Chapter 27: Motivation to learn

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AThe historical perspective

Human motivation is extremely complex. Historically, numerous theories have developed in attempts to explain it. These, to varying degrees, emphasise motivation as deriving from within the individual, within the environment, or as a complex interaction between the two mediated by cognition. The most recent theories emphasise the way that our perceptions of events are determined by our construction of them, these interpretations subsequently influencing our self-esteem, self-efficacy and motivation. They acknowledge the capacity of individuals to determine their own behaviour, whilst also recognising the role of the environment in rewarding or punishing particular behaviours influencing subsequent cognitions and later actions. There has also been increasing recognition that motivation operates at different levels and across different time scales (for more detail of generic theories of motivation and earlier reviews of motivation in relation to music see Asmus 1994; O'Neill and McPherson 2002; Hallam 2002; Austin *et al*. 2006).

Much of the early research on motivation in music was not embedded within any specific motivational research paradigm or theoretical position, although expectancy-value models which have been proposed to explain motivation for particular tasks in education (e.g. Eccles 1983) have provided a framework for some recent work. The research has also focused almost exclusively on motivation to learn and continue to play an instrument. There has been little interest in motivation to listen to music, compose, or engage in other musical activities.

A A framework for understanding motivation in music

In this chapter, I set out a model which attempts to integrate the various theoretical approaches to understanding motivation embedded within a broadly systemic approach as proposed by Bronfenbrenner (1979) which suggests that the process of human development depends on mutual accommodation which occurs throughout the life-course between an individual and the various systems which they or others close to them encounter in their environment (see chapter 26 for details).

Figure 1 sets out a framework which illustrates the complex interactions which occur over time in relation to motivation. Certain aspects of our individuality are pre-determined, for instance, our biological temperament, our sex, and our age. These are shaped through interaction with the environment to develop our personality, gender identity, cognitive processes, and our self-perceptions. We are motivated because we desire social approval, particularly from those we admire and respect. Such praise from others is internalised, raises self-esteem, and enhances confidence. Some environmental influences are internalised to such an extent that they come to affect the individual's functioning over time in a fairly consistent way. Individuals set themselves goals, which determine their behaviour. These goals are influenced by individual and self perception characteristics as well as environmental factors. Where the environment satisfies individual needs and facilitates personal goals motivation is likely to be enhanced. Where the environment presents obstacles, the individual may give up or be spurred on to greater efforts to overcome them, perhaps by finding a more conducive environment. Behaviour is the end link in the chain but at the time of enactment it too can be influenced and changed by environmental factors. There is interaction between the

environment and the individual at every level and in the long and short term. Individuals can act upon the environment to change it, or seek out new environments more conducive to their needs (Hettema and Kenrick 1992). The model recognises the importance of cognitive factors and self-determination in behaviour. While we have needs and desires we are aware that we need to consider the consequences of our actions before we attempt to satisfy them. Cognition plays a role in the ways in which we attempt to enhance our self-esteem leading us to attribute our success or failure to causes which will allow us to maintain a consistent view of ourselves. When a learner has completed a learning task successfully this will have an impact on self-esteem and motivation which will be carried forward to subsequent learning tasks. Conversely, when learning outcomes are negative, motivation may be impaired. In the following sections I provide a more detailed account of what we know about each of the elements outlined in the model as they relate to motivation in music.

A Individual characteristics

B Enduring individual characteristics: physical, gender and personality factors

Chapter 26 considers many elements of individuality which may influence the nature of engagement with music including physical, gender, and personality characteristics. These are not discussed further here. The focus in this section is the complex and multi-faceted nature of motivation to become actively involved in music making which includes the way that it intrinsically acts to meet needs which vary between individuals in relation to their personality characteristics. For instance, Motte-Haber (1984) has suggested a range of internal motives including the desire for achievement, curiosity, and self-actualisation, while Nagel (1987) stressed the need for personal fulfilment met by the emotion-inducing quality of music, satisfaction of a positive social response within performance settings, exploration of

aggressive drives through the exploitation of the motor skills entailed in musical performance, and some voyeuristic and exhibitionist desires. Persson (1993; Persson *et al.*1996) studying pianists also emphasised the importance of hedonic drive, while acknowledging the role of social and achievement motives. Gellrich and colleagues (1986) identified three achievement-related motives: a general achievement motivation; a specifically music oriented achievement orientation; and a sensual-aesthetic motive, the pleasure and joy of playing certain pieces of music. Musicians it seems derive considerable personal fulfilment from the act of making music, in addition to the social rewards that it offers. The balance between these motives may change over time as individuals progress through their musical careers (Sosniak 1985; Harnischmacher 1997; Manturzewska 1990) and may contribute to determining individual career trajectories.

