP) is the rare ability to identify or sing pitches without any external reference (Parncutt & Levitin, 2001).

Relative pitch (RP) is a more common ability among musicians. It is the ability to name any note, if given the name of another note that is played to them (Parncutt & Levitin, 2001).

Self-concepts are perceived abilities in various academic or non-academic areas. For example: “I am good at music”. These perceptions are formed through experience, and influenced by the environment (Shavelson, Hubner & Stanton, 1976).

Identity is a person’s overall sense of self (Wigfield & Wagner, 2005). It is the culmination of self-beliefs (including self-concepts), which form a total picture of who a person is and how they fit into society.

Research context

The principal objective of the Conservatorium of Music is “to prepare gifted students of all backgrounds and nationalities for a professional career in music” (Sydney Conservatorium of Music, 2005). The Conservatorium building functions as a university faculty and a high school, with both admitting only those applicants who satisfy the Conservatorium’s highly selective entrance standards. The Conservatorium is an elite music institution, where students are surrounded by gifted musicians and may feel obliged to meet performance expectations or standards. This is therefore, an appropriate context for the study of absolute pitch and the self-concept of music students, given the competitive nature of the institution.

CHAPTER 2 – LITERATURE REVIEW

The first section of this review is an introduction to the research on general pitch perception, followed by a consolidation of the research on absolute pitch. The AP section will discuss the genetic, cognitive, and early training AP theories, and the factors that inhibit the development of AP. Finally, it will discuss areas that may require further research such as AP teaching strategies, and the value of AP possession.

The second section of the review will focus on the psychological factors inherent in the study of self-concept. Specifically, it is concerned with historical and contemporary theories of the self, and perspectives on the construction of self-concept. Furthermore, it will discuss prior research into the influences on identity development and the possible implications of self-concept and identity on motivation and achievement within the context of a specialist music school.

General music perception abilities

As the present study's focus is on the effect of AP possession on self-concept, it is important to also consider the general pitch perception abilities of both AP and RP individuals. Music perception has been studied from many approaches, including cognitive psychology, in which it is posited that a presented stimulus is interpreted by knowledge, sometimes called schemas, acquired through experience (Krumhansl, 2000). Just as a child learns language through listening and imitation, an individual learns to distinguish pitch differences through experience and exposure.

Krumhansl (2000) reported that individuals trained in western music have developed a kind of internal tonal hierarchy, in which the tonic of the diatonic major or minor scale is the most important and all incoming pitch information is compared to this internal schema. This hierarchy is said to be a culturally defined schema that is strengthened with musical training.

The complexity of this internal schema theory is becoming more apparent with new research. Dowling (1999) suggested that individuals engage in far more elaborate

cognitive processes than they are aware of. Listeners with a moderate amount of musical training often encode the diatonic scale-step (do-re-mi) values of the notes they hear without the awareness that they are capable of doing so. The implication of such a finding for the present study may be that while most musicians know whether or not they possess AP, some RP participants may be unaware of the extent of their general music perception ability, and thus unaware of any similarities between themselves and AP possessors. Some individuals may possess a latent form of AP, but simply lack the ability to name the notes, which evidently requires musical training.

Long-term memory and pitch labelling

AP is also often described as merely extended long-term memory ability. This theory maintains that possessors of this ability have apparently internalized their pitch references and are evidently able to maintain stable representations of pitch in long term memory (Levitin & Rogers, 2005). Seashore (1919) and Bischoff Renninger, Granot and Donchin (2003) also concur with the view of AP as a reference tone embedded in long-term memory.

While this ability to retrieve accurate pitches from memory may seem unusual, Levitin (1994) tested musicians and non-musicians and found that some degree of ‘Absolute Memory’ representations existed in the general population. Good pitch memory has been found to be widespread among adults with no musical training (Schellenberg & Trehub, 2003), and reportedly poor pitch memory is most likely a result of an inability to label notes by their names.

Absolute pitch

Research into AP has consistently been focused on how AP possessors attained the ability, and the neural or cognitive processes involved in the use of their ability. This section will discuss these factors, and other contemporary research related to this study.

Defining and testing absolute pitch and related abilities

One of the most apparent difficulties faced by researchers in the field of absolute pitch is the lack of consistency in defining the phenomenon. According to some researchers, AP occurs at many levels of speed and accuracy. Yet even at its most basic level, it is still a rare ability. Parncutt and Levitin (2001) noted that a close approximation of the prevalence of AP is one in ten thousand people, however, AP is an ability that is more prevalent in, and more often associated with musicians. While it is often associated with a long-term memory for pitch, research into AP testing often relies on the ability of the participants to *label* these pitches by name, which evidently requires a certain level of musical training. This implies that the prevalence of AP might be significantly higher than initially thought, if tests were designed to include individuals who have not learnt the traditional note names.

A related term that appears frequently in AP research literature is *relative pitch* (RP), which is the ability to name one pitch if given the name of another (Justus & Bharucha, 2002). Musicians who use RP can recognise the relationship or interval between two notes, but not their exact pitch. This is a significantly more common skill than AP, and most musicians possess RP to some degree.

There is no agreed level at which an individual is considered to be an AP possessor (Bahr, 2005). Bachem (1940), in an important early contribution to the literature, found that many individuals who originally described themselves as AP possessors were actually much slower and less accurate than others, and therefore possessed “pseudo-absolute pitch, the crude estimation of tone height, but not genuine AP” (p. 436). This finding represents a rather questionable, ‘absolutist’ view of AP, which has since become somewhat broader to include various levels of ability. A modern consensus is that AP exists if the individual identifies pitches to within one semitone (Baharloo, Johnston, Service, Gitschier, & Freimer, 1998).

The difficulty in diagnosing AP is compounded by a lack of consensus in an acceptable rate of accuracy in an AP possessor. Researchers tend to be more concerned with the speed at which participants respond, rather than the number of correct responses. Consequently, it is possible that individuals who do possess AP,

might be excluded from research results, for responding too slowly. It also strengthens the argument regarding the possible underestimation of the prevalence of AP, as discussed earlier.

There appear to be many factors inhibiting the validity in this field of research; for example, as a result of the rarity of AP, test subjects are not always readily available. Furthermore, the individual differences in the speed and accuracy displayed by AP possessors means that findings are not always replicable. For the purpose of this study, which focuses on the perceived effect of AP possession on self-concept, the researcher is less concerned with testing the level of AP ability in the participants than with their perceptions of the ability and its value. For this reason, self-reported AP ability is used within this phenomenological perspective.

The bulk of research in AP has been focused on the genesis of the ability. The contrasting perspectives in the available research each represent plausible but debatable theories on the development of AP, each of which will be discussed in the next section of the review.

The genesis of absolute pitch

The following paragraphs will discuss some of the contrasting opinions on how AP is attained, including the early training, genetic and cognitive perspectives.

1. Early training, experience and exposure

Much of the early training research refers to what is known as the ‘critical period’ of music training, between the ages of around 3 and 6 years (Bachem, 1940; Brown, Sachs, Cammuso, & Folstein, 2002).

This research suggests that younger children are more easily ‘taught’ AP than older children or adults. Sergeant and Roche’s (1973) study found that 3-4 year olds were more likely to sing the exact pitches they were taught, whereas older children would sing correct intervals, but in a different key. Research also suggests that absolute pitch evolved as a feature of speech, as the ‘critical period’ coincides with the period of speech acquisition in childhood. Deutsch and Hentworth (2004) found that a form

of remarkably precise absolute pitch was common in native speakers of tone languages.

2. *Genetic and neurological theories.*

Some studies (particularly the earliest studies) stress that a particular genetic predisposition is required or that AP is an inherited ability (Bachem, 1940). These studies often refer to the incidence of AP among family members of those studied. Baharloo et al. (1998) have provided more contemporary data on the familial aggregation of AP. 48% of respondents indicated having first degree relatives who also possessed AP. Baharloo et al. (1998) concluded that there may be a genetic mechanism in AP acquisition. These studies, however, do not acknowledge the significance of the environmental circumstances of these children, who may have developed AP through early training or exposure to music at home.

Neurological studies suggest that individuals with AP possess a pitch-processing apparatus that is quite different from individuals without AP. These theories contribute to the popular view that AP is a genetically inherited ability. Bischoff Renninger et al. (2003) empirically studied the behaviour of an event-related brain potential (ERP) known as P300. An ERP is a measured brain response to an event or stimulus, or more simply, a thought or perception. The results suggested that subjects with AP must continually compare incoming pitch information with their internal framework, eliciting a high P300 response in tests. The research concluded that there are considerable individual differences within the AP group, possibly due to the degree to which the tasks assigned required the subjects to use their AP ability rather than any Relative Pitch ability they might possess.

3. *Cognitive Style*

The research on cognitive style is often supported by evidence of the high proportion of AP among individuals with genetic based cognitive deficit syndromes such as Williams's syndrome and autism. It is suggested that deficits in some areas of cognitive functioning can fuel development of high level skills in cognitive niches not affected by the syndrome (Vitouch, 2003). Miller and Clausen (1997) reported that among musical savants there may be evidence of AP before pitch names are known. Also, Rauschecker (2001) found that AP occurs more frequently in blind

individuals that in sighted individuals. This finding was supported by the results of a study undertaken by Hamilton, Pascual-Leone, and Schlaug (2004), which not only found a higher prevalence of AP among blind individuals, but also that the age of commencement of musical training was significantly higher than the average for sighted AP possessors- a finding which may contradict the early training models.

Teaching methods for AP development in schools

While few methods of music education appear to intentionally ‘teach’ absolute pitch, some methods appear to support higher rates of AP possessors among students than others. Rates of AP are markedly higher in Asian cultures than in non-Asian cultures (Gregerson, 1999). This may be due to the long tradition of music education based on modelling and imitation, or a further example of the influence of tonal languages on pitch sensitivity. Watson’s (1995) AP study acknowledged that students trained in the Japanese ‘Suzuki’ method had more superior AP than students learning other methods. This finding is reasonable, given that the Suzuki and Yamaha methods focus on highly repetitious singing of solfege which reinforces the association between pitches and their labels.

Advantages and disadvantages of AP

While AP is held in high esteem among musicians (possibly simply due to its rarity), its usefulness in the development of overall musicianship is debatable (Ward, 1999; Miyazaki, 1995). AP may be helpful for memorization of pieces; however, it can be a hindrance when transposing music or working under mistuned conditions (Miyazaki, 1995). Regardless of its pitfalls, many music education researchers have expressed that AP is a worthwhile ability, if it can be attained. Seashore (1919) expressed that AP instils a sense of pleasure in the individual “through the mastery of his tonal world” (p. 250). Ward (1999) suggested that AP is helpful for singers in instances where a pitch pipe is unavailable, or when performing pieces with very wide pitch ranges where it is crucial to start on a particular pitch.

Bahr (1998) found that AP and RP are mutually exclusive abilities, and that possessors of either ability adopt a contrasting strategy in the processing and labelling of pitches. An AP possessor will perceive tones for their absoluteness and

ignore the melodic contour. RP possessors will attend to the relationships between pitches and ignore their absoluteness. Miyazaki (1995) also found that AP possessors are significantly weaker than RP possessors in RP-related tasks that involve identification of intervals.

These differences in pitch processing strategies may account for why AP possessors experience difficulty developing RP skills and vice versa. RP possessors may have a distinct advantage over AP possessors in many musical activities given that in the process of identification of intervals, AP possessors must first go through the process of individual tone labelling and then deducing the relationships.

