

Investigating musical performance: commonality and diversity amongst classical and non-classical musicians¹

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Abstract

The Investigating Musical Performance: Comparative Studies in Advanced Musical Learning research project was devised to investigate how classical, popular, jazz and Scottish traditional musicians deepen and develop their learning about performance in undergraduate, postgraduate and wider music community contexts. The aim of this paper is to explore the findings relating to attitudes towards the importance of musical skills, the relevance of musical activities and the nature of musical expertise. Questionnaire data obtained from the first phase of data collection (n=244) produced evidence of differences and similarities between classical and non-classical musicians. While classical musicians emphasized the drive to excel musically and technically and prioritized notation-based skills and analytical skills, non-classical musicians attached greater importance to memorising and improvising. Regardless of genre, the musicians all considered practical activities such as practising, rehearsing, taking lessons and giving performances to be relevant. However, whilst classical musicians attached greater relevance to giving lessons and solo performances, their non-classical colleagues considered making music for fun and listening to music within their own genre to be more relevant. Some underlying processes that may have accounted for the differences in attitudes are explored, including musical influences, age of initial engagement with music and educational background. Points of similarity and differences are discussed, and possibilities for the two musical trajectories to inform and learn from each other are highlighted.

Keywords: musical performance; genre differences; musical expertise; musical skills

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Introduction

The word “musician” provokes a diverse array of images. Aspiring rock bands, classical concert artists, folk groups in informal settings, jazz bands in clubs and bars and a host of others performing in formal and informal contexts all are identified as “musicians”, sharing an interest in processes that involve creating and combining sounds, interpretation and performance. However, there may be little common ground between musicians of different genres with respect to their views relating to the relevance of specific musical skills and activities or indeed their definitions of what might comprise excellence in musical performance.

The aim of this paper is to explore commonality and diversity found amongst a sample of popular, jazz and Scottish traditional musicians (collectively termed ‘non-classical’ in this paper) and classical musicians with respect to their views relating to musical performance. The rationale for grouping genres other than classical together and comparing these musicians to classical musicians was that we wished to compare the attitudes of musicians who had come through relatively well-established classical music degree programmes with those who were involved in newer, innovative degrees in musical genres other than classical. Furthermore, sample size considerations were such that for the quantitative opening phase of the study (reported here) comparisons could be made between approximately equal participant sizes when the musicians were grouped as either ‘classical or ‘non-classical’. Differences between the non-classical musicians and classical musicians will thus be described and the underlying

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processes that may account for variability between musicians of different genres will be explored.

The research reported here formed part of a larger project, Investigating Musical Performance: Comparative Studies in Advanced Musical Learning (IMP) (Welch et al., 2006, see <<http://www.tlrp.org/proj/Welch.html>>), a two-year comparative study of advanced musical performance. The IMP project was devised to investigate how classical, popular, jazz and Scottish traditional musicians deepen and develop their learning about performance in undergraduate, postgraduate and wider music community contexts. For the purposes of this paper differences between genres were examined in relation to attitudes towards musical skills, musical activities and performance.

Background

A substantial body of empirical evidence suggests that from the earliest months of life the acquisition of musical expertise is influenced by an interactive process between neuropsychobiological potential, enculturation and specific sonic and musical experiences (for comprehensive reviews, see Hallam, 2006, pp. 29-43, Welch, 2006, McPherson, 2006). This process has been shown to involve interaction with a musical environment and to be dependent upon a range of early influences including the family context (Davidson et al., 1996), individual personality differences (Duke, 1999, Hallam, 1998, Kemp, 1996), socio-economic background (Klinedinst, 1991, Wermuth, 1971), availability of instruments and tuition (Goldsmith, 1990) and experiences of significant musical events (Davidson et al., 1997).

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Much of the research noted above has been concerned with musicians from the Western classical tradition. Despite the fact that Higher Education degrees in jazz studies, popular music, world musics and traditional folk music are now available in UK Conservatoires and Universities, relatively little research has investigated the possible commonality or diversity in attitudes towards musical expertise that musicians emerging from these programmes may hold. Furthermore, although researchers have proposed that musical taste may be influenced by social structure and in particular “conformity to reference group norms” (Hargreaves, 1986, p.182), the underlying factors associated with differences or similarities in the attitudes held by musicians from different genres have not been fully explored.

The idea of genre as a social convention governed by ‘semiotic, behavioural, social, ideological and ideological spheres’ is put forth by Fabbri (1982). This view is elucidated by Walser (1993) who contends that genres reproduce particular ideologies. MacDonald et al.(2002, p. 13) make the related salient point that the role of cultural musical practices (genre) in the formulation of musical identities may be substantial, and suggest that this comprises ‘an interesting though undeveloped research area’.