The diversity of individual motivation has been explored in relation to amateur musicians in addition to professionals. Some amateurs view music as personal amusement while for others it constitutes serious leisure only distinguishable from the work of professionals because it is not their livelihood (Gates 1991). For some music is a key element of their identity (Pitts 2005) and they invest huge energy and creativity in it (Finnegan 1997). Their amateur status suggests that they find their musical activities intrinsically motivating although social interaction can also be an important motivator.

B Malleable aspects of the personality and self-concept

An individual's identity or self-concept represents the way s/he thinks about him/herself and his/her relationships with others (Rogers 1961) (see Chapter 43) and plays a crucial role in motivation. Behaviour is influenced by the individual's interpretation of situations and

events; their expectations; and the goals that they have set for themselves related to their identity. Music self-concept has been shown to be linked to motivation, interest, and participation in school and out of school musical activities (Austin 1991) and develops early as quite young children are able to assess how well they can complete particular musical tasks (Greenberg 1970). However, being good at something does not necessarily transfer to interest in it. Asmus and Harrison (1990) working with non-music major college students found no relationship between music motivation and aptitude. They argued that the drive for music stems from love of music.

Children's self-concept in relation to music at school and the value that they place on music appear to decline as they get older, the latter more than for reading and mathematics (Wigfield *et al.* 1997; Mota 1999). However, those adolescents who are actively engaged in music making through playing an instrument favour this activity over almost all others. Being a musician becomes an important element of their identity. As children progress through school they become increasingly aware of their own capabilities through making comparisons and receiving feedback from others. Where comparisons are made with high-attaining others self-concept is likely to be deflated. This process is influenced by the context of learning, whether it is supportive or critical.

Self-efficacy beliefs based on our evaluation of the likelihood of our success in relation to particular tasks or areas of work also play a part in determining whether particular goals will be pursued and subsequently achieved (Bandura 1982). McPherson and McCormick (1999; 2006) studied 190 pianists aged 9-18 before taking an examination and found that self-efficacy prior to entering the examination predicted their examination result more strongly than any other factors. Bandura (1989) suggested that motivation for an activity is at its peak

when strong self-efficacy beliefs are combined with some moderate uncertainty about the outcome, i.e. when a person feels competent but challenged. However, for intrinsic motivation to flourish, feelings of self-determination are also necessary. So even if an activity is challenging and a person feels him/herself to be highly competent s/he will not display high levels of intrinsic motivation unless the activity is perceived as self-determined (Ryan and Deci 2000). Evidence of the links between intrinsic motivation, self-determination, and the use of self-regulating practising strategies support this (Austin *et al*. 2006). Renwick and McPherson (2002) demonstrated how a 12 year old practised with heightened attention, persistence and enhanced strategy use when working on a piece which she had chosen herself as opposed to one chosen by the teacher. The extent to which learners value what they are doing predicts engagement across many different facets of musical practice (O'Neill 1999b) and contributes to prediction of examination results more strongly than weekly practice or anxiety (McPherson and McCormick 2000).