Levitin and Rogers (2005) found that in judging whether a melody and its transposed counterpart are the same, AP possessors (being unable to turn their ability off) perform dramatically more poorly than their RP colleagues, and are often confused by music played on instruments that are poorly tuned. Mito's (2003) study of performance at a transposed keyboard found more frequent errors in performances of AP possessors than RP possessors.

For students undertaking study at specialist music institutions, the possession of AP or other rare, seemingly innate abilities may be desirable even if only for the assumption that the individual has achieved a kind of musical excellence. This raises the question of the implications for students who do not possess these abilities. The next section of the literature review will discuss historical and contemporary theories on the development of self-concept and identity, and the relationship between self-concept and motivation and achievement.

Self-concept

Psychologists have conceptualized *self-concept* as a hypothetical construct that is not directly observable by researchers (Kalandyk, 1996). A broad definition of self-concept provided by Shavelson et al. (1976) is an individual's perceptions of their abilities, which are formed through experience and especially influenced by environmental reinforcements and significant others. In contrast, self-esteem is the evaluative component of the self-concept. It is the individual's attitude of approval or disapproval, or the extent to which the individual feels capable, successful,

significant or worthy (Burns, 1979). These two terms are often used interchangeably, along with many others, including self-perception, self-image, self-regard, self-identity and self-evaluation. However, the current study uses the term most frequently used in contemporary research: Self-concept.

Over the last century of psychological research, there has been an increasing interest in the idea of the ‘self’. The decision to explore the self-concept of Conservatorium students resulted from an interest in self theories that indicate that a student’s attitudes towards his or her self influence behaviour and level of academic achievement. Vispoel (1995) asserted that positive self-concepts should be valued as a goal of education and socialization and that they could potentially facilitate motivation and achievement.

Historical research into the ‘self’.

William James (1890) was one of the first to use the terms *self-concept* and *self-esteem*. James (1890) proposed that individuals have multiple self-concepts, and generally choose one domain in which to identify themselves, or ‘stake their salvation’ (Burns, 1979). In other words, an individual’s self-esteem is dependent upon success in the area which is most valued by the individual and in which success was expected (the individual’s ‘pretensions’). This belief led to the development of *James’ law*:

$$\text{Self-esteem} = \frac{\text{Success}}{\text{Pretensions}}$$

Another prominent early researcher in self-concept was Charles Cooley, who coined the term ‘Looking-glass self’. Cooley’s hypothesis suggested that individuals make observations about their appearance and worth, and consequently imagine other peoples’ perceptions of their appearance and worth (Berndt & Burgy, 1996).

Contemporary self-concept research.

Most of the contemporary research into self-concept acknowledges the work of theorists in the 1970s who devised various hierarchical models of self-concept which criticised the earlier uni-dimensional self-concept theories. One of the most notable of these models was proposed by Shavelson et al. in 1976. In this hierarchical, multifaceted model, self-concept is divided into two broad classes: Academic and Non-Academic self-concept. Academic self-concept is subdivided into particular school subjects, and Non-Academic self-concept into social, emotional and physical self-concepts. These categories can then be further subdivided (Harter, 1996) (See figure 1.).

The Shavelson et al. (1976) model acknowledged the reciprocal nature of self-concept, in that the self-concept can be both a *result* of an individual's actions, and/or the *cause* of their future actions. This causal ordering has been debated critically in self-concept research; Guay, Marsh and Boivin (2003) found that this reciprocal nature is more pronounced in older individuals, and is not of significant importance for children younger than those in late primary school.

Measuring self-concept in artistic domains

Many contemporary researchers have conducted studies which reinforce the hierarchical, multifaceted nature of self-concept. Vispoel (1995) attempted to integrate self-concepts in dance, drama, art and music into the Shavelson, Hubner and Stanton (1976) model. Furthermore, his *Arts self-perception inventory* (ASPI) has been widely accepted and utilized in the study of self-concept in artistic domains. Vispoel (1995) found that an extra second-order *artistic self-concept* factor is needed to account for the relations between self-concepts in these domains. While the hierarchical model highlights the differences an individual may have in self-concepts in different domains, Vispoel found a significant correlation between dance self-concept and physical self-concept, and between music self-concept and social self-concept. It is then noted that this finding is understandable, given the physical nature of dance, and the group interaction inherent in musical activities.

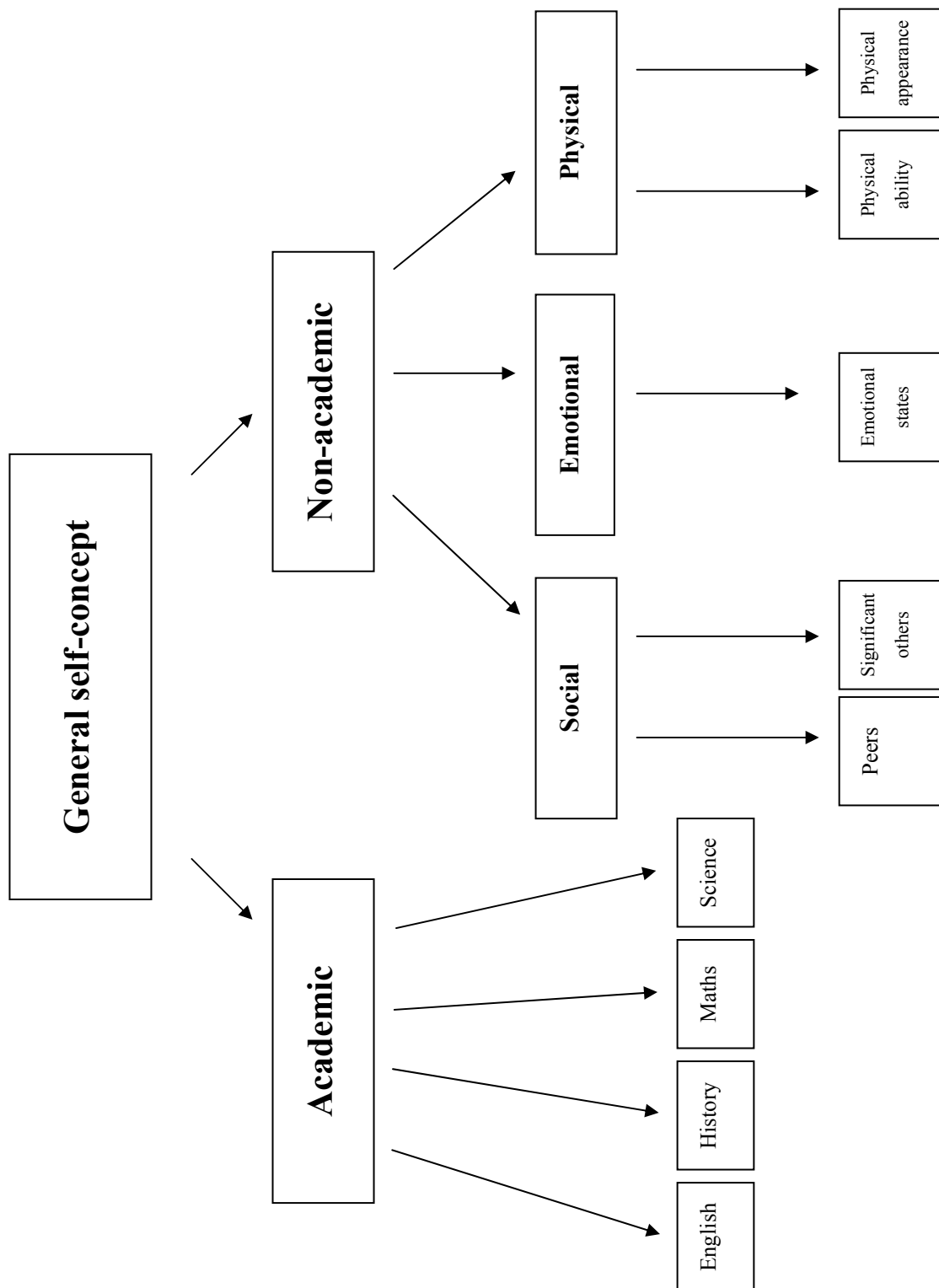


Fig.1. The Shavelson, Hubner and Stanton (1976) hierarchical model of self-concept (p.413).

Another influential study on artistic self-concept was completed by Marsh and Roche (1996) who studied the music, dance and drama self-concepts of performing arts students and non-performing arts students in a performing arts high school. Marsh (1992) developed his own research instruments (the age-graded, multi-dimensional self-description questionnaires SDQI, SDQII, SDQIII), however like Vispoel (1995), Marsh and Roche (1996) used the ASPI to assess self-concepts in artistic domains, but within the specific context of an elite performing arts school. The three performing arts self-concepts measured by Marsh and Roche (1996) (dance, drama and music) were found to be moderately correlated for non-performing arts students, but uncorrelated for performing arts students. Furthermore, Marsh and Roche (1996) found that the performing arts self-concepts of performing arts students' were more highly correlated to their self-esteem than in non-performing arts students. This finding may be explained by the level of value placed in performing arts subjects by performing arts students, given the suggestion in most of the related research that achievement in a highly valued area affects an individual's overall self-esteem.

The *internal/external frames of reference* model suggests that student self-concepts are the result of simultaneous comparison of their competence with their peers' competence and their ability in other areas (Marsh & Hattie, 1996). This model offers a possible solution to why students with the same academic accomplishments may have very different academic self-concepts. "A student whose best subject is mathematics will have a higher mathematics self-concept than other students who are equally good at mathematics but even better at other subjects" (Marsh & Hattie, 1996, p. 65). This social comparison is a key factor in self-concept research and will be discussed further in the next section of this chapter.

Social Comparison and Self-concept

One supposed influence on self-concept that is particularly relevant in the current study is the comparison individuals make between themselves and the abilities of their peers. In studying students at the Conservatorium of Music, a central concern is to investigate how students feel about their abilities now that they are surrounded by advanced musicians, especially if they have received the majority of their education

in a non-performing arts school. This idea has been researched extensively and is known as the 'Big-Fish-Little-Pond effect' (BFLPE). This effect, an application of *social comparison theory* described by Marsh (2003), posits that students will have a lower academic self-concept in an academically selective school than in a non-selective school. Marsh (2003) tested 4000 15 year olds from 26 countries and his findings were not only consistent with the BFLPE but also demonstrated cross-cultural generalisability across the 26 countries.

The BFLPE, if applied to the study of music might suggest that students may develop a more negative music self-concept upon starting specialist music study among other highly skilled musicians. However, Pitts (2005) studied the transition from general music classes to specialist music study for 20 American senior high school students and undergraduate music students and found that the result of social comparison (or Marsh's notion of the BFLPE) is not necessarily so bleak. This qualitative study found that some of the students enjoyed the advantages of being amongst a group of similarly skilled musicians, expressing benefits like the opportunity to perform advanced music without excessive repetition and rehearsal for slower students. The findings suggested that starting a music degree can initiate a process of reappraisal of an individual's sense of self-as-musician and questioning past achievement and self-perceptions. The construction of a sense of self-as-musician is closely related to research on *identity*, which is discussed in this final section of the literature review.

Identity

Over the last 30 years there has been an increasing interest in psychological research in the field of identity, often directed towards educational study. Within this research are many studies which focus on the link between identity and music achievement and motivation. The term *identity* refers to an individual's overall sense of self (Wigfield & Wagner, 2005). Identity includes the many self-concepts an individual possesses, and the perceived meaning of the various roles they play, such as self-as-musician, self-as-friend or self-as-colleague (Stets & Burke, 2003).