Various researchers, including Bloom (1985), Sosniak (1985), Manturzevska (1990) and Harnishmacher (1995) have proposed the idea that the pathway to becoming a performing musician embraces distinct phases of development, typically characterized initially by spontaneous musical expression and exploration followed by periods of guided instruction, goal oriented commitment, identification and the development of artistic personality (Hallam, 2006). Bronfenbrenner (1979) provides a theoretical

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framework whereby the stages of (musical) development may be conceptualized as being embedded within social contexts. At the heart of Bronfenbrenner's ecosystemic representation of the human developmental process lies the *microsystem*, a setting where people engage in face-to-face interaction, featuring mutual activity, adoption of roles, and interpersonal relations. According to Bronfenbrenner's view, human agents of the microsystem are further influenced by the interrelations between this setting and other settings to which they belong (*mesosystem*), by changes in settings that do not involve the microsystem directly (*exosystem*), and by the culture in which the belief systems and ideology of the lower order systems are embedded (*macrosystem*). Implicit in his model is the possibility that development may be unconstrained by age and fundamentally influenced by social interaction within the social ecological environment (Bronfenbrenner, 1979). This paper will thus explore whether the underlying processes within the ecological environment, as experienced by a sample of musicians representing four musical genres, could plausibly account for differences amongst the musicians in their beliefs and attitudes relating to expert musical performance.

Methods

Two hundred and forty-four ($n = 244$) undergraduate and professional musicians were surveyed, using a specially devised questionnaire, linked electronically to a 624-field database. The participants represented four musical genres within the Western tradition that included jazz ($n = 45$), Scottish traditional ($n = 16$), popular ($n = 66$) and classical music ($n = 117$). In addition to demographic information, the musicians provided self-reports about their earliest engagement with music, their first instrumental or vocal training, their secondary education and significant musical experiences and influences. The participants were questioned about their attitudes

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towards the relevance of a range of musical skills and activities, how they spent their time and the pleasure they derived from engagement in musical activities, as well as their beliefs about the nature of expertise in musical performance and teaching.

Amongst the classical musicians, forty percent were male and sixty percent were female. This trend was reversed amongst the non-classical musicians, where sixty-five percent were male and thirty-five percent were female. The mean age of the classical musicians was twenty-eight; amongst non-classical musicians the mean age was twenty-three. This difference in mean age was accounted for by the fact that fifty-three percent of the classical musicians were professional portfolio musicians while ninety-one percent of the non-classical musicians were undergraduates.

T-tests were calculated, investigating differences between classical and non-classical musicians in respect of scales that respectively measured 1) attitudes towards the importance of musical skills, 2) the relevance of musical activities and 3) the nature of expertise in musical performance. In order to ascertain whether the variables comprising these scales could be subsumed into coherent categories, principal components analysis was carried out. In each case the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicated that the data were suitable for such an analysis (Field, 2000), varimax rotation was selected and factor loadings of .364 (for a sample size greater than two hundred) were suppressed (ibid).

Underlying processes that may have accounted for differences between the groups on the three scales were explored. The two groups were compared on the basis of the age at which they had first engaged with music, the age they began formal training

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and the type of school they had attended. Attitudes towards the relative influence of a range of music-making influences were then compared and, finally, participant' self-reports of the time that they spent engaged with musical activities were examined.

Stepwise multiple regressions and forward stepwise binary logistic regressions were calculated in order to determine whether any of these aforementioned variables accounted for variability in attitudes towards musical skills, activities and expertise amongst the two groups (Field, 2000).

Findings

Commonality and diversity amongst classical and non-classical musicians

Importance of musical skills

Participants were asked to rate the importance of a range of musical skills on a scale from one (not at all important) to seven (extremely important) (Table 1). The two groups were similar in that they both attached great importance to the overall standard of performance. Furthermore, the two groups had similarly high mean scores in relation to the importance of collaborating with other performers, managing stress and persevering. However, while the classical musicians ranked the ability to improvise as the least important musical skill, the non-classical musicians assigned the least importance to the ability to sight-read.

TABLE 1 HERE

A principal components analysis was undertaken on the variables comprising the scale for musical skills, in order to determine whether these variables could be subsumed into categories. Six musical skills components were extracted. These related to 1) performance skills, 2) the drive to excel technically, 3) the drive to excel

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musically, 4) coping skills, 5) musical skills associated music-making without notation and 6) music-making that is dependent on notation (Table 2).

TABLE 2 HERE

Figure 1 demonstrates that the classical musicians were found to have significantly higher mean scores than the non-classical musicians for the importance that they attached to variables associated with the drive to excel musically ($t = 3.02_{(214)}$, $p = .003$) and technically ($t = 2.09_{(221)}$, $p = .04$) and the ability to sight read and to work with other performers ('notation-based music-making') ($t = 3.09_{(221)}$, $p = .002$). In contrast, the non-classical musicians were found to have significantly higher mean scores for the ability to memorize and improvise ('non-notation music-making') ($t = -9.96_{(221)}$, $p < .0001$). The two groups did not differ significantly in terms of their attitudes towards the importance of performance skills ($p > .05$) or the importance of coping skills (dealing with stress, building stamina, persevering) ($p > .05$); both groups of musicians attached high importance to these skills. The lowest mean score for any of the performance skills was 5.6, while the lowest mean score for any of the coping skills was 5.29.