B Goals and aims

The goals and aims that individuals strive to attain are related to their identity, self-concept, self-efficacy and what they believe is possible for them. These take account of both context and cognition. If an individual perceives him or herself as successful and attributes this success to high ability they may come to include in their self-concept a 'positive possible future self in that domain (Markus and Ruvolo 1989). Possible selves can be powerful motivators providing long term goals and encouraging the setting up of interim goals which need to be achieved en route. If an individual does not have a positive possible self as a musician (professional, amateur or listener) in the long, medium, or short term they are unlikely to maintain their interest in music. This is illustrated by McPherson and McCormick

(2000) who found that for many children playing an instrument was no different from participating in a team sport, taking up a hobby, or pursuing other interests. Very few saw it as something that could possibly lead to a future career. MacNamara and colleagues (2006) also showed that career planning was in evidence in the very earliest stages of learning for nine professional musicians along with dedication, commitment, determination and a willingness to make sacrifices. Self-belief became increasingly important as they encountered more critical appraisal and greater competition as they progressed (MacNamara *et al.* 2006). However, goals can sometimes conflict with each other and their fulfilment can be disrupted by others (Harnischmacher 1995). Individuals may have to make trade offs between goals at different levels and undertake some activities to attain a particular goal which they may not find particularly enjoyable. For instance, young people wishing to become professional musicians do not always enjoy practising alone and may require parental support and encouragement to do so (Howe and Sloboda 1991).

A Cognition: individual characteristics and processes

All modern theories of motivation take account of cognition – an acceptance that much of our behaviour is mediated by our thoughts about and perceptions of events (Kelly 1955). This process is influenced, in part, by locus of control, the extent to which the individual perceives that s/he has control over situations (Rotter 1966). While prior knowledge and skills in a domain are powerful determinants of performance in that domain our beliefs about our current capabilities also play a part. Also important are our beliefs about the nature of learning. In mainstream education a distinction has been made between performance and learning goals (Elliott and Dweck 1988) the former concerned with gaining positive judgements of competence as compared with others and avoiding negative ones, the latter

with increasing mastery, reflecting the desire to learn new skills, master new tasks or understand new things.

In learning in music, the relationship between these goals is complex. For instance, in studies of band students Austin (1988; 1991) found that those assigned to a competitive condition exhibited levels of motivation and performance achievement comparable to those in a non-competitive condition, while Schmidt (2005) reported that instrumental students defined their success in relation to mastery and co-operative orientations placing less emphasis on competitive and ego orientations. The context of active participation in music seems to influence the goals adopted, some contexts supporting the development of both types of goals. Sandene (1998) found that students' goal orientations were related to the perceived motivational climate in the classroom with overt teacher behaviours, in particular the ratio of positive to negative feedback, being particularly important.

To succeed in music clearly requires mastery behaviour to sustain the motivation for many hours of practice. For instance, O'Neill (1997), studying beginner instrumentalists, found that children who experienced mastery-oriented behaviour after experiencing failure on a problem-solving task made more progress on their instrument than children who initially displayed helpless behaviour. Research from other domains has shown a relationship between students' theories of intelligence and their goal choices. Where students hold an entity theory of intelligence (fixed and immutable) they are more likely to adopt performance goals while those holding an incremental view of intelligence are more likely to choose a learning goal (Dweck and Leggett 1988). There is potential for exploring these relationships in novice, expert, amateur and professional musicians (see also Austin *et al.* 2006).

Individuals are motivated to establish, maintain and promote a consistent and usually positive self-image, so they develop a variety of coping strategies to maintain self-worth some of which may be self-defeating, for instance, reducing effort (Covington 1984). How individuals attribute successes and failures is important in maintaining self-esteem (Weiner 1986). The causes of success or failure can be seen as stable or unstable; controllable or uncontrollable and internal or external. Overall, five major attribution categories have been found in music: effort, musical background, classroom environment, musical ability, and affect for music (Asmus 1986a), although findings specifically related to performance in an examination also included effort in preparation, effort in the examination, nervousness, luck, and task difficulty (McPherson and McCormick 2000). Musical ability and effort are the most frequently cited attributions by music students (Austin and Vispoel 1998). Highly motivated music students tend to make effort attributions, while students with low motivation cite ability. (e.g. Austin and Vispoel 1998). These findings seem to be broadly consistent across grade levels (Asmus 1986b; McPherson and McCormick 2000), school settings, and music populations, although there is some evidence that ability attributions become more frequent as children get older (Arnold 1997; Asmus 1986b). Harter (1985) proposes that what is important in maintaining self-esteem and motivation is beneffectance. This involves attributing successful outcomes to internal causes and unsuccessful to external. This is likely to be important in sustaining motivation in musical activities. Considering the effect of attributing success or failure to the use of particular learning strategies, Vispoel and Austin (1993) found that explaining failure in terms of the adoption of less than optimal learning strategies was effective in improving these and increasing effort.