Foundations of identity research

The psychoanalyst Erik Erikson believed that the development of a sense of identity is a major task confronting the adolescent, involving exploration of questions such as

“Who am I?” or “Where am I going?” (Atkinson, Atkinson, Smith, Bem, & Nolen-Hoeksema, 2000). In Erikson’s theory, an adolescent must experience a period of role experimentation in the attempt to reach the stage of *identity achievement*, which usually means having achieved a “coherent sense of one’s sexual identity, vocational direction and ideological world-view” (Atkinson et al., 2000, p. 103). Wigfield and Wagner (2005) concur with Erikson’s belief and acknowledged that many of the biological, cognitive and social changes in adolescents’ lives impact the development of identities.

Identities in Music

Research into musical identities has been predominantly focused on the ways in which adolescents construct their social identities through their musical preferences. Zillman and Gan (1997) reported that adolescents who share the same musical taste often share membership in a same-taste culture. This study however, is more concerned with the ways in which music students construct their musical identity through their experience and social interaction.

Research has shown that the level of encouragement, expectancy or involvement of parents in their child’s musical study can influence the child’s self-perceptions, motivation and achievement (Davidson & Borthwick, 2002). This implies that a student may be more likely to continue with music study if his or her parents encourage this behaviour. Davidson (2002) also studied the identities of solo performers, finding that the type of musician one becomes (performer or non-performer) can be influenced by the kinds of musical experiences in childhood. Davidson (2002) compared herself (a solo performer) and her associate, Steve (an instrumental player but non-performer) in terms of the experiences which they feel shaped their musical identities. Davidson (2002) had been moved by a performance in early childhood and immediately wanted to replicate it, developing a love for performing for family and friends. Steve, in contrast, had chosen in childhood to practice his skills alone, and came to view music as a solitary, escapist activity. However, this study has not yet been replicated with a more substantial sample.

Another area of musical identity research which is particularly relevant for the current study is the way in which musicians re-evaluate their identities in line with

experiences of success or failure in music. Pitts (2005) studied University music students and found that students assessed their own strengths and weaknesses in relation to their peers, and in some cases attempted to judge or define themselves more realistically, perhaps as a composer, or an academic, who would then have legitimate reason to be “not the world’s best player” (p. 17).

In summary, AP has most commonly been studied quantitatively, for the purpose of understanding how the ability is obtained and utilised. It is a rare ability, however the reported prevalence is based on tests which require pitch labelling; a skill associated with musical training. AP offers a number of advantages, but little is known about the negative implications for a possessor, particularly in regard to the perceptions of AP possession held by non-AP musicians.

Self-concepts are the perceptions or judgements made by an individual regarding their ability in various areas. These judgements are personal and dependant on experience, so two people with a seemingly identical ability in a given area, are still likely to have different perceptions of their ability. Alternatively, identity is a broader, overarching self-belief, essentially comprised of many self-concepts. These two topics are often represented with a strong educational focus in research, given their reported link to motivation.

This study was designed to explore a noticeable gap in the literature to date; the emotional and psychological implications of AP possession, taking into account the contextual uniqueness of the Sydney Conservatorium of Music.

The next chapter will outline the research design and methodology for the current study. This will include discussion of the theoretical (qualitative) perspective, data collection methods, sampling and data analysis.

CHAPTER 3 – RESEARCH DESIGN AND METHODOLOGY

This chapter outlines the design and methodology of the study. Specifically, it will describe and justify the study's qualitative methodology, multi-case studies, interviews, surveys, sampling and data analysis procedures.

Qualitative Research

The current study was conducted within the qualitative paradigm. There are a number of ideologies associated with this framework which require definition in order to justify its relevance to this area of study.

Firstly, qualitative studies acknowledge the multiple meanings of events. This phenomenological assumption states that reality is a variable which can only be understood through the analysis of these multiple meanings. Flick (2002) stated that qualitative research "takes into account that viewpoints and practices are different because of the subjective perspectives and social backgrounds related to them" (p. 6). Qualitative methods are necessary in this study to account for the possible range of opinions on AP, its value and its effect on self-concept.

Secondly, qualitative researchers often adopt a holistic approach in the study of phenomena and the individual perceptions of them. This philosophy assumes that a study serves little purpose without consideration of the complexities and impact of context and idiosyncrasies. This approach is used in the current study for the purpose of analysing the relationship between self-concepts and experiences within the context of the Conservatorium. It is also important to understand the participants' perspectives as being influenced by past experiences and social interactions.

Finally, qualitative research is often designed with consideration for ways in which the research environment might have an impact on the data collected (Patton, 2002). While the researcher in the current study aimed to allow the perspectives of the participants to emerge without coercion, it might be assumed that the interview process or merely the interviewer's presence might inevitably affect the results. For this reason, the study was designed to be as comfortable for the participants as

possible. This was achieved through unobtrusive audio recording equipment and the use of a familiar interview location.

Multi-case Study

The fundamental process in case studies described by Burns (2000) illustrates the method's appropriateness to the present study: the case study involves "the collection of very extensive data to produce understanding of the entity being studied" (p. 460).

The case study is particularly useful when the research is focused on subjective differences in perceptions of a phenomenon. In this study, it is intended that data are collected which illuminate the contextual uniqueness of AP possession for individuals studying at the Conservatorium of Music. As the focus is on a specific context, rather than the general population, the case study method allows the opportunity for a thorough, holistic study of the phenomenon of absolute pitch.

The current study qualifies as a *multi-case* study. These studies assume that each case is unique and while the process is time consuming, each case must be studied thoroughly in order to make cross-case analysis worthwhile (Patton, 2002).

Interviews

The data in this study were collected through in-depth, semi-structured interviews, each running for approximately 30-45 minutes and discretely audio recorded with the interviewees' permissions for later transcription.

Smith, Harre, and Van Langenhove (1995) stated that semi-structured interviews are generally used to gain a detailed picture of a participant's beliefs about, perceptions of or accounts of a particular topic. Similarly, this method was adopted in the current study for the purpose of increasing the likelihood of the elaborate responses that are not possible with standardized interviews or questionnaires.

Participant information letters were provided before the interviews (see Appendices B and C), outlining the general focus of the study, however, students were not advised that the research would compare AP and non-AP participants. The decision to withhold information regarding the specific research questions was based on two

important ethical considerations. Firstly, the researcher was concerned about the psychological implications of advising the non-AP participants of this comparison, and secondly, providing explicit information regarding the focus of the study might have been a ‘demand characteristic’, which would affect the outcome of the study if participants felt compelled to respond in a particular way in order to conform with the researcher’s expectations (Orne, 1962).

A semi-structured interview guide was prepared, including topics to be covered in the interview (See Appendix F), but questions were flexible to allow for elaboration in relevant areas. In this method “the interviewer remains free to build a conversation within a particular subject area, to word questions spontaneously and to establish a conversational style but with the focus on a particular subject that has been predetermined” (Patton, 2002, p. 343).

The interview guide was divided into four main sections:

- Background and Musical Experience
- General Aural Skills
- Absolute pitch
- Self-Concept/Identity

The background and musical experience section consisted of short questions regarding age, musical training and parents’ musical training, hobbies and future goals. The questions in this section were intended to discover the extent to which the participants value their music study, and the previous experiences which have influenced their persistence or interest in music study.

The second section of the interview schedule focussed on the value and utilization of general aural abilities and AP in music study. These questions involved discussion of the aural skills perceived to be necessary for musicians, strategies adopted by participants in tasks which involve notation of melodies ‘by ear’, and opinions on how one might develop advanced aural skills.

The third section covered AP, including definitions, how it is attained and its usefulness. The AP participants were then asked additional questions about how they use the ability and how they believe others perceive their ability. These questions were intended to illustrate the level of awareness the AP individuals have of their ability, and how it is utilized in their music study. More generally, the questions were designed to uncover the underlying perceptions of the value of AP for each individual, which may have implications for self-concept.

Finally, the self-concept section contained more personal questions, which were purposefully placed at the end of the interview to allow time to develop rapport with each participant. Questions covered areas such as perceived ability in general music, and in sub-categories of music activity (such as performance, composition and musicology), attitudes towards achievement and identity. The students were also asked to rank the subjects they are currently studying in order of their perceived ability in each area.

Pitch Surveys

In addition to the interviews, participants were asked to complete a *pitch survey* (see appendix A). The purpose of the seven-question survey was to reinforce the two categories to which each participant was assigned (AP or Non-AP/RP). For example, it was expected that participants in the two AP groups would feel quite proficient in the skills on the survey relating to AP possession. The survey also provided additional, ordinal data which was compared to the verbal data from the interviews.

Participants

Qualitative inquiry typically focuses on in-depth study of relatively small samples, or even single cases. The goal of the researcher in the present study was to select participants who can provide the greatest amount of information on absolute pitch possession. For this reason, *purposive sampling* was used. As stated by Patton (2002), cases for study in purposive sampling are selected because they “offer useful manifestations of the phenomenon of interest” (p. 40).

A second rationale for adopting purposive sampling was simply due to the rarity of AP, even within an institution which specializes in music. The sample used in this

study ultimately depended on the number of willing AP participants. RP participants were then selected who were preferably as similar as possible to the AP participants with regard to, for instance, age and musical experience.

The ethics of obtaining participants were considered in the sampling procedure for this study (Best, 1981). After gaining approval from the NSW Board of Studies and the Human Research Ethics Committee of the University of Sydney, a letter was sent to the principal of the Conservatorium High School requesting permission to conduct the study, along with an information sheet outlining the study's purpose and methodology. The head of the school's music department suggested appropriate students, arranged information letters and permission slips to be sent to parents (see Appendices D and E), and booked interviews for each participant, once parents had provided signed consent.

To obtain participants from the university, the researcher visited the advanced aural class and gave a brief presentation of the research proposal, inviting students to take part, and a flier was placed on the Conservatorium notice boards. AP participants were selected on the basis of nomination or on the advice of their principal study teacher. The final sample was 6 undergraduate Sydney Conservatorium of Music students and 6 junior Conservatorium High School students, with three AP students in each group.

Data analysis

The analysis and interpretation of data is the key factor in research. The interpretation of textual material serves to develop theories and, at the same time, forms the basis for decisions about which additional data should be collected (Flick, 2002). Smith (1995) described qualitative analysis as an attempt to capture the richness of the themes which emerge through the participants' responses rather than reducing them to quantitative categories. Hence the aim of the qualitative researcher is to learn something about the participants' psychological world, which involves continuous interpretation of the interview transcript (Smith, 1995).

The current research project is particularly well suited to the *grounded theory* approach, in which the focus is on the development of theories rather than testing

particular theoretical contents (Patton, 2002). This framework involves a number of analytical procedures for dealing with interview data, including *coding*. Gough and Scott (2000) stated that the grounded theory approach is one whereby the categories for coding the data are not fixed or predetermined, but derived from the data.

Strauss and Corbin (1990) divide the coding process into sections, beginning with *open coding*, followed by *axial* and *selective coding*. Open coding breaks down the initial data (recordings or transcriptions) into a series of concepts. This requires classification of expressions by their meanings, into single words or short sequences of words. “The data are broken down into discrete parts, closely examined, compared for similarities or differences, and questions are asked about the phenomena as reflected in the data” (Strauss & Corbin, 1990, p. 62). Open coding began, and continued, on completion of the first interview.