FIGURE 1 HERE

Relevance of musical activities

Participants were given a list of musical activities and asked to rate the relevance of these activities on a scale from one (not at all relevant) to seven (extremely relevant).

Although both classical and non-classical musicians assigned relatively high

relevance to practising alone, classical musicians were found to assign significantly greater relevance to this activity ($t = 3.14_{(214)}$, $p = .002$) than did the non-classical musicians. Amongst the classical musicians, the activity considered to be least

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important was networking, while for non-classical musicians the least important was giving lessons (Table 3).

TABLE 3 HERE

In order to ascertain whether the musical activities grouped into categories of related activities, a principal components analysis was carried out. Four musical activities components were extracted, including 1) extra-curricular activities such as networking, organisation and listening to music, 2) activities related to acquiring practical skills, 3) activities that involved engaging with music for fun and, finally, 4) solo activities involved in professional teaching and performing (Table 4).

TABLE 4 HERE

Figure 2 demonstrates that significant differences ($p < .05$) were found between classical and non-classical musicians in relation to the relevance that they attached to extra-curricular activities ($t = 3.03_{(220)}$, $p = .003$), making music for fun ($t = 6_{(220)}$, $p < .0001$) and solo work ($t = 2.8_{(220)}$, $p = .006$). The non-classical musicians considered 'extra-curricular' activities and making music for fun to be more relevant, while the classical musicians attached greater relevance to activities involved in solo professional work. Classical and non-classical musicians alike assigned similarly high mean scores ranging from 5.5 to 6.6 (see Table 3 above) for the relevance of activities that were associated with acquiring practical skills.

FIGURE 2 HERE

Attitudes towards performance

The musicians were asked to indicate the extent to which they were in agreement with a range of statements concerned with attitudes towards expertise in musical performance. The responses were on a scale ranging from one (disagree) to seven

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(agree). Classical musicians and non-classical musicians both agreed most highly with statements that indicated expert musicians know how to address errors and how to sustain skills. Moreover, classical musicians' responses to statements concerned with transferable skills indicated that they believed expert performers do possess a range of skills that could be transferred to non-musical domains. Furthermore, responses from both groups indicated that most participants considered musical expertise to involve the possession of global musical skills that could be transferred to other musical genres. In contrast to classical musicians, non-classical musicians agreed least with the statement putting forth the view that expert performers are more competent (than non-experts) in reading music notation (Table 5).

TABLE 5 HERE

Again, a principal components analysis revealed underlying categories of attitudes towards expertise in musical performance. Three components relating to attitudes towards the nature of musical expertise were extracted. These were 1) attitudes towards analytical skills, 2) attitudes towards practical musical skills and 3) attitudes towards transferable skills (Table 6).

TABLE 6 HERE

Whilst there were no significant differences found between genres in relation to their attitudes towards practical skills and transferable skills, they did differ significantly in terms of attitudes towards analytical skills ($t = 3.28_{(232)}$, $p = .001$), with classical musicians evidently agreeing more strongly that analytical skills including problem-solving, self-monitoring and the ability to address errors comprise part of an expert performer's toolkit (Figure 3).

FIGURE 3 HERE

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Underlying processes accounting for the differences

Respondents provided information about the age that they had first begun to engage with music, as well as the age that they first began formal musical learning on their first study instrument and the type of school that they had attended. In addition to these variables, respondents' ratings of the impact in their lives of various music-making influences were examined to see if these could be possible predictors of musical genre preference and performers' attitudes towards the importance of musical skills, the relevance of musical activities and the nature of expertise in musical performance. These music-making influences included:

- Private or school-visiting instrumental/vocal teacher
- Well-known performer(s)
- Primary school teacher
- Secondary school teacher
- University/college lecturer
- University/college instrumental/vocal teacher
- Peer group
- Parent
- Sibling
- Performance/musical event attended
- County ensemble
- Informal group with friends
- Professional colleagues

Finally, the time per week that respondents reported their engagement with a range of musical activities (see Table 3, above) was explored to see if this might account for similarities or differences between the genres.

Age that respondents began to engage with music

Non-classical musicians reported that they typically began to engage with music of any kind at a later age than classical musicians (non-classical: \underline{M} = 8.4 years, classical: \underline{M} = 6.6 years). Similarly, non-classical musicians typically began formal learning on their first instrument at a later age (non-classical: \underline{M} = 12 years, classical: \underline{M} = 8.8 years).

Music-making influences

Means and standard deviations for respondents' reports of the impact of music-making influences in their lives are given in Table 7. Classical musicians rated instrumental teachers, parents, musical events and professional colleagues as the most important musical influences, whilst non-classical musicians reported that their most important influences were well-known performers and significant musical events.