Metacognition (the term given to our knowledge of our own learning) is relevant for motivation insofar as it indicates our awareness of our own strengths and weaknesses and the

ways in which we learn best, and may be implicated in the way that we manage our attributions. Metacognitive strategies are concerned with the planning, monitoring and evaluation of learning and performance. For most musicians life is dominated by public performance and preparation for it. As practice is not always intrinsically motivating, developing strategies for managing motivation is crucial. Preparing for public performance necessitates giving priority to practice (Manturzewska 1969), mobilizing arousal specifically for performance (Bochkaryov 1975) and managing anxiety (Hamann 1982). These all depend on the development of appropriate metacognitive skills.

A The environment

The environment is crucial in determining the opportunities that individuals have to engage with music and the extent to which they will be supported while doing so. Music is not valued equally in all cultures. In some it is viewed as decadent and is forbidden. In others it is highly valued and those involved in its composition or execution are highly revered members of society. Economic, demographic and political factors can have a major impact on the opportunities that may be available for musical engagement (Simonton 1997). Over time the value placed on music can change and within any particular culture different types of music may be valued by specific sub-groups. We know very little about how these cultural and societal factors mediate motivation to engage with music or the type of activity selected. In the Western world some individuals learn to play an instrument because it is expected by their family or school. Others start by chance because tuition is on offer in school or their friends have decided to play.

Although, most individuals are involved in full time education when they take up a musical instrument, there has been almost no research on the relationship between the institutional learning environment and motivation to engage with music. There is some evidence that in a conservatoire environment there are relationships between institutional and departmental expectations and the amount of time spent practising which are mediated by the dominating value system (Jorgensen 1997) and that in mainstream education support within schools from generalist classroom teachers and the senior management team impacts on the extent to which instrumental teaching is effective (Hallam and Prince 2000). Teachers play an important role in motivating students and can contribute towards pupils' attitudes and subsequent attainment (Szubertowska 2005). Where teachers motivate pupils to engage with music, identities as musicians develop leading to more positive attitudes towards school music and teachers (Lamont 2002). In adolescence the peer group is very powerful and can bring negative pressure to bear in relation to engagement with some types of music (Finnas 1987; 1989). To withstand this musical identities need to be well developed. The influence of early teachers, who are viewed as warm and sympathetic seems to be particularly important in this respect (Sosniak 1985; Sloboda and Howe 1991). Relatively uncritical encouragement in the early stages of engagement with music encourages the development of a positive musical identity. Once this is established later teachers provide high status role models with whom the young musician can identify and emulate (Manturzewska 1990).

There is considerable evidence that parents have a vital influence on children's motivation for involvement with music and the acquisition of musical skill (see Chapter 28). In the early years the family are likely to be the main source of musical stimulation and may be key to engendering future interest in music. The age at which children first sing is related to the number of musical behaviours initiated by the parents (Howe *et al.* 1995) and the

development of perfect pitch seems to occur with particularly systematic exposure to music in early childhood (Sergeant 1969). The influence of parents can also contribute to the choice of instrument to be played (Fortney *et al.* 1993) and their ongoing support plays a crucial role in whether children persist and commit to musical engagement in the long term. While the literature as a whole indicates that having a highly supportive and encouraging home background is important, it is clearly not essential. Highly effective individuals in a range of domains have been found to have histories marked by severe frustration, deprivation and traumatic experiences (MacKinnon 1965). Another important contributor to motivation is the relationship between teachers, parents and learners (see Chapter 28). The most motivated students are those who work in harmony with their teachers and parents.