The second procedure, *axial coding*, involves the refinement of the concepts resulting from open coding (Flick, 2002). It is a process of generating categories for the concepts which appear most promising for theory building. As constant comparison is a key feature of grounded theory, the discovery of relationships between categories is an important step in axial coding. Finally, the categories deemed essential are continuously verified with new data that are collected. Axial coding also involves consideration of the research context through questioning and reflection by the researcher. This is an important process which aids with theoretical sensitivity, allowing the researcher to see past personal assumptions, biases and preconceptions (Strauss & Corbin, 1990).

The third step, *selective coding*, continues the axial coding at a higher level of abstraction (Flick, 2002). The purpose of selective coding is to discover one fundamental category to which all other categories are related or integrated. Throughout the coding process, the researcher may have considered or begun to formulate conceptions about fundamental conclusions or findings in the study. Selective coding involves devising the general descriptive overview or ‘storyline’ of the research which serves to form a grounded theory (Strauss & Corbin, 1990).

CHAPTER 4 – INDIVIDUAL CASES

The following chapter outlines individual case studies of all 12 participants, describing the students in detail, with reference to the researcher's observations and interpretations. It discusses the backgrounds and personalities of these individuals, to place the results outlined in chapter 5 into context. Firstly, the chapter will describe the Secondary participants with AP then RP, followed by the tertiary participants with AP then RP.

Secondary Participants with Absolute Pitch

Marina¹

13-year-old Marina started music lessons at the age of three. At four years old, Marina also started piano lessons. Marina appeared to be an ambitious student, who had set very challenging goals, including becoming the first female concert master for the Berlin Philharmonic orchestra. She later explained that this is a difficult goal to achieve, but that it “would be amazing”.

Marina expressed her fondness for AP, not simply for the associated success in aural tests, but because she sees it as “a fun thing”. To Marina, AP is most valuable as a trick to amuse her friends. In particular, Marina explained that students at school affectionately call her a ‘freak’ and sing notes to her, asking her to name them.

Marina was adamant that she will pursue a career in music. At one point during the interview, she stated “there's just nothing else that I know of that I can do as well as music”.

Bradley

Bradley, a 12 year old clarinet and piano player, presented himself as a very bright young man. Bradley provided me with a definition of AP which was very close to the

¹ All participant names are pseudonyms.

definition in the literature review, and expressed some very logical opinions on the ability.

Bradley explained that finding out that he has AP, has had a positive effect on his feelings about himself. “It makes me feel good when people say ‘WOW’, because having perfect pitch is a talent.” He also feels that being musically ‘talented’ is important, given that he attends a selective school with a long waiting list; “It’s an honour to be at this school so I have to do my part to stay good.”

In response to being asked how he would feel if he lost his AP, he said “I would definitely feel like something really bad had happened, like I’d go down hill really fast in my musical ability, because it contributes quite a lot to my music.”

Ally

Ally is an outgoing and talkative 13 year old student. While her main instrument is the violin, which she started at six years old, she also loves to sing. Ally hopes to audition for voice study in her senior years.

Ally appeared to be quite passionate about her dream of becoming an opera singer, and, for someone so young, Ally has had a lot of experience in music performance. At one point, she proudly described her experiences in one of the leading children’s choirs in Australia.

Ally appeared to be very attached to her AP, but prefers not to boast about it. “It makes me feel special to go to a music school and have a special ability among lots of musicians.” She explained that “you’re really lucky if you have it, because later on, you’ll need it”, and that AP is not something for other students to be jealous about, but something to “work towards”.

Ally’s strong opinions about the privilege of attending the Conservatorium High School suggest that her musicianship is a fundamental characteristic of her identity. She feels that students at her school should be planning a career in music, or give up their position at the school. “Some people say ‘I play the violin but I really want to be an actor’, and I think ‘what are you doing here?’”.

Secondary Participants using Relative Pitch

Rhonda

13-year-old Rhonda plays the trombone, and comes from a musical family, but stated that she was never pressured into music. Her motivation came from seeing the school band perform. Rhonda sees herself as the most musical person in the family, because all her siblings “just play for fun”.

Rhonda felt that AP is revered at her school, but that people do not often speak openly about it. “The teachers use perfect pitch kids for demonstrations in class, which puts us down”. Rhonda stated that she would like to have AP, but attributed her lack of AP to not being a piano player. She also offered an unexpected disadvantage of the ability; that AP possessors might feel isolated at times, being “the only one in class who has it.”

Rhonda’s music self-concept was not overly positive, and she acknowledged that her self-beliefs have changed since she came to the Conservatorium. “My music skills aren’t as good as, say, English. I have to work really hard at music.” She also gets particularly nervous when performing, and feels pressured to do well in music. “They have a really big waiting list here, and if you’re not doing well they’ll ask you to leave, so you have to keep your level up.”

Roxanne

Roxanne is an intriguing participant in this study, having been home-schooled for a substantial part of her education. She is a 14-year-old Flautist, who also plays the piano and euphonium. Roxanne considers herself to be the “most musical person in the family”. Although it ‘doesn’t bother’ Roxanne that she does not have AP, she explained that there is “a sense that they are a bit special” in music classes. Nevertheless, Roxanne appears to have a positive music self-concept. She described herself as having “fairly good aural skills, quite good on the flute, but just crap at rhythm”.

Roxanne's descriptions of her Conservatorium experiences are particularly captivating, due to her home-schooling. She explained that before enrolling in the school, she felt very musical and talented, but when faced with the advanced musicians at the Conservatorium, she began to feel "very un-special". It was disheartening to hear her admit, "I sometimes go home and cry because I hate the competition so much". Similarly, one of the study's most poignant comments was offered by Roxanne; "It's not about the clothes you wear at this school; it's about how good you are at music".

Andrew

Andrew, a 13 year old violinist, was an intriguing example of the way students can develop an aversion to music through excessive pressure at school or home. Andrew explained that he does not wish to pursue a career in music, and is only continuing his violin lessons because his mum 'likes it'. When discussing his school subjects, he said that he'd like to be better at maths, because he'd like to become an architect.

While admitting that he is 'one of the better players', he expressed that his theory skills are less adequate, and that he lacks the required confidence and "always stuffs up in performances". Andrew's negative music self-concept appears to have been strongly affected by his classroom music experiences, and he acknowledged that having AP would make him feel more confident as a musician.

Despite his belief that having AP would help him in his music study, Andrew appeared to be quite disgruntled by the perceived 'hype' surrounding AP possession, expressing that "it's [only] good for showing off" and that it can "make people dislike you".

Tertiary Participants with Absolute Pitch

Melinda

Melinda, at 22 years of age, said that her initiation into music study was a result of a parental 'push'. She accepted, at the age of 4, that music lessons were just a part of life in her family, and that her violin and piano studies should be taken seriously. Melinda also mentioned that she has no hobbies or goals which do not involve music.

Melinda often referred to her highly competitive nature. This was reinforced by her definition of a musician; “To be a musician you have to spend 99% of your life dedicated to music. If you’re doing it as a hobby, you’re not a musician”.

Her competitive nature and perfectionism was evident during the interview, and it was apparent that Melinda felt that AP possession places her ahead of her competition. Despite acknowledging that she had “never been in a situation where it was completely vital”, she would “literally die” if she didn’t have it.

Paul

22 year old Paul, a tertiary AP participant, began piano lessons at 11 years old. Paul was never pressured into music, and had asked for piano lessons when a family friend gave him a piano before moving overseas.

Paul had many explanations for how he developed AP. Firstly; he loved to ‘figure out’ his favourite songs on the piano by ear. Also, Paul often generalised the abilities of Asian musicians, using phrases like ‘all Asian people’, and noted that many Asian people have AP because their language is based on pitch, rather than the more rhythmic English language. Paul’s reference to his Asian culture seems important in this study, given the emphasis placed on pitch recognition in many Asian music education methods such as Suzuki.

Paul was surprisingly attached to his AP ability, stating that it makes him feel advantaged and special. He also mentioned that having had the ability for so long, he cannot comprehend what musicians without AP are actually hearing. Paul stated that if he suddenly lost his AP ability, he would wonder “what am I doing music for?”

Sally

Sally is a 20 year old violinist, who also plays the double bass, guitar and piano, and attributes her AP to her Suzuki study in early childhood. Surprisingly, music has not always been the fundamental focus in Sally’s life. After high school, she had initially considered becoming a paramedic.

Sally conveyed a belief in the instinctive nature of musical ability throughout the discussion, but felt that her AP was developed through listening to Mozart in utero. Later, she admitted that her RP skills are quite poor, because “people who have perfect pitch are lazy, you don’t develop your relative pitch”.

She stated that she is occasionally surprised to hear that some people don’t have AP, because “they’re so good”. She also acknowledged that AP can be good for your ego, but that “some people freak out when they know you have it, and they don’t want to play in front of you because they think you will judge them”.

Tertiary Participants using Relative Pitch

Dana

Dana is a trombone player, in the tertiary RP group of this study, who comes from a very musical family. Trombone is her major instrument at the Conservatorium (which she began at 10 years old), but she also plays the piano.

Dana was quite certain that many musical skills are innate. “You can be taught what a minim is, but I can’t remember being taught about musicality, I think you just have it”. When discussing student opinions of AP, Dana said “I think people think that if you have perfect pitch, you must be a better musician, or you’re more developed or more prepared for being a musician, whereas the rest of us have to work at it.”

Dana was very aware of the changes in her identity through the Conservatorium experience. She pointed out that in ‘first year’, she felt the need to justify her career choice by being famous, or the ‘best’ trombone player. Now she feels that this is not worth the “10 hours a day sitting in a practice room”.

Jasper

Jasper is a tertiary RP participant who is 20 years of age and plays the piano and flute. He started music at six years old, when his mother introduced him to Dalcroze classes. Jasper expressed his happiness with his musical training, but that he should have started ear training earlier.

Jasper stated that he does not have AP, but that he has a ‘good ear’. It became clear that Jasper valued the aural and theoretical elements of music study, and felt that ear training is crucial. He explained that he was motivated by the realisation that he was good at aural tasks, and has progressed further in this area as a result.

Jasper admired AP possessors, and felt that an AP possessor can be assumed to be a more highly skilled musician. However, Jasper is confident that having good RP has helped him to obtain employment in theatre sports. He acknowledged that AP would be helpful, but lacking it has not hindered his progress at the Conservatorium.

Charlotte

Charlotte is a 21 year old violinist, who says she has good aural skills, but not perfect pitch. She spoke openly about her abilities and her strong disdain for the ‘hype’ surrounding AP. Charlotte studied through Suzuki method, and explained that individuals are born with AP, given that students who are trained in the Suzuki method often have AP, but that she didn’t develop the ability.

She recalled her experiences playing in an orchestra, and stated that “the lead violinist was a magnificent player, and she only had relative pitch”. She also mentioned that AP has only become a ‘big deal’ because Suzuki reinforces its importance, and that there is “a growing number of Asian musicians here who came from Suzuki and have perfect pitch”.

Charlotte stated that she was once quite a gifted young musician, but that her progress was hindered by inexperienced teachers early in her training. She said that she had great potential as a musician, because she inherited her musicality from her Grandfather, who was “one of those naturally gifted musos”.

CHAPTER 5 – RESULTS

Chapter four has outlined the individual differences between each of the 12 participants. In contrast, this chapter discusses the results of analysis of the data, and is structured by the themes which emerged through the coding process.