TABLE 7 HERE

Significant differences ($p < .05$) were found between the two groups with respect to the influence of private or school-visiting instrumental/vocal teachers ($t = 2.38_{(237)}$, $p = .02$), well-known performers ($t = -4.29_{(225)}$, $p < .0001$), university or college lecturers ($t = -2.40_{(221)}$, $p = .02$), university or college instrumental/vocal teachers ($t = 3.22_{(236)}$, $p = .001$), parents ($t = 1.99_{(241)}$, $p = .048$), county ensembles ($t = 2.45_{(235)}$, $p = .02$), informal groups with friends ($t = -2.86_{(239)}$, $p = .005$). Non-classical musicians claimed to be influenced more highly by well-known performers, university or college lecturers and informal groups with friends, whilst classical musicians reported greater influence from instrumental/vocal teachers, parents and county ensembles.

Type of school attended

Eighty-nine percent of respondents provided information about whether or not they had attended a state-maintained or independent (private) school in the UK. One hundred and eighty-two respondents had attended state-maintained schools, fifteen had attended fee-paying independent schools and twenty-one had attended 'other' schools. Of those who had attended state-maintained schools, 42% were classical musicians and 58% were non-classical musicians. Of those who attended independent schools, 73% were classical musicians and 27% were non-classical musicians ($\chi^2_2 = 6.86$, $p = .032$).

Time per week spent engaged in musical activities

Means and standard deviations for the number of hours per week engaged in musical activities are given in Table 8. Classical musicians spent the most time practising alone, whilst non-classical musicians spent the greatest amount of their 'musical time' listening to music from their own genre.

TABLE 8 HERE

Non-classical musicians reportedly spent significantly ($p < .05$) more hours per week engaged in mental rehearsal ($t = -3.78_{(147)}$, $p < .0001$), playing for fun alone ($t = -5.48_{(164)}$, $p < .0001$), playing for fun with others ($t = -4.94_{(193)}$, $p < .0001$), taking lessons ($t = -5.08_{(164)}$, $p < .0001$), in solo performance ($t = -3.18_{(204)}$, $p = .002$), listening to music from their own genre ($t = -7.95_{(135)}$, $p < .0001$), acquiring general musical knowledge ($t = -3.37_{(152)}$, $p = .001$), having professional conversations ($t = -3.53_{(58)}$, $p = .001$) and networking ($t = -2.37_{(1905)}$, $p = .02$). The only musical activity that was reported by classical musicians as occupying significantly more hours per week than for non-classical musicians was giving lessons ($t = 4.89_{(141)}$, $p < .0001$).

The influence of social factors on genre preference and attitudes towards musical skills, activities and expertise

Predictors of genre preference

In order to investigate possible underlying social factors contributing to musical genre preferences amongst these participant musicians, a forward stepwise binary logistic regression was performed, which calculated those variables that were most strongly associated with the probability of a particular category (classical or non-classical) occurring. Predictors were entered based on the most significant score statistic with a probability of .05 or less and were removed if the probability of the -2 log likelihood test was greater than .10. The reported influence of well-known

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performers was entered first ($\chi^2_1 = 20.36, p < .0001$), the age at which regular and systematic learning on the first study instrument began was entered next ($\chi^2_1 = 17.92, p < .0001$), the influence of university or college instrumental/vocal teachers was entered third ($\chi^2_1 = 12.05, p = .001$) and the final variable to be entered was the influence of a university or college lecturer ($\chi^2_1 = 12.43, p < .0001$). Seventy-five percent of cases were accurately predicted by this model.

Predictors of attitudes towards the importance of musical skills

A stepwise regression was carried out in order to ascertain whether there were environmental influences that could account for variability in the overall scores on the scale for the importance of musical skills (see Table 1 above). The overall scale comprising attitudes amongst classical musicians were found to be influenced positively by university or college instrumental teachers ($B = .318, p < .0001$), well-known performers ($B = .221, p = .01$), professional colleagues ($B = .198, p = .04$), hours spent giving lessons ($B = .282, p = .001$) and practising alone ($B = .206, p = .01$). A negative coefficient was found for the influence of hours spent in group performance ($B = -.314, p < .0001$). The influence of a university or college instrumental/vocal teacher was entered first and explained 14% of the variability in responses ($F_{1,95} = 16.8, p < .0001$). The influence of well-known performers was entered next, explaining a further 10% of variability ($F_{1,94} = 12.13, p = .001$) and the third predictor, hours per week spent in group performance, explained a further 7% of variability ($F_{1,93} = 9.26, p = .003$). The fourth predictor to be entered was hours per week spent giving lessons ($F_{1,92} = 8.62, p = .004$), accounting for a further 6% of variability, while the fifth predictor, accounting for a further 4% of variability, was hours per week spent practising alone ($F_{1,91} = 6.23, p = .014$). The influence of professional colleagues was entered as the final predictor and accounted for another

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3% of variability ($F_{1,90} = 4.55, p = .036$). For classical musicians, the model that thus included the influence of university or college instrumental/vocal teachers, the influence of well-known performers, time spent in group performance, giving lessons and practising alone as well as the influence of professional colleagues accounted together for approximately 41% of variability in their attitudes towards the importance of musical skills (adjusted $R^2 = .405$).