A Direct influences of rewards and punishments from the environment

Intrinsic motivation is a crucial aspect of developing self-identity as a musician. This may take several forms but one key element is enjoyment of the experience of engagement with music. Tasks that are intrinsically motivating share certain structural and emotional characteristics (Csikszentmihalyi 1990) offering a level of challenge that is in balance with a person's current skills (Good and Brophy 1991). When this occurs an individual derives pleasure from the work and tends to continue with it. This is known as a state of flow. If the task is too easy the person becomes bored. If the work demands skills beyond the capabilities of the individual anxiety is created. Csikszentmihalyi and colleagues (1993) have shown that students experience a state of flow most often when participating in chosen activities such as music as opposed to academic-oriented activities or when interacting with peers. Custodero (1999) observed 4 and 5 year old children in a music classroom over 8 weeks and flow

experience was associated with high self-concept or skill, perceived challenge, and active engagement.

Not all musical activities are intrinsically motivating for all people. For instance, novice and professional musicians exhibit diversity in motivation to practise. Many students require parental encouragement to practise (Howe and Sloboda 1991) or other rewards including playing favourite pieces of music or pleasing teachers. Practising for love of the instrument is rare (Harnischmacher 1995). A study of the motivation of beginner instrumentalists found that where the children remained enthusiastic about continuing to play their involvement centred around the instrument itself and the repertoire that they were learning, with less motivated children referring to participation in band, or the opinions of their parents and friends as shaping their own attitudes (Pitts *et al.* 2000).

A Lack of motivation

For a full understanding of musical motivation, the study of drop-outs is important. Those ceasing to play tend to do less practice, have attained less (Sloboda *et al.* 1996; Hallam 1998) and perceive themselves as less musically able, receiving less family encouragement and having greater strengths in other recreational activities (Frakes 1984). The time costs of playing an instrument are too great in relation to the rewards that they receive (Hurley 1995). Overall, no single explanatory factor emerges in explaining drop-out but several have been identified including lower socio-economic status, poor ability to understand instructions, and poor self-concept in relation to reading music, maths, reading achievement, and general scholastic attainment (Klinedinst 1991; Hallam 1998). Research to date has tended to focus

on participation in formal music tuition in the western classical tradition. Different factors may apply to those dropping out of other musical activities.

A Future research directions

The evidence presented above suggests that motivation to be involved in active music making is determined by complex interactions between the individual and the environment within which they find themselves. Some of the environmental effects, in particular those relating to early musical experiences, learning outcomes, self-efficacy and subsequently self-esteem are internalized by the individual in such a way that they become part of that individual's characteristics rendering it both impossible and pointless to disentangle them. Once internalized they impact on motivation to continue to be involved in music. The individual's commitment to and involvement in music making can also affect their environment and the people in it. Families may make changes to support their musical offspring, friends may be influenced to participate in making music. The transaction is bi-directional. The nature of the music profession, which is extremely competitive, means that only the highly motivated will have sufficient determination to succeed, although many more may become highly skilled amateurs.

The research to date has mainly, although not exclusively, related to school aged students and the types of tuition on offer in those contexts. There is a need for research exploring issues of motivation in different learning contexts, informal and formal, and for learners of different ages and across different types of music. Related to this is the question of drop out at higher levels of expertise than have so far been considered, for instance, those who study music in higher education, who do not then go on to make their living from musical activities, or

indeed those who become professional musicians and then leave the profession early. In addition, most of the research has focused on motivation to become a musician. Listening to music plays an important part in the daily lives of most people in the Western world but there is little research relating to those individuals for whom listening to music is a passion, who have extensive collections of recorded music and are extremely knowledgeable about music without necessarily actively participating in making it. There is also a need to explore why music plays no part in the lives of some people.

A References

Arnold JA (1997). A comparison of attributions for success and failure in instrumental music among sixth-, eighth-, and tenth grade students. *Update: Applications of Research in Music Education,* **15,** 19-23.

Asmus EP (1986a). Achievement motivation characteristics of music education and music therapy students as identified by attribution theory. *Bulletin of the Council for Research in Music Education,* **86,** 71-85.

Asmus EP (1986b). Student beliefs about the causes of success or failure in music: A study of achievement motivation. *Journal of Research in Music Education*, **34,** 262-278.

Asmus EP and Harrison CS (1990). Characteristics of motivation for music and musical aptitude of undergraduage nonmusic majors. *Journal of Research in Music Education*, **38,** 258-268.