Introductory discussions

The introductory discussions provided insight into the musical backgrounds of participants, and helped to ‘break the ice’ for more personal topics such as self-concept. Table 1 outlines the participant details, including current age, instrument, and the age of starting music lessons. This section will then discuss the results of the pitch survey (see appendix A) and responses in the areas of ‘reasons for starting music study’ and ‘skills required of musicians’.

Table 1. Participant information.

Name	Age	Instrument	Age when started music study	Category
Melinda	22	Piano/Violin	4	Tertiary AP
Sally	20	Violin	3	Tertiary AP
Paul	21	Piano	11	Tertiary AP
Jasper	20	Piano/Flute	Piano 6, Flute 7	Tertiary RP
Dana	20	Trombone/Piano	Piano 5, Tromb. 10	Tertiary RP
Charlotte	21	Violin	5	Tertiary RP
Ally	13	Violin/Voice	Violin 6, Voice 8	Secondary AP
Bradley	12	Piano/Clarinet	Piano 7, Clarinet 9	Secondary AP
Marina	13	Violin, Piano	Violin 3, Piano 4	Secondary AP
Roxanne	14	Flute/Piano	Piano 4, Flute 7	Secondary RP
Rhonda	13	Trombone	7	Secondary RP
Andrew	13	Violin	6	Secondary RP

Pitch Survey

The data displayed in Table 2 are the frequency of responses to the seven statements of abilities on the pitch survey (also see appendix A). The results confirmed the differences between the AP and RP participants and the appropriateness of the participant groups. As expected, the AP participants tended to either *agree* or *strongly agree* to the 7 statements of abilities on the survey, and none of these students *disagreed* with any of the statements. However, the responses of the RP participants were considerably more varied.

For a number of the statements, the RP and AP responses were similar. For example, 4 of the 6 RP participants (compared to all 6 AP participants) agreed or strongly agreed to the statement number four, “I can remember the starting note of a piece I’ve been playing long after the rehearsal has finished”. This indicates that the RP participants feel that they possess a certain level of accurate pitch memory; a finding that was reinforced by the verbal data indicating that these RP students can, on occasion, complete some AP-related tasks, but lack the *label* of AP possessor. However, the responses do not provide information regarding the length of time these individuals can retain such pitch information in memory.

Statement number six, “I can accurately sing any note, if given a starting note as a reference”, is related to RP processing skills, but elicited similar responses among all participants. This consensus suggests that AP possessors also possess some degree of RP, which is an exception to the literature claiming the ‘mutual exclusivity’ of AP (Bahr, 1998). Not only did the AP participants either agree or strongly agree with this statement, but their responses are almost identical to those of the RP possessors, indicating that they are not necessarily less confident in their RP abilities than their AP abilities or than the RP possessing group. These findings suggest that there is a significant advantage in self-concept for Conservatorium students who possess AP; these students are not only more confident in AP-related tasks, they also do not feel *less* capable in RP-related tasks.

Table 2. Frequencies of responses to Pitch Survey according to absolute pitch (AP) and relative pitch (RP) self-classification.

1. I can accurately sing any note without hearing it played on an instrument

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
RP			1	3	2
AP	3	2	1		

2. I can recognise and name any note that is played to me

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
RP				5	1
AP	4	2			

3. I can recognise one or two of the notes that I hear or play often in music practice

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
RP		4	1	1	
AP	6				

4. I can remember the starting note of a piece many hours after a rehearsal

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
RP	2	2	1		1
AP	6				

5. I can recognise and name notes played to me, if played on my main instrument

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
RP		1	3	2	
AP	6				

6. I can accurately sing any note, if given a starting note as a reference

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
RP	2	3	1		
AP	3	3			

7. I can recognise the key of any piece that is played to me

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
RP	2	1	1	1	1
AP	1	4	1		

Reasons for starting music study

The responses to the question of why students began music lessons varied widely, from having an appreciation for music at an early age, to being forced to start music lessons by a parent.

I saw the primary school band when I was in year 2, and I was 'wowed out' by them and wanted to join in.

Rhonda – Secondary RP

Within the University, only one student, Melinda (Tertiary AP) described being pushed into music study by a parent, stating that she was simply expected to study the violin and piano from a young age.

Skills required of musicians

The data collected during the interviews have reinforced the complexity of defining AP and the various levels of speed and accuracy of individuals who claim to have AP. There were also a number of similarities in general aural skills between groups. When discussing the skills required of musicians, one noticeable difference between the groups' responses is observable. The Secondary students tended to be very specific in their expression of the required skills.

You've got to be able to listen to music and pick out the parts.

Marina – Secondary AP.

Being able to read music.

Rhonda – Secondary RP.

In contrast, the tertiary participants tended to express the need for broader, more innate, or intuitive skills.

Being able to judge a good performance.

Paul – Tertiary AP.

Just having a musical bone in the body.

Melinda – Tertiary AP.

This difference could be related to developmental or age differences, where the communication skills of the high school students are still developing. However, given the highly articulate responses provided by these students, the difference may be more closely related to contrasting values reinforced through teaching and learning at the two schools.

During discussions regarding the *aural* skills required of musicians, intonation and pitch recognition became two common responses.

Knowing the intervals helps, being able to remember what they sound like.

Roxanne – Secondary RP

Intonation is really important; you've got to know when you're out.

Ally – Secondary AP.

The comments about intonation came from students whose main instrument requires consideration of intonation; for example, the violin. The two piano majors from the university did not acknowledge the ability to perceive tuning errors to be an important musical skill. It appears that the students were more likely to express specific skills that were necessary or applicable to the study of their own instrument, rather than general skills required of any musician.

Absolute Pitch

The students from both groups provided practical insight into their experiences with or without AP, and most of these students had quite strong opinions on the topic. This section of the interviews covered a number of points relating to the research questions, including the value of AP possession, the perceived benefits of having the ability, and the effect of AP possession on Conservatorium students' self-concept and identity.

Definitions of AP

The participants demonstrated a high level of awareness of the aural skills of musicians, including accurate definitions of AP, and an understanding of the ways in which pitch recognition skills are used by musicians. Some of the definitions of AP

offered were very close those found in the literature. One of the Secondary AP participants, at only 12 years of age, stated that AP is:

The ability to recognise a note without any guide or reference.
Bradley – Secondary AP.

An alternative definition provided by a tertiary RP participant (who, incidentally, expressed some disdain for AP throughout the interview) was that AP is:

*When a person can hear exactly what the notes are in 440.
If you play slightly flat, they have no idea what's going on.*
Charlotte – Tertiary RP

One of the tertiary AP participants believed that AP is essentially only about note recognition rather than reproduction;

It's just about being able to name a note when it's played, in terms of reproducing it, that's just for singers... although most singers don't have perfect pitch!
Paul – Tertiary AP

The acquisition of AP

The participants' responses to questions regarding the acquisition of AP were noticeably similar to the responses concerning the development of general aural skills. Many of the participants suggested that these skills are often innate, but can sometimes be trained; which reinforces the contrasting theories of AP development discussed in chapter 2. Once again, the students demonstrated awareness of the topic and a number of students expressed particularly strong opinions.

I think it was because of my Yamaha training. They teach you to recognise a note for what it is exactly, that's their whole teaching criteria. But not every Yamaha student has perfect pitch, so I don't know.
Melinda – Tertiary AP

[You get it by] training quite hard, but sometimes it's just natural. But you have to train vigorously, repetition note after note, looking for patterns and things.
Bradley – Secondary AP

Another interesting response came from a tertiary AP participant, who was born in Taiwan. He suggested that cultural background might influence AP development.

*For Asian people, it's got a lot to do with their language.
It's hard to learn English because it's more rhythm-based,
so the accent is hard. But you learn Chinese by listening for
different tones.*

Paul – Tertiary AP

Charlotte, from the tertiary RP group, also noticed a prevalence of AP among her Asian peers, but suggested that this was a result of training in the Suzuki method, rather than the influence of learning a tone language.

The AP participants from both groups were also aware of the levels of AP accuracy, acknowledging that some people have ‘more perfect’ perfect pitch than others. Similarly, some of these students admitted that they are not always accurate in note recognition or reproduction tasks, or that there are a number of factors which inhibit their ability.

*I find it really hard to write for voice, maybe the singer is
out of tune, but sometimes I have to know [be given] a
starting note.*

Paul – Tertiary AP

Rhythm stuffs me up a lot, and also if it's really fast

Marina – Secondary AP

Conversely, the RP participants from both groups tended to refer to AP as a very specific ability, which an individual either has, or does not have. There was no acknowledgement within the RP group of the different levels of accuracy.

The perceived value of AP

While none of the participants described AP as an *essential* skill for musicians, this section will discuss the contrasts of opinions which emerged between the four groups regarding the value of AP. The section will also highlight the contribution of AP possession to positive emotions or self-beliefs, as described by the two AP possessing groups, and the perceived disadvantages of the ability.

All participants were asked how worthwhile AP possession is for a Conservatorium student. A comparison of the responses indicates that AP students value the ability more than the RP students, or at least, these students expressed their regard for the ability more strongly than the RP students.

I think you're very lucky if you have it. You're lucky because in the future you'll need it, and they [the teachers] really try to help you get it here.
Ally – Secondary AP

It helps you with everything musical; in terms of remembering things it's a lot easier.
Marina – Secondary AP

In contrast, some responses from the RP groups highlighted a more cynical attitude towards the ability.

It's good for showing off, that's about it.
Andrew – Secondary RP

I know of one student in my class who managed to fail aural with perfect pitch.
Charlotte – Tertiary RP

Similarly, within the university, RP participants tended to view AP as helpful, but not essential, while the AP participants attributed significant value to the ability. Some students also acknowledged a possible emotional or psychological benefit for having AP.

Well its very useful. Like with things like Aural Perception, people like me don't have to study at all.
Paul – Tertiary AP

I know lots of people who don't have perfect pitch and wish that they did.
Dana – Tertiary RP

The only AP student to acknowledge a disadvantage of AP was Sally, a tertiary participant, who admitted that having AP has resulted in inadequate RP skills. She

stated that “if you have perfect pitch, you’re just lazy, you don’t develop your relative pitch ability”. Later in her interview she explained that she has trouble recognising harmonic progressions, and would like to improve in “listening functionally, like people without perfect pitch do” (cf. Miyazaki, 1995).

The AP participants from both groups offered insight into how it feels to have AP at the conservatorium. While most students acknowledged that now that they attend the Conservatorium, their ability is less of a rarity, they did suggest that having AP has had a positive effect on their self-beliefs.

Well, I feel advantaged, and special. Well, not that special, I was more special in high school where no one else had it and they’d go “wow, how did you know that note?”

Paul – Tertiary AP

It makes me feel happy that I go to a music school and I have a certain special ability among lots of other musicians.

Ally – Secondary AP

It definitely makes me feel more musical. Not superior, but it makes me feel like I’m a bit better at music.

Bradley – Secondary AP

The responses in this area imply that the AP students attribute at least some of their musical ‘talent’ to the possession of AP, suggesting that it has a positive effect on music self-concept. This affect was reinforced when the AP participants were asked to consider what it would be like to lose their AP ability. The level of emotion evoked by this question highlights the significant attachment these individuals have to their AP.

I’d hate it! It would make me really uncertain about my intonation. It’d make me crazy, I’d try to teach myself to get it back.

Sally – Tertiary AP

I would definitely feel like something really bad happened. I’d go down hill really fast in my ability, because it contributes a lot to my music.