For non-classical musicians, only one variable was included in the model and this was the positive influence of significant performance events ($B = .340, p < .0001$), accounting for approximately 12% (adjusted $R^2 = .107$) of variability in attitudes ($F_{1,111} = 14.47, p < .001$).

Predictors of attitudes towards the relevance of musical activities

A stepwise multiple regression revealed that, for classical musicians, attitudes towards the relevance of musical activities were influenced positively by significant performance events ($B = .306, p = .002$) and the amount of time spent practising alone ($B = .287, p = .003$). For this participant group the impact of significant performance events that respondents had attended accounted for approximately 13% of variability in attitudes towards the relevance of musical activities ($F_{1,94} = 14.92, p < .001$). This variable, together with hours spent practising alone ($F_{1,93} = 9.30, p = .003$) together accounted for approximately 20% of variability on the overall scale for the relevance of musical activities (adjusted $R^2 = .199$).

Amongst non-classical musicians playing for fun alone accounted for 13% of variability ($F_{1,108} = 15.87, p < .001$) and the influence of a university or college lecturer accounted for a further 5% ($F_{1,107} = 5.94, p = .02$). Positive coefficients were

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found for both of these variables (*playing for fun alone*: $B = .373$, $p < .0001$; *influence of lecturer*: $B = .215$, $p = .02$). Together these predictors accounted for approximately 16% of variability on the scale (adjusted $R^2 = .158$)

Predictors of attitudes towards the nature of expertise in musical performance

Stepwise multiple regression revealed that the overall ratings for attitudes amongst classical musicians towards the nature of musical performance expertise was influenced negatively by the amount of time spent in professional conversation ($B = -.488$, $p < .0001$), but positively by hours per week giving lessons ($B = .327$, $p < .0001$), networking ($B = .276$, $p = .02$) and listening to classical music ($B = .214$, $p = .02$) as well as by the influence of professional colleagues ($B = .192$, $p = .05$). Hours per week giving lessons was entered first ($F_{1, 94} = 12.8$, $p = .001$), followed by having professional conversations ($F_{1, 93} = 7.91$, $p = .006$), networking ($F_{1, 92} = 5.71$, $p = .02$), listening to music from one's own genre ($F_{1, 91} = 5.37$, $p = .02$) and the influence of professional colleagues ($F_{1, 90} = 4.13$, $p = .05$). Together these predictors accounted for approximately 27% of variability in beliefs about expert musical performance (adjusted $R^2 = .272$).

For non-classical musicians, positive coefficients were found for the amount of time spent practising alone ($B = .289$, $p = .001$) and giving lessons ($B = .218$, $p = .02$), whilst a negative coefficient was found for playing for fun with others ($B = -.287$, $p = .002$). The variables were entered in the following order: hours spent practising alone ($F_{1, 110} = 9.49$, $p = .003$), playing for fun with others ($F_{1, 109} = 6.19$, $p = .01$) and giving lessons ($F_{1, 108} = 5.63$, $p = .02$). Together these predictors accounted for approximately 17% of variability in the overall scale for attitudes towards the nature of musical performance expertise (adjusted $R^2 = .172$).

Discussion

The evidence suggests significantly different developmental profiles for classical and non-classical musicians. Classical musicians tended to have begun to engage with music at an earlier age and were influenced musically by parents, instrumental or vocal teachers and formal groups. Conversely, non-classical musicians tended to be slightly older in their formative musical encounters and report that they typically were most influenced by well-known performers and informal groups.

There was some evidence of the influence of private versus state-maintained education; of those who had attended independent schools, the majority were classical musicians whilst the reverse was true amongst the musicians who had attended state maintained schools. This finding should be treated with caution however, as the participant size for musicians from independent schools was relatively small.

Differences were also found related to beliefs about the importance of particular musical skills, the relevance of specified musical activities and the nature of expertise in musical performance. Classical musicians attached greater importance to musical skills associated with the drive to excel musically and technically as well as notation-based music-making skills. In contrast, non-classical musicians attached greater importance to non-notation musical skills such as memorizing and improvising.

Regardless of musical genre, the musicians in this sample considered the group of musical activities that were associated with acquiring practical instrumental/vocal skills such as practising, rehearsing, taking lessons and giving performances to be

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very relevant. The groups differed in their attitudes towards the relevance of extra-curricular, non-musical activities such as networking, organising and acquiring general musical knowledge; non-classical musicians attached more relevance to these activities than did the classical musicians. Furthermore, non-classical musicians considered making music for fun and listening to music within their own genre to be more relevant than did the classical musicians. Classical musicians attached greater relevance to more 'serious' musical activities where they took individual responsibility, such as giving lessons and solo performances and engaging in mental rehearsal.