Asmus EP (1994). Motivation in music teaching and learning. *The Quarterly Journal of Music Teaching and Learning,* **5,** 5-32.

Austin JR (1988). The effect of music contest format on self-concept, motivation, and attitude of elementary band students, *Journal of Research in Music Education,* **36,** 95-107.

Austin JR (1991). Competitive and non-competitive goal structures: An analysis of motivation and achievement among elementary band students. *Psychology of Music*, **19,** 142-158.

Austin JR, Renwick J and McPherson GE (2006). Developing Motivation. In GE McPherson, ed. *The child as musician: A handbook of musical development,* pp 213-238. Oxford University Press, Oxford.

Austin JR and Vispoel WP (1998). How American adolescents interpret success and failure in classroom music: Relationships among attributional beliefs, self-concepts and achievement. *Psychology of Music*, **26,** 26-45.

Bandura A (1982). Self-efficacy mechanism in human agency. *American Psychologist,* **37,** 122-147.

Bandura A (1989). Self-regulation of motivation and action through internal standards and goal systems. In LA Pervin, ed. *Goal concepts in personality and social psychology,* pp 19-86. Erlbaum, Hillsdale, NJ.

Bochkaryov LL (1975). The psychological aspects of musicians' public performance. *Voprosy Psikhologii*, **21,** 68-79.

Bronfenbrenner U (1979). *The Ecology of Human Development.* Harvard University Press, Cambridge, MA

Covington M. (1984). The motive for self-worth. In R Ames and C Ames, eds. *Research on motivation in education: Student motivation,* Academic Press, New York

Csikszentmihalyi M (1990). *Flow: the psychology of optimal experience.* Harper Row, New York.

Csikszentmihalyi M, Rathunde K and Whalen S (1993). *Talented teenagers: The roots of success and failure*. Cambridge University Press, Cambridge.

Custodero LA (1999). *Construction of musical understandings: The cognition-flow interface.* Paper presented at the Cognitive Processes of Children Engaged in Music Activity Conference, Champaign, Urbana, IL, June, 1999.

Dweck CS and Leggett EL (1988). A social cognitive approach to motivation and personality. *Psychological Review,* **95,** 256-373.

Eccles J (1983). Expectancies, values and academic behaviours. In JT Spence, ed. *Achievement and achievement motives,* pp. 75-146. Freeman, San Francisco.

Elliott ES and Dweck CS (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology,* **54,** 5-12.

Finnas L (1987). Do young people misjudge each other's musical taste? *Psychology of Music,* **15,** 152-166.

Finnas L (1989). A comparison between young people's privately and publicly expressed musical preferences. *Psychology of Music*, **17,** 132-145.

Finnegan R (1997). Music, performance and enactment. In H Mackay, ed. *Consumption and everyday life,* pp. 114-158. Sage/Open University, London.

Fortney PM, Boyle JD and DeCarbo NJ (1993). A study of middle school band students' instrumental choices. *Journal of Research in Music Education*, **41,** 28-39.

Frakes L (1984). *Differences in music achievement, academic achievement and attitude among participants, dropouts and non-participants in secondary school music.* Unpublished Phd, University of Iowa.

Gates JT (1991). Music participation: theory research and policy. *Bulletin of the Council for Research in Music Education,* **109**,1-35.

Gellrich M, Osterwold M and Schulz J (1986). Leistungsmotivation bei Kindern im Instumentalunterricht. Bericht uber eine erkundungsstudie. (Children's performance motivation in instrumental teaching) *Musikpsychologie,* **3,** 33-69.

Good TL and Brophy JE (1991). *Educational Psychology.* Longman, New York.

Greenberg M (1970). Musical achievement and self-concept. *Journal of Research in Music Education,* **18,** 57-64.

Hallam S (1998). Predictors of achievement and drop out in instrumental tuition. *Psychology of Music,* **26,** 116-132.

Hallam S (2002). Musical Motivation: Towards a Model Synthesising the Research. *Music Education Research,* **4,** 225-244.