Bradley – Secondary AP

Attitudes on the musicianship of individuals with Absolute Pitch

Two participants from the university, Dana and Paul, expressed the opinion that individuals with AP are more likely to be more advanced musicians. This opinion is of particular interest in this study, as if AP is seen as an indicator of musical ability, it is likely to affect the music self-concept of these students.

I think people think that if you've got perfect pitch you must be a better musician, or you're more developed or more prepared to be a musician whereas the rest of us have to work at it.

Dana – Tertiary RP

Most of the piano players, at least the good piano players- the piano majors, have perfect pitch.

Paul- Tertiary AP

None of the other participants made direct judgements or generalisations about AP possessors, but many of the responses implied that individuals with AP are admired, even though the RP participants often seemed reluctant to admit it.

Yeah I think there's a bit of that [status symbol] attached, you know you go "I have perfect pitch and everyone goes 'wow'."

Charlotte – Tertiary RP

People want to know how you do it. They'll sing notes and say "What's this note?" Then they'll run to a practise room to see if you're right.

Marina – Secondary AP

Self-concept

During the interviews, participants were asked about their abilities in the various subjects they are taking as part of their studies at the Conservatorium. This process also required the participants to rank their abilities in each subject, and discuss the reasons for these rankings. The aim of this section of the interviews was to examine the participants' experiences at the Conservatorium, including their feelings about their abilities in comparison to their peers, the perceived reasons for success or failure in their study, and the perceived value of success in each subject area.

Self-perceived ability in individual subject areas

The environmental differences between secondary and tertiary students were clearly highlighted during the discussions of the students' 'best' or 'favourite' subjects. While the university students are undertaking subjects which are almost entirely music-related, the high school students are, of course, studying a number of other subjects, which are compulsory in their curriculum. The responses to questions in this area varied widely among tertiary students, however, a clear distinction emerged within the high school between AP and RP participants. All three secondary AP students said that music was one of their best subjects, either due to the high marks obtained, or their personal enjoyment of the subject.

Music [is my best subject]; I got a good mark in the half-yearly.

Bradley – Secondary AP

I do well in Music, English and History. I think that if you like something you try harder at it.

Ally – Secondary AP

The RP participants from the high school offered a wide range of favourite or best subjects, but none of these three participants stated that music was their best subject.

I'm quite good at English and Visual Arts, I just love writing.

Rhonda – Secondary RP

I'm fairly good at Science, Geography and English.

Roxanne – Secondary RP

My worst is Latin, they go too fast. I'm also not very confident in Music, I always stuff up in performances, and I usually only just pass in aural tests.

Andrew – Secondary RP

Given that many RP students believed that confidence increases with AP possession, and that AP students are often used in music classes for demonstrations, it is understandable that students who lack AP would feel less capable in this subject than their AP possessing peers.

Competition and gossip among students

When discussing how Conservatorium students feel about individuals who have AP, a number of unexpected themes emerged which address the research questions for this study. For the high school students, competition among peers, and the high expectations for achievement in performance appear to be significant issues, which have affected the self-beliefs and confidence of these students. The Secondary students were quite willing to admit the existence of AP-related jealousy at the school, and the desirability of the ability.

The kids who don't have perfect pitch don't get the kind of marks that the perfect pitch kids get, so there's a bit of jealousy.

Bradley – Secondary AP

Everyone talks about it [AP]; some people say they have it when they really don't.

Ally – Secondary AP

The level of competition among students appears to have had considerably negative effects on some RP students, who described feeling pressured to excel in music at school, or struggled to meet the perceived performance expectations of the Conservatorium.

It's hard to get away from competition at this school; everyone thinks that if you go to this school you have to be really good at music. Sometimes I hear about the marks other people get and I think "why can't I be as good as them?"

Rhonda – Secondary RP

Sometimes I go home and cry because I hate the competition so much. It's not about the clothes you wear here; it's about how good you are at music.

Roxanne – Secondary RP

Considering the extent to which students at this school value AP possession, Responses of this nature suggest a possible negative implication of not possessing AP as a Conservatorium student. One tertiary AP student, Melinda (who coincidentally also attended the Conservatorium High School), reinforced the competitiveness of the high school environment, and how it contrasts with her experiences as a Tertiary Conservatorium student;

I think people notice that, you know, I can do something that they can't, but high school is always like that.

Melinda – Tertiary AP

It appears that while the University is also highly competitive, the secondary students experience more difficulty in coping with this environment. It is possible that the Tertiary students, being older and more experienced musicians, have developed more accurate and stable self-concepts which are not so vulnerable in competitive situations. Peer comparison is linked to this issue, and will be discussed in the next section..

Peer comparison and self-concept

When the tertiary participants were asked to discuss their thoughts on how they compare to other Conservatorium students, it became apparent that these individuals evaluate their performances according to a kind of un-written Conservatorium standard. A number of students felt that they did not meet the standard of performance required at the Conservatorium, but referred to another area of study at which they excel.

As a solo performer, I'm not the best by Conservatorium standards, but I love playing in ensembles.

Charlotte – Tertiary RP

When I first got here, my performance wasn't quite up to standard, but then once I found out I've got a good ear, obviously it's something I should pursue.

Jasper – Tertiary RP

The idea of a 'Conservatorium standard' was also raised in conversations at the High school. However, the students at the high school also appear to judge their abilities in terms of how they compare with their friends and peers. The responses to these questions indicated that reaching the standard of their peers might be more important to these students than reaching the expectations of the Conservatorium. These students generally did not need to be asked how they feel that they compare to their peers; this information was volunteered when asked about their musical abilities.

There's a girl here who's really good at flute, and she has the same teacher as me, and I always felt that I wasn't keeping up with her. I've narrowed the gap and now I really want to do well.

Roxanne – Secondary RP

In playing I'm one of the better players, in theory I'm not that good.

Andrew – Secondary RP

Identity

This section outlines the results relating to identity. It includes participant definitions of *musician*, the construction of identities through social interaction and the Conservatorium experience, and the relationship between AP and musical identities.

Definition of 'Musician'

The participants' definitions of 'a musician' varied widely, from simply playing an instrument, to quite philosophical opinions about devoting one's life to artistic expression. Each of the 12 participants considered themselves to be a musician, and it appears that the diversity in definitions might reflect the aspects of musicianship which each individual values.

To be a musician, you have to serve the music, and have spent 99% of your life dedicated to music. Some people say they're a musician but they're not; if you're doing it as a hobby, you're definitely not a musician.

Melinda – Tertiary AP

It's someone who knows all the scales. If you play well, then you're a musician.

Andrew – Secondary RP

I think the most natural form of musician is one who you can see musicality in from an early age. It's someone who can pitch a note, or can transfer their skills to other instruments with ease.

Jasper – Tertiary RP

You have to have studied at least one type of music, know the concepts, musical terms, and families of instruments.

Ally – Secondary AP

The construction of identity through the Conservatorium experience

A number of the tertiary participants referred to a point in their music study at the Conservatorium when they began to reassess their goals in music, according to their perceived abilities. The musical identities of these individuals appear to have been altered through their experiences at the Conservatorium, and some of these students mentioned that they realised that they are not suited to a career as a solo performer, or felt the need to set more realistic goals (cf. Pitts, 2005).

When I got into the Con I thought I must be pretty advanced, so I think that was the point when I first thought I was a musician.

Rhonda – Secondary RP

I thought getting into the Con was a good achievement for me, I felt special. Although when I actually started here I felt very un-special compared to everyone else.

Roxanne – Secondary RP

Some of the tertiary participants appeared to have resigned themselves to a particular role in the music industry that contradicts the goals they had set prior to attending the Conservatorium. It appears that the experience of becoming a Conservatorium student has offered them a kind of ‘reality check’ at a time which might be considered to be crucial in the development of identity.

I know I'm not the best trombone player, but I've learnt since I came here that I don't want to be the best trombone player, when I came here, I thought it was going to be a lot easier than it is. There's more important things in life than sitting in a practise room 10 hours a day, and if I did I might not get a job in an orchestra until somebody dies.

Dana – Tertiary RP

I was competitive when I started, but I don't worry now because I know my skills and what niche I want to get into. It doesn't matter if someone else has perfect pitch, I've got other skills.

Jasper – Tertiary RP

The construction of identity through peer and family interaction

The interview discussions concerning the perceived influence of peers and parents on music study highlighted another factor in the development of the musical identities of these students. Most of the participants have been heavily involved in music from an early age, and some admitted to being the ‘musical one’ in the family (cf. Davidson, 1999).

My friends outside of the Con always say ‘she goes to the Con, she’s a freak at music’.

Rhonda – Secondary RP

Mum thinks I’m the musical one and my brother’s the sporty one.

Andrew – Secondary RP

Some others mentioned that being so involved in music has actually left them with fewer career options than their non-musical friends, due to a lack of experience in, or exposure to other activities during their schooling.

I don’t know what I’d do if I didn’t have music in my life. I’m not good at sport and I’ve never been good at maths. Music is just my life.

Ally – Secondary AP

Now I feel that it’s too late for me to do anything else. I don’t want to have to go back and start another 4 year degree, and I couldn’t do a normal degree and sit through lectures and write essays.

Dana – Tertiary RP

AP and musical identities

Participants from both schools believed that having AP can make an individual feel more ‘musical’. While the reasons for these opinions varied, there was no clear

distinction between responses from AP and RP participants. A common opinion was that AP helps an individual to feel more confident as a musician, and some students felt that a certain level of expertise or talent in music is expected from individuals with AP.

It would make you feel more like a musician, because you'd know more, but I don't know how it affects musicality.

Dana – Tertiary RP

Yeah it boosts your confidence a lot.

Marina – Secondary AP

Some RP students attributed their lack of AP to not having studied a particular type of instrument, or not being genetically endowed with the ability. These responses seem to acknowledge or reinforce the perceived lack of control or choice regarding the possession of AP.

I think having perfect pitch, being born with the ability to hear something and just know what it is, sort of suggests the most skilled sort of musician.

Jasper – Tertiary RP

I feel like I'm a musician now, I think that the people with perfect pitch, they all play piano and I don't.

Rhonda – Secondary RP

Given that both Jasper and Rhonda referred to other valuable music skills which they possess, responses of this nature suggest that for these students, AP may play a role in identity development. RP individuals may construct their identity based on the skills they possess, rather than those they do not possess, which would reinforce the early work of James (1890) on finding one area on which to “stake one’s salvation” (p.310).

CHAPTER 6 – DISCUSSION

This chapter discusses the results, conclusions and implications of the study. The discussion is structured around the three research questions outlined in chapter one.

What is the effect of AP possession on music self-concept?

The participants in this study demonstrated an awareness of the existence, rarity and definition of AP. This awareness reveals that students have learnt a great deal about the ability through experience and informal interactions with fellow students and teachers. However, when discussing the value of AP for Conservatorium students, a sense of either false modesty, or reluctance to divulge personal opinions became quite apparent from participants in all groups.

This reluctance to boast about having AP suggests that, for these students, AP is a desirable ability. Alternatively, the RP participants appeared reluctant to express feelings of admiration about those students with AP, but were able to recite a number of disadvantages associated with the ability. As many students pointed out, it is expected that people who go to the Conservatorium have a reasonably high level of musical skill, and this reluctance expressed by the RP participants may relate to a desire to appear more advanced by devaluing a skill which they do not possess. Given that the students' responses acknowledged only a few practical benefits (such as obtaining good marks in aural tests), the appeal of AP possession to Conservatorium students seems to be more closely related to the assumption that it is an ability possessed by advanced musicians.