A substantial amount of commonality was found amongst the musicians in this sample with respect to their conceptualization of the nature of expertise in musical performance. There was broad agreement that expert performance involves a great deal of proficiency in terms of musical skills that were grouped together under the heading of 'practical skills', including reading notation, learning new music, memorizing and learning new music quickly. Attitudes towards transferable skills were also similar, with many musicians indicating that they believed expert performers to be in possession of skills that could be transferred to other musical genres and even other domains. However, the two groups differed in their beliefs about the role of analytical skills in relation to expert performance. Classical musicians tended to agree more strongly that skills such as problem-solving, self-monitoring and addressing errors contributed to performance expertise.

Musical influences that accounted for variability in attitudes amongst all of the musicians, regardless of genre, included well-known performers, significant

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performance events, practising alone and teaching. For classical musicians other influences that were found to be predictors of musical attitudes included hours spent in group performance and listening to classical music as well as interaction with professional colleagues. Variability amongst the attitudes of non-classical musicians, on the other hand, was evidently influenced by university or college lecturers, informal groups and time spent alone, playing for fun. Some of these differences may be accounted for by the fact that the majority of non-classical musicians in this sample were university or college students, while the (slight) majority of classical musicians were professional portfolio musicians at a later stage of their musical development. Nevertheless, the evidence does suggest that the classical and non-classical dichotomies may not be so clearly cut. All of the musicians in this sample evidently considered themselves to have been influenced profoundly by social factors and in particular by musical role models and interaction with other musicians.

Conclusions

This study adds to the existing body of knowledge relating to the acquisition of musical expertise by addressing the question of how musical attitudes and beliefs amongst musicians may be shaped by social factors and how these influences may be related to the musical genre preferences. Our examination of 'typical' profiles of classical and non-classical musicians amongst our participants (n = 244) highlights points in their developmental paths when significant social influences may have contributed to the formation of 'classical' or 'non-classical' musical identities. Clarifying important points of similarities and differences creates the basis for the two musical trajectories to inform and learn from each other, particularly if this is supported formally by undergraduate music course design. These exploratory findings

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raise many questions relating to the formation of musical beliefs amongst musicians, not least of which is the question of whether or not it is realistic to place musicians into dichotomous categories. As music conservatoires and university music departments increasingly encompass communities of musicians that are engaged in diverse musical genres, an exciting opportunity exists for these musicians to interact and enhance each other's learning and musical development (Lehmann et al., 2007). These Higher Education contexts may be conceptualized as examples of Bronfenbrenner's microsystems and mesosystems wherein social factors will inevitably influence development. Further research is clearly called for that will investigate the extent to which the distinction between genres may become blurred as a result of social and musical interaction, or alternatively the extent to which musicians resist crossing genre boundaries.

(word count 6143, inclusive of citations, exclusive of abstract and references)

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Investigating musical performance

Table 1: Mean scores and standard deviations for attitudes towards the importance of musical skills, amongst classical and non-classical musicians

Musical skill	Classical musicians		Non-classical musicians	
	Mean	Std. Deviation	Mean	Std. Deviation
Natural ability	5.97	1.02	5.65	1.43
Ability to collaborate/work with other performers	6.33	.87	6.32	.93
Management of everyday stress	5.56	1.23	5.59	1.17
Stamina	5.81	1.23	5.70	1.18
Acute ear/detailed listening	6.16	1.02	6.02	1.02
Ability to memorize	4.54	1.73	5.64	1.36
Ability to sight read	5.80	1.14	4.72	1.66
Ability to improvise	3.65	1.76	5.52	1.35
Quantity of practice	5.31	1.42	5.46	1.42
Technical proficiency	6.16	.98	5.51	1.20
Quality/effectiveness of practice	6.36	.98	5.72	1.30
Quality and control of tone	6.39	.89	5.90	1.14
Ability to engage in effective mental rehearsal	5.60	1.36	5.29	1.32
Musicality, interpretative or expressive skills	6.44	.85	6.04	1.14
Sense of stylistic appropriateness	6.20	1.00	5.91	1.20
Ability to communicate musically with the audience	6.37	.94	6.09	1.08
Ability to learn new musical material and concepts quickly and easily	5.96	1.08	5.80	1.08
Level of perseverance	5.98	1.21	5.96	1.14
Ability to manage stage fright	5.92	1.18	5.76	1.31
Motivation and drive to excel	6.06	1.11	6.17	1.11
Overall standard of playing	6.34	.87	5.98	1.18
Overall standard of performance	6.47	.88	6.17	.99