Hallam S and Prince V (2000). *Research into Instrumental Music Services, Research Report RR229* Department For Education and Employment, London.

Hamann DL (1982). An assessment of anxiety in instrumental and vocal performances. *Journal of Research in Music Education,* **30,** 77-90.

Harnischmacher C (1995). Spiel oder Arbeit? Eine Pilotstudie zu, instrumentalen Ubeverhalten von Kindern und Jugendlichen. In Gembris H, Kraemer RD and G Maas, eds. *Musikpadagogosche Forschungsberichte 1994*, pp 41-56. Wisner, Augsburg.

Harnischmacher C (1997) The effects of individual differences in motivation, volition, and maturational processes on practice behaviour of young instrumentalists. In Jorgensen H and

Lehman A, eds*Does practice make perfect? Current theory and research on instrumental music practice,* pp 71-88. Norges musikkh gskole, Oslo.

Harter S (1985) Competence as a dimension of self-evaluation: toward a comprehension model of self-worth. In R Leahy, ed. *The development of the self,* pp 55-118. Academic Press, New York.

Hettema J and Kenrick DT (1992). Models of person-situation interactions. In G-V Caprar and GL Van Heck, eds. *Modern Personality Psychology: Critical Reviews and Directions,* pp 393-417. Harvester Wheatsheaf, New York.

Howe MJA, Davidson JW, Moore DM and Sloboda JA (1995). Are there early childhood signs of musical ability? *Psychology of Music,* **23,** 162-76.

Howe MJA and Sloboda JA (1991). Young musicians' accounts of significant influences in their early lives 1. The family and the musical background. *British Journal of music Education,* **8,** 39-52.

Hurley CG (1995). Student motivations for beginning and continuing/discontinuing string music tuition. *The Quarterly Journal of Music Teaching and Learning***, 6,** 44-55.

Jorgensen H (1997). Time for practising? Higher level music students' use of time for instrumental practising. In H Jorgensen and A Lehman, eds. *Does practice make perfect? Current theory and research on instrumental music practice,* pp 123-140. Norges musikkh gskole, Oslo.

Kelly GA (1955). *The psychology of personal constructs.* Norton, New York.

Klinedinst RE (1991). Predicting performance achievement and retention of fifth-grade instrumental students. *Journal of Research in Music Education,* **39,** 225-238.

Lamont A (2002). Musical identities and the school environment. In RAR MacDonald, DJ Hargreaves and D Miell, eds. *Musical Identities,* pp 41-59. Oxford University Press, Oxford.

Mackinnon DW (1965). Personality and the realization of creative talent, *American Psychologist,* **20,** 273-281.

MacNamara A, Holmes P and Collins D (2006). The pathway to excellence: the role of psychological characteristics in negotiating the challenges of musical development. *British Journal of Music Education,* **23,** 285-302.

Manturzewska M (1969). *Psychologiczne Warunki Osiagniec Pianistycznych (Psychological conditions and piano achievement).* Ossolineum, Warsaw.

Manturzewska M (1990). A biographical study of the life-span development of professional musicians, *Psychology of Music,* **18,** 112-139.

Markus H and Ruvolo A (1989). Possible selves: Personalized representations of goals. In LA Pervin, ed. *Goal concepts in personality and social psychology,* pp 211-242. Lawrence Erlbaum Associates, Hillsdale, New Jersey.

McPherson GE and McCormick J (1999). Motivational and self-regulated learning components of musical practice. *Bulletin of the Council for Research in Music Education*, **141,** 98-102.

McPherson GE and McCormick J (2000). The contribution of motivational factors to instrumental performance in a performance examination. *Research Studies in Music Education,* **15,** 31-39.

McPherson GE and McCormick J (2006). Self-efficacy and performing music. *Psychology of Music,* **34,** 322-336.

Mota G (1999). Young children's motivation in the context of classroom music: An exploratory study about the role of music content and teaching style. *Bulletin of the Council for Research in Music Education,* **141,** 119-123.

Motte-Haber H de la (1984). Die Bedeutung der Motivation fur den Instrumentalbericht (The significance of motivation in instrumental reports). *Zeitschrift fur Musikpadagogik*, **51,** 51-4

Nagel JJ (1987). *An examination of commitment to careers in music: Implications for alienation from vocational choice.* Unpublished doctoral dissertation, University of Michigan, Ann Arbor, MI.