Three of the themes that emerged during data collection help to reinforce this conclusion. Firstly, the students mostly felt that having AP makes a Conservatorium student feel more 'musical' and more confident in their musical abilities. Secondly, a number of the students stated that AP possessors obtain higher marks in music skills subjects or tests, and often receive more attention from teachers and peers with regard to their ability. Thirdly, the students were often aware of the musical upbringing of their AP-possessing peers, and acknowledged that these students often

practised more, or had studied music from a very young age, or through a particular music education system that focuses on ear training, such as Suzuki or Yamaha.

Many of the opinions expressed, including some of those just mentioned, could be questionable in terms of their accuracy in reality, and in fact, are merely speculations, generalisations or personal judgements. However, given that this study focuses on individual perceptions, and how they relate to music self-concept, the emergence of a discourse of this nature is particularly relevant. The value of AP in the context of the Sydney Conservatorium is clearly culturally constructed, given that AP is not as revered in other cultures as a mark of musical giftedness. These results indicate that AP is a topic that is, at least, contemplated by these students at some stage during their study, and it is an ability that is highly valued by those who have it, and by many who do not. The students are also concerned about the competition and high expectations within the Conservatorium, and could as a result, value AP possession for the purpose of gaining extra credibility in the institution.

The differences in the music self-concepts of the AP and RP participants were more pronounced within the High School. As mentioned in chapter 5, none of the RP participants felt that music was their best or favourite subject. Despite a number of these students feeling that they are quite proficient in playing their instrument, or even ‘one of the better players’, the theoretical and aural elements of their classroom music experience have had an impact on their self-perceived abilities and confidence in music study. Perhaps there is a significant focus on achievement in theory and aural in their music course at school, given that these elements are considered to be so important to the high school students.

The results of the pitch survey highlighted some contradictions between the participants’ opinions about AP and their self-perceived aural abilities. Many of the RP participants’ responses suggest that they have an advanced level of aural skill, akin to AP possession, which reinforces the ambiguity in diagnosing an AP possessor (cf. Bahr, 1998). Given that the RP students described themselves as not having AP, it appears that the RP participants demonstrate the findings of Dowling’s (1999) study; that musicians often engage in far more elaborate cognitive processes than they are unaware of. For this reason, the apparent high regard for AP possession

seems to be more closely related to status as musician, than the possession of specific aural skills.

How does AP possession contribute to the construction of musical identities?

The responses of the RP participants regarding the acquisition of AP suggest that AP is associated with an image of innate musicianship. Overall, there was a definite sense among these students of reluctant acceptance, or resignation about not possessing AP. These individuals felt that lacking AP was a result of factors beyond their control, such as not having been 'born with it'. These responses reinforce the rather archaic view of AP as a lucky endowment of a select few musicians, and lacking the ability might suggest that an individual is not as musically gifted as an AP possessor.

Overall, the participants demonstrated a high level of awareness of their identities, but this awareness was more prominent in the older, tertiary students. These students each discussed the ways in which the perceptions of their abilities and goals have changed throughout their Conservatorium experience. As found in Pitts' (2005) study, these students appear to have acknowledged areas of their musicianship in which they are less capable than their peers, and have attempted to redefine themselves in a more realistic manner. This reassessment of goals, for these students, has clearly been a result of interaction with musicians who are more advanced than those in their previous school or social circle.

AP possession, for tertiary students, appears to be more salient in the early years of Conservatorium study, at a time when these individuals have just entered this competitive environment, and begin to compare their abilities to those of their peers. A number of these students admitted to initially feeling concerned about not possessing AP, but that they developed confidence through discovering other strengths in their music study.

AP possession seems to be a fundamental attribute of the identity of the AP participants in this study. There were a number of responses offered by these students that refer directly to the impact that AP possession has had on their music

self-concept. Despite contributing to the musicality of these individuals (through the ease in which they can arrange, transcribe or aurally identify melodies), each of the students also discussed their emotional attachment to the ability. For example, AP possession offers a Conservatorium student an ‘ego boost’, and a feeling of being special, or having one more skill than ‘the competition’.

What are the perceived advantages/disadvantages of AP possession for Conservatorium students?

Participants from both RP groups indicated that AP possession offers an individual some practical benefits such as being able to complete aural dictations quickly, to recognise or reproduce notes immediately, or to correct intonation in their own playing or in the playing of others. These skills are obviously useful for a student of the Conservatorium, but the AP participants also highlighted advantages of AP that the RP participants did not acknowledge. These responses indicate that the perceived value placed in AP possession is significantly higher in those who have it than those who do not.

Having relied on their ability for much of their music study, the AP possessors believed that they would feel drastically disadvantaged if they lost the ability. Despite the responses that indicate that having AP helps an individual obtain high marks in aural tasks, the AP participants also all acknowledged an emotional attachment to AP such as feeling ‘special’, ‘lucky’, or ‘advantaged’. There also appears to be a certain novelty or entertainment value about AP possession, particularly within the high school, where participants spoke about recognising pitches that they hear in everyday life, or the pitch recognition games played by students in their free time. Alternatively, the RP participants did not identify with these emotional advantages expressed within the AP group, despite having also developed strong aural skills through their Conservatorium study.

Many of the disadvantages of AP possession were expressed by participants from the RP group. Contrary to their responses regarding the advantages of the ability, the disadvantages were more psychological or emotional in nature. The RP students tended to feel that having AP makes an individual seem unapproachable, or more

likely to be judgemental of the performances of others. Furthermore, it was suggested that due to the jealousy of students who do not have AP, having AP might make an individual feel isolated or disliked by their peers. The word *jealousy* was raised a number of times by both AP and non-AP participants, and may explain the tendency to portray AP as having negative psychological consequences. It also reinforces the desirability of AP for these students.

The AP participants acknowledged many of the disadvantages described in the literature, such as the difficulties of performing transposed melodies (Mito, 2003). Similarly, these participants pointed out that listening to music that is out of tune, or transposed can be quite distressing and confusing for them.

Conclusion and implications of the study

This study investigated the perceptions of students at the Sydney Conservatorium regarding the value of AP possession for a musician. For these participants, AP possession contributes greatly to an individual's music self-concept, and it is suggested that further study is undertaken to explore the long-term implications of a lack of AP possession on success in music study, or on career goals.

The small sample size of this study means that generalisations can not be made about the perceptions of students at any specialised music institution, however, the consensus among all participants in the study in a number of topic areas suggest that the results are reasonably dependable. Further research, which included a much larger sample, across many institutions, would be beneficial in providing information which might improve teaching and learning in this context.

The level of interest in AP demonstrated by these students is clearly context-specific, given that AP could be described as a phenomenon of Western construction. For this reason, a beneficial extension of this study would be an investigation of a similar nature in non-Western music schools.

The results of this study indicate that individuals with AP at the Conservatorium have more positive music self-concepts than individuals without AP, but the study does not control for other elements which might affect this self-concept. Future research could improve on this study by controlling elements such as musical background and the extent of training, or advanced performance abilities in both the AP and RP groups. Nevertheless, the qualitative methodology of the study proved effective in uncovering an area of research which has not, until now, been explored. It has highlighted the significance of AP in the construction of self-concept and identity in Conservatorium students, and the need for further study.

REFERENCES

- Atkinson, R. L., Atkinson, R. C., Smith, E. E., Bem, D. J., & Nolen-Hoeksema, S. (2000). *Hilgard's introduction to psychology* (13th Ed.). Orlando, FL: Harcourt.
- Austin, J., Renwick, J., & McPherson, G. E. (2006). Developing motivation. In G. E. McPherson (Ed.) *The child as musician: A handbook of musical development* (pp. 213–238). Oxford: Oxford University Press.
- Bachem, A. (1940). The genesis of absolute pitch. *Journal of the Acoustical Society of America*, *11*, 434–439.
- Baharloo, S., Johnston, P. A., Service, S. K., Gitschier, J., & Freimer, N. B. (1998). Absolute pitch: An approach for identification of genetic and non-genetic components. *American Journal of Human Genetics*, *62*, 224–231.
- Bahr, N. (2005) Diversity of accuracy profiles for absolute pitch recognition. *Psychology of Music*, *33*, 58–93.
- Berndt, T. J., & Burgoyne, L. (1996). Social self-concept. In B. A. Bracken (Ed.), *Handbook of self-concept* (pp. 171–209). New York: Wiley.
- Best, J. W. (1981). *Research in education* (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Bischoff Renninger, L., Granot, R.I., & Donchin, E. (2003). Absolute pitch and the P300 component of the event-related potential: An exploration of variables that may account for individual differences. *Music Perception*, *20*, 357–382.
- Brown, W. A., Sachs, H., Cammuso, K., & Folstein, S. E. (2002). Early music training and absolute pitch. *Music Perception*, *19*, 595–597.
- Burns, R. B. (1979). *The self-concept in theory, measurement, development and behaviour*. London: Longman.
- Burns, R. B. (2000). *Introduction to research methods* (4th ed.). Frenchs Forest, NSW: Longman.
- Davidson, J. W. (1999). Self and desire: A preliminary exploration of why students start and continue with music learning. *Research Studies in Music Education*, *12*, 30–37.
- Davidson, J. W. (2002). The solo performer's identity. In R. A. R. MacDonald, D. J. Hargreaves & D. Miell (Eds.), *Musical identities* (pp. 97–113). Oxford: Oxford University Press

- Davidson, J. W., & Borthwick, S. J. (2002). Family dynamics and family scripts: A case study of musical development. *Psychology of Music, 30*, 121–136.
- Deutsch, D., & Hentworth, T. (2004). Absolute pitch, speech, and tone language: Some experiments and a proposed framework. *Music Perception, 21*, 339–356.
- Dowling, W. J. (1999). The development of music perception and cognition. In D. Deutsch (Ed.), *The psychology of music* (2nd ed., pp. 603–625). San Diego, CA: Academic Press.
- Flick, U. (2002). *An introduction to qualitative research*. London: Sage.
- Gough, S., & Scott, W. (2000). Exploring the purposes of qualitative data coding in educational research: Insights from recent research. *Educational Studies, 26*, 339–354.
- Gregerson, P. (1999). Absolute pitch: Prevalence, ethnic variation and estimation of the genetic component. *American Journal of Human Genetics, 65*, 911–913.
- Guay, F., Marsh, H. W., & Boivin, M. (2003). Academic self-concept and academic achievement: Developmental perspectives on their causal ordering. *Journal of Educational Psychology, 95*, 124–136.
- Hamilton, R. H., Pascual-Leone, A., & Schlaug, G. (2004). Absolute pitch in blind musicians. *Neuroreport, 15*, 803–806.
- Harter, S. (1996). Historical roots of contemporary issues involving self-concept. In B. A. Bracken (Ed.), *Handbook of self-concept* (pp. 1-37). New York: Wiley.
- Hoge, R. D., & Renzulli, J. S. (1993). Exploring the link between giftedness and self-concept. *Review of Educational Research, 63*, 449–465.
- James, W. (1890). *The principles of psychology*. Cambridge, MA: Harvard University Press.
- Justus, T. C., & Bharucha, J. J. (2002). Music perception and cognition. In H. Pashler (Series Ed.) & S. Yantis (Vol. Ed.), *Handbook of experimental psychology: Vol. 1. Sensation and perception* (3rd ed., pp. 453–492). New York: Wiley.
- Kalandyk, J. (1996). *Music and the self-esteem of young children*. Lanham, MD: University Press of America.
- Krumhansl, C. L. (2000). Rhythm and pitch in music cognition. *Psychological Bulletin, 126*, 159–179.
- Levitin, D. J. (1994). Absolute memory for musical pitch: Evidence from the production of learned melodies. *Perception and Psychophysics, 56*, 414–423.