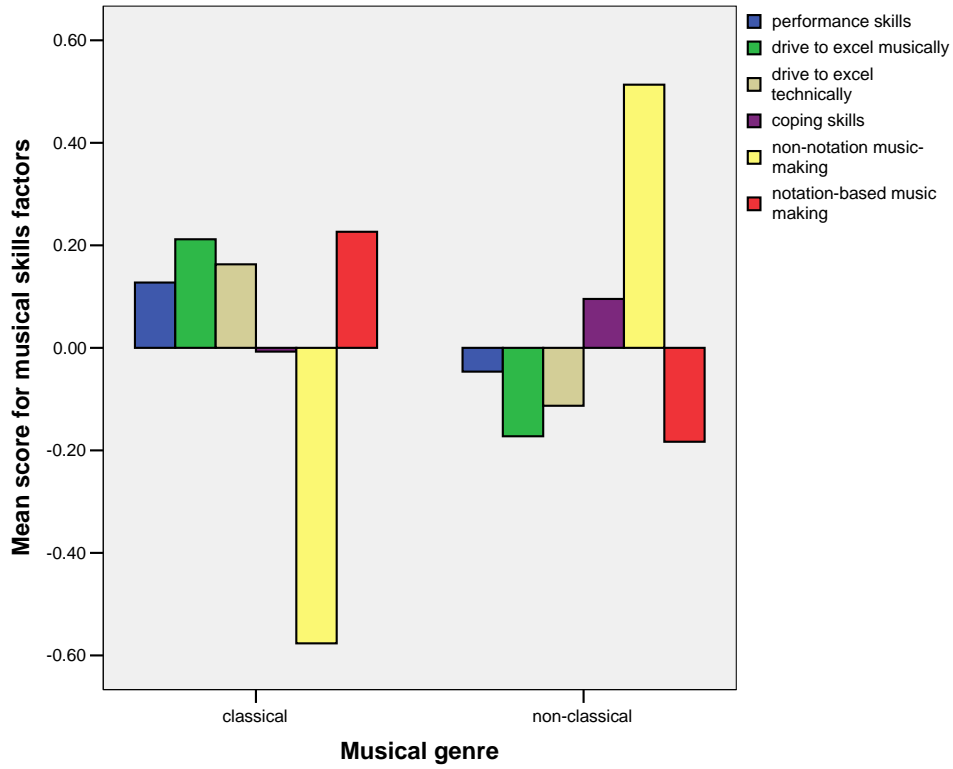
Table 2: Components of attitudes towards the importance of musical skills

Musical skill	Musical Skills Component*					
	Performance skills	Drive to excel musically	Drive to excel technically	Coping skills	Non-notation music-making	Notation-based music-making
Natural ability		.691				
Ability to collaborate/work with other performers				.419		.489
Management of everyday stress				.824		
Stamina				.773		
Acute ear/detailed listening						
Ability to memorize					.793	
Ability to sight read						.792
Ability to improvise					.871	
Quantity of practice			.732			
Technical proficiency		.397	.672			
Quality/effectiveness of practice			.742			
Quality and control of tone		.505				
Ability to engage in effective mental rehearsal	.492					
Musicality, interpretative or expressive skills	.646	.462				
Sense of stylistic appropriateness	.745					
Ability to communicate musically with the audience	.767					
Ability to learn new musical material and concepts quickly and easily	.631					
Level of perseverance	.547			.407		
Ability to manage stage fright				.441		
Motivation and drive to excel		.409	.422			
Overall standard of playing		.714				
Overall standard of performance		.723				

Rotation Method: Varimax with Kaiser Normalization. (KMO measure of sampling adequacy = .883)
 *Factor loadings less than .364, for sample size greater than 200, were suppressed (Field, 2000)

Investigating musical performance

Figure 1: Standardized mean scores for the importance of categories of musical skills



Investigating musical performance

Table 3: Mean scores and standard deviations for musical activities, amongst classical and non-classical musicians

Musical Activities	Classical Musicians		Non-classical musicians	
	Mean	Std. Deviation	Mean	Std. Deviation
Practice alone	6.62	.72	6.23	1.17
Practice with others	5.82	1.25	6.09	1.23
Mental rehearsal	5.18	1.59	4.95	1.60
Playing for fun alone	4.42	1.65	5.41	1.61
Playing for fun with others	4.40	1.65	5.46	1.59
Taking lessons	5.68	1.68	5.89	1.39
Giving lessons	4.52	1.72	4.13	1.82
Solo performance	5.85	1.48	5.57	1.57
Group performance	6.00	1.28	5.94	1.28
Listening to music from your own performance genre	5.72	1.27	6.08	1.14
Listening to music outside of your genre	4.50	1.66	5.57	1.50
Acquiring general musical knowledge	5.24	1.42	5.62	1.30
Professional conversation	4.84	1.56	5.07	1.62
Networking	3.93	2.01	4.62	1.90
Organisation and preparation	5.16	1.63	5.23	1.59

Investigating musical performance

Table 4: Components of musical activities

Musical Activity	Musical Activities Component			
	Extra-curricular	Acquiring practical skills	Music for fun	Solo work
Practice alone		.715		
Practice with others		.714		
Mental rehearsal				.644
Playing for fun alone			.861	
Playing for fun with others			.887	
Taking lessons		.537		
Giving lessons				.669
Solo performance		.434		.536
Group performance		.659		
Listening to music from your own performance genre	.576	.544		
Listening to music outside of your genre	.675			
Acquiring general musical knowledge	.751			
Professional conversation	.657			
Networking	.741			
Organisation and preparation	.780			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. (KMO measure of sampling adequacy = .76)