O'Neill SA (1997). The role of practice in children's early musical performance achievement during the early years of learning a musical instrument. In H Jorgensen and A Lehmann, eds.

Does practice make perfect? Current theory and research on instrumental music practice, pp.3-70. Norges Musikkhogskole, Oslo.

O'Neill SA (1999). The role of motivation in the practice and achievement of young musicians. In SW Yi, ed. *Music, mind and science,* pp. 420-433. Seoul National University Press, Seoul.

O'Neill SA and McPherson GE (2002). Motivation. In R Parncutt and GE McPherson, eds. *The Science and Psychology of Musical Performance: Creative Strategies for Teaching and Learning,* pp 31-46. Oxford University Press, Oxford.

Persson RS (1993). *The subjectivity of musical performance: An exploratory music-psychological real world enquiry into the determinants and education of musical reality.* Unpublished doctoral dissertation, School of Human and Health Sciences, Huddersfield University, Huddersfield, UK.

Persson RS, Pratt G and Robson C (1996). Motivational and influential components of musical performance: A qualitative analysis. In AJ Cropley and Ddehn, eds. *Fostering the Growth of High Ability: European Perspectives,* pp. 287-301. Ablex, Norwood, NJ.

Pitts SE (2005). *Valuing Musical Participation.* Ashgate, Aldershot.

Pitts SE, Davidson JW and McPherson GE (2000). Models Of Success And Failure In Instrumental Learning: Case Studies Of Young Players In The First 20 Months Of Learning. *Bulletin Of The Council For Research In Music Education,* **146,** 51- 69.

Renwick JM and McPherson GE (2002). Interest and choice: Student-selected repertoire and its effect on practising behaviour. *British Journal of Music Education*, **19,** 173-188.

Rogers CR (1961). *On becoming a person.* Houghton Mifflin, Boston.

Rotter JB (1966). Generalised expectancies for internal versus external control of reinforcement. *Psychological monograph,* 80.

Ryan RM and Deci EL (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well being. *American Psychologist*, **55,** 68-78.

Sandane BA (1998). An investigation of variables related to student motivation in instrumental music. *Dissertation Abstracts International*, 58, 3870A. (UMI No. 9811178)

Schmidt CP (2005). Relations among motivation, performance achievement, and music experience variables in secondary instrumental music students. *Journal of Research in Music Education,* **53,** 134-147.

Sergeant D (1969). Experimental investigation of absolute pitch. *Journal of Research in Music Education,* **17,** 135-43.

Simonton DK (1997). Products, persons, and periods: histrometric analyses of compositional creativity. In DJ Hargreaves and AC North, eds. *The Social Psychology of Music*, pp107-122. Oxford University Press, Oxford.

Sloboda JA, Davidson JW, Howe MJA and Moore DG (1996). The role of practice in the development of performing musicians. *British Journal of Psychology,* ***87*****,** 287-309.

Sloboda JA and Howe MJA (1991). Biographical precursors of musical excellence: an interview study. *Psychology of Music,* **19,** 3-21.

Sosniak LA (1985). Learning to be a concert pianist. In BS Bloom, ed. *Developing talent in young people,* pp 19-67. Ballentine, New York

Szubertowska E (2005). Education and the Music Culture of Polish Adolescence. *Psychology of Music,* **33,** 317-330.

Vispoel WP and Austin JR (1993). Constructive response to failure in music: The role of attribution feedback and classroom goal structure. *British Journal of Educational Psychology,* **63,** 110-129.

Weiner B (1986) *An attributional theory of motivation and emotion.* Springer-Verlag, New York.

Wigfield A, Eccles JS, Yoon KS, Harold RD, Arbreton AJA, Freedman-Doan C and Blumenfield PC (1997). Changes in children's competence beliefs and subjective task values across the elementary school years: A 3-year study. *Journal of Educational Psychology,* **89,** 451-469.

Figure 1

Interactions between individual and environmental factors in determining motivation