- Levitin, D. J., & Rogers, S. E. (2005). Absolute pitch, perception, coding and controversies. *Trends in Cognitive Sciences*, *9*, 25–31.
- Marsh, H. W. (1992). *Self Description Questionnaire (SDQ) II: A theoretical and empirical basis for the measurement of multiple dimensions of adolescent self-concept: An interim test manual and a research monograph*. Campbelltown, New South Wales: University of Western Sydney.
- Marsh, H. W. (2003). Big-fish–little-pond effect on academic self-concept: A cross-cultural (26 country) test of the negative effects on academically selective schools. *American Psychologist*, *58*, 364–376.
- Marsh, H. W., & Hattie, J. (1996). Theoretical perspectives on the structure of self-concept. In B. A. Bracken (Ed.), *Handbook of self-concept* (pp. 38–90). New York: Wiley.
- Marsh, H. W., & Roche, L. A. (1996). Structure of artistic self-concepts for performing arts and non-performing arts students in a performing arts high school: “Setting the stage” with multigroup confirmatory factor analysis. *Journal of Educational Psychology*, *88*, 461–477.
- Miller, L. K. & Clausen, H. (1997). Pitch identification in children and adults: Naming and discrimination. *Psychology of Music*, *25*, 4–17.
- Mito, H. (2003). Performance at a transposed keyboard by possessor and non-possessor of absolute pitch. *Bulletin for the Council for Research in Music Education*, *157*, 18–24.
- Miyazaki, K. (1995). Perception of relative pitch with different references: Some absolute-pitch listeners can’t tell musical interval names. *Perception and Psychophysics* *57*, 962–70.
- Moulton, P., Moulton, M., Housewright, M., & Bailey, K. (1998) Gifted & talented: Exploring the positive and negative aspects of labelling. *Roeper Review*, *21*, 153.
- Orne, M. T. (1962). On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. *American Psychologist*, *17*, 776-783.
- Parncutt, R., & Levitin, D.J. (2001). Absolute pitch. In S.Sadie. (Ed.), *The new Grove dictionary of music and musicians* (2nd ed., pp. 27–29). London: Macmillan.

- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd Ed.). Thousand Oaks, CA: Sage.
- Pitts, S. (2005). *Valuing musical participation*. Aldershot, UK: Ashgate.
- Rauschecker, J. P. (2001). Cortical plasticity and music. *Annals of the New York Academy of Science*, 930, 330–336.
- Schellenberg, E.G. & Trehub, S.E. (2003), Good pitch memory is widespread. *Psychological Science*, 14, 262–266.
- Seashore, C. E. (1919). *The psychology of musical talent*. Boston: Silver Burdett
- Sergeant, D. C., & Roche, S. (1973). Perceptual shifts in the auditory information processing of young children. *Psychology of Music*, 1, 39–48.
- Shavelson, R. H., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research*, 46, 407–441.
- Smith, J. A., Harre, R., & Van Langenhove, L. (Eds.). (1995). *Rethinking methods in psychology*. London: Sage.
- Stets, J., & Burke, P. (2003). A sociological approach to self and identity. In M. Leary & J. Tangney (Eds.). *Handbook of self and identity*. New York: Guilford Press.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Sydney Conservatorium of Music (2005) Retrieved 25th October, 2006, from <http://www.music.usyd.edu.au/>
- Takeuchi, A. H., & Hulse, S. H. (1993). Absolute pitch. *Psychological Bulletin*, 113, 345–361.
- Vispoel, W. P. (1995). Self-concept in artistic domains: An extension of the Shavelson, Hubner & Stanton (1976) model. *Journal of Educational Psychology*, 87, 134–153.
- Vitouch, O. (2003). Absolutist models of absolute pitch are absolutely misleading. *Music Perception*, 21, 111–117.
- Ward, W. D. (1999). Absolute pitch. In D. Deutsch (Ed.), *The psychology of music* (2nd ed., pp. 265–298). San Diego, CA: Academic Press.
- Watson, C. (1995). *Absolute pitch: A study into the factors contributing to the development of different levels of absolute pitch*. Unpublished honours thesis, Sydney Conservatorium of Music.

- Wigfield, A., & Wagner, A. L. (2005). Competence, motivation, and identity development during adolescence. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 222–239). New York: Guilford Press.
- Zillmann, D., & Gan, S. (1997). Musical taste in adolescence. In D. J. Hargreaves & A. C. North (Eds.), *The social psychology of music* (pp. 161–187). Oxford: Oxford University Press.

APPENDICES

Appendix A. Pitch survey completed by all participants.

Pitch survey				
1. I can accurately sing any note without hearing it played on an instrument				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
2. I can recognise and name any note that is played to me				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
3. I can recognise one or two of the notes that I hear or play often in my music practice				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
4. I can remember the starting note of a piece I've been playing or singing many hours after the rehearsal				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
5. I can recognise and name notes played to me, if they are played on my main instrument				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
6. I can accurately sing any note, if given a starting note as a reference				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree
7. I can recognise the key of any piece that is played to me				
Strongly agree	Agree	Undecided	Disagree	Strongly disagree

Appendix B. Tertiary Participant Information Statement

1 of 2



The University of Sydney
SYDNEY CONSERVATORIUM
OF MUSIC

**Tertiary Participant Information Statement**

Dear Conservatorium student,

I am writing to invite you to take part in a research study entitled **Exploring the self-concept and identity of Sydney Conservatorium Students with and without absolute pitch**. As part of the requirements of my Music Education Honours degree, I would like to interview students to obtain information about self-concept/identity and attitudes towards Absolute (or perfect) pitch.

Absolute Pitch is the rare ability to recognise and/or reproduce a note without any external reference. The aim of this study is to provide Conservatorium teachers with detailed information regarding the way Conservatorium students view Absolute Pitch and their overall musical ability and how this view may influence their motivation and progress in music study.

The study is an in-depth, multi-case study exploring the individual perceptions of Conservatorium students. It will involve one interview, which will be conducted at the Conservatorium at a time that is convenient for you. This interview will take approximately 30-45 minutes.

Audio recordings will be made of the interview for the purpose of research analysis. The participant retains copyright of all recorded material and recordings will only be used for the purposes of this research study.

2 of 2

All aspects of this study will remain strictly confidential. Research findings may be submitted for publication, but individual participants will not be identifiable in such a publication.

Participation in this study is voluntary and if you choose to participate, you are free to withdraw at any time without penalty or prejudice.

If you would like to know more about this study, please feel free to contact me on 0404 895 774. Alternatively, you may contact my Conservatorium Supervisor, Dr Kathryn Marsh on (02) 9351 1333.

Any persons with concerns or complaints about the conduct of a research study can contact the Manager, Ethics Administration, University of Sydney on (02) 9351 4811.

Yours sincerely,

Julie O'Connor

Appendix C. Parent Information Statement

1 of 2



The University of Sydney
SYDNEY CONSERVATORIUM
OF MUSIC



Parent Information Statement

Dear parent,

I am writing to permission for your child to take part in a research study entitled **Exploring the self-concept and identity of Sydney Conservatorium Students with and without absolute pitch**. As part of the requirements of my Music Education Honours degree, I would like to interview students to obtain information about self-concept/identity and attitudes towards Absolute (or perfect) pitch.

Absolute Pitch is the rare ability to recognise and/or reproduce a note without any external reference. The aim of this study is to provide Conservatorium teachers with detailed information regarding the way Conservatorium students view Absolute Pitch and their overall musical ability and how this view may influence their motivation and progress in music study.

The study is an in-depth, multi-case study exploring the individual perceptions of Conservatorium students. It will involve one interview, which will be conducted at the Conservatorium High School at a time that is convenient for your child, and which will not interfere with school commitments. This interview will take approximately 30-45 minutes.

Audio recordings will be made of the interview for the purpose of research analysis. The participant retains copyright of all recorded material and recordings will only be used for the purposes of this research study.

2 of 2

All aspects of this study will remain strictly confidential. Research findings may be submitted for publication, but individual participants will not be identifiable in such a publication.

Participation in this study is voluntary and if you choose to participate, you are free to withdraw at any time without penalty or prejudice.

If you would like to know more about this study, please feel free to contact me on 0404 895 774. Alternatively, you may contact my Conservatorium Supervisor, Dr Kathryn Marsh on (02) 9351 1333.

Any persons with concerns or complaints about the conduct of a research study can contact the Manager, Ethics Administration, University of Sydney on (02) 9351 4811.

Yours sincerely,

Julie O'Connor

Appendix D. Parent consent form

The University of Sydney
SYDNEY CONSERVATORIUM
OF MUSIC

**Parent consent form**

**Exploring the self-concept and identity of Sydney Conservatorium Students
 with and without absolute pitch.**

I consent to the audio taping and interviewing of my child _____
 by Julie O'Connor from the Sydney Conservatorium of Music for the purpose of
 her Music Education Honours research project on the relationship between
 Absolute Pitch and Self-concept/identity. I understand that audio recordings will
 only be used for the purpose of this research study, participants will retain
 copyright over the recorded material and the names of participants will remain
 confidential. I understand that participation is voluntary and my child may
 withdraw at any time.

Signed _____ (Parent/Guardian)

Date _____

Signed _____ (Participant)

Date _____

Please return these forms to:

Julie O'Connor

3 Winchcombe Place, Castle Hill, NSW, 2154

Any persons with concerns or complaints about the conduct of a research study
 can contact the Manager, Ethics Administration, University of Sydney on (02)
 9351 4811.

Appendix E. Tertiary student consent form

The University of Sydney
**SYDNEY CONSERVATORIUM
OF MUSIC**

**Tertiary student consent form****Exploring the self-concept and identity of Sydney Conservatorium Students
with and without absolute pitch.**

I agree to participate in an audio-taped interview conducted by Julie O'Connor from the Sydney Conservatorium of Music for the purpose of contributing to her Music Education Honours research project on Absolute Pitch and Self-concept/identity. I understand that audio recordings will only be used for the purpose of this research study, participants will retain copyright over the recorded material and the names of participants will remain confidential. I understand that participation is voluntary and I withdraw at any time.

Signed _____ (Participant)

Date _____

Please return these forms to:

Julie O'Connor
3 Winchcombe Place, Castle Hill, NSW, 2154

Any persons with concerns or complaints about the conduct of a research study can contact the Manager, Ethics Administration, University of Sydney on (02) 9351 4811.

Appendix F. Interview topics



The University of Sydney
SYDNEY CONSERVATORIUM
OF MUSIC



**Exploring the self-concept and identity of Sydney Conservatorium Students
 with and without absolute pitch.**

Interview topics

Interviews conducted with Conservatorium High School and tertiary students will cover the following topics:

Musical Background and experience

- Current age and age when started musical training
- Musical experience of family members
- Extent of music training
- Future goals in music and in general
- Plans made to achieve goals
- Hobbies and interests

Absolute Pitch

- Definitions of the ability
- How Absolute Pitch is attained
- Perceived value/benefits of Absolute Pitch possession
- Perceived prevalence of Absolute Pitch among fellow students
- Perceived importance of Absolute Pitch possession in Conservatorium study
- Perceived disadvantages of Absolute Pitch possession

Self-concept

- Self-reported ability in music performance, composition, musicology
- Self-reported ability overall in music
- Self-concept in areas other than music (physical, social, intellectual and emotional)