*Factor loadings less than .364, for sample size greater than 200, were suppressed (Field, 2000)

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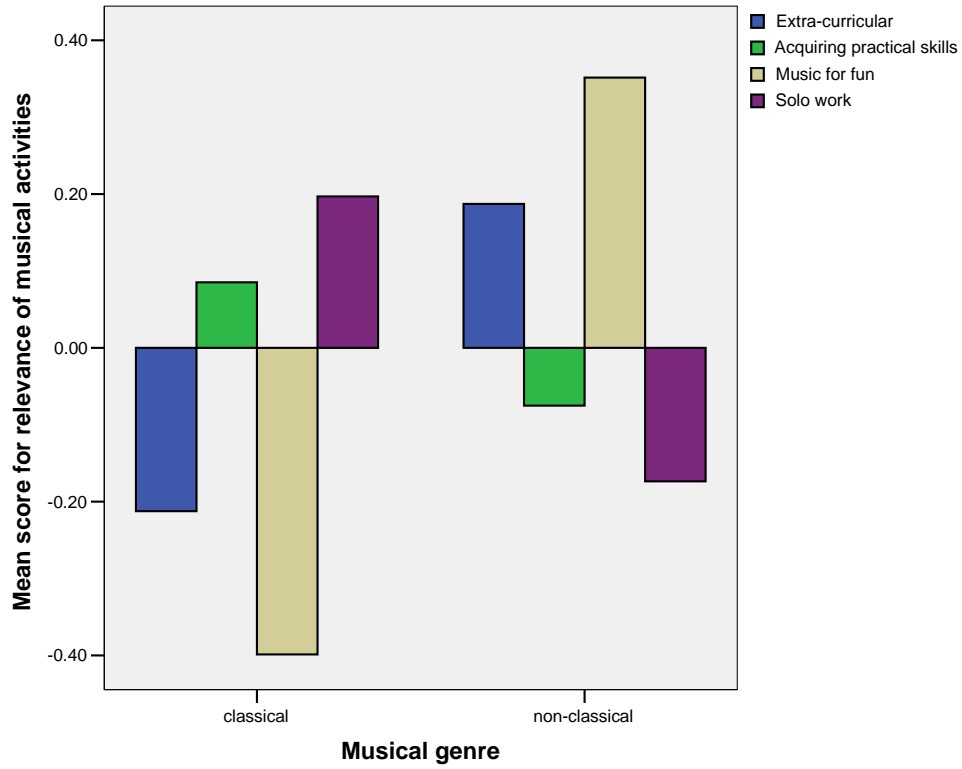
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Investigating musical performance

Figure 2: Classical and non-classical musicians' mean scores for categories of musical activities



Investigating musical performance

Table 5: Mean scores and standard deviations for attitudes towards expertise in musical performance amongst classical and non-classical musicians

Attitudes towards expertise in musical performance	Classical Musicians		Non-classical musicians	
	Mean	Std. Deviation	Mean	Std. Deviation
A highly skilled musician cannot automatically transfer their skills to another area of human behaviour.	3.77	2.17	4.53	1.83
A highly skilled musician cannot automatically transfer their skills to another musical genre.	4.06	2.04	3.91	1.96
Expert performers are much more competent in reading musical notation.	4.23	1.99	3.59	1.77
Expert performers are much quicker at learning new music than those less skilled.	4.92	1.76	4.99	1.56
Expert performers have superior musical memory.	4.23	1.81	4.43	1.62
Expert performers have more refined problem-solving skills.	4.51	1.81	4.23	1.53
Expert performers spend a great deal of time analysing a significant musical problem before attempting a solution.	4.46	1.67	4.28	1.49
A highly skilled musician is better at self-monitoring.	5.41	1.61	4.70	1.35
A highly skilled musician is better at knowing how to address errors.	5.58	1.47	4.97	1.35
A highly skilled musician is better at sustaining skills.	5.46	1.49	5.05	1.39

Investigating musical performance

Table 6: Components of attitudes towards the nature of musical performance expertise

Attitudes towards the nature of musical performance expertise	'Nature of musical performance expertise' Components		
	Analytical skills	Practical musical skills	Transferable skills
A highly skilled musician cannot automatically transfer their skills to another area of human behaviour.			.819
A highly skilled musician cannot automatically transfer their skills to another musical genre.			.843
Expert performers are much more competent in reading musical notation.		.681	
Expert performers are much quicker at learning new music than those less skilled.		.770	
Expert performers have superior musical memory.		.778	
Expert performers have more refined problem-solving skills.	.400	.488	
Expert performers spend a great deal of time analysing a significant musical problem before attempting a solution.	.401	.528	
A highly skilled musician is better at self-monitoring.	.861		
A highly skilled musician is better at knowing how to address errors.	.914		
A highly skilled musician is better at sustaining skills.	.900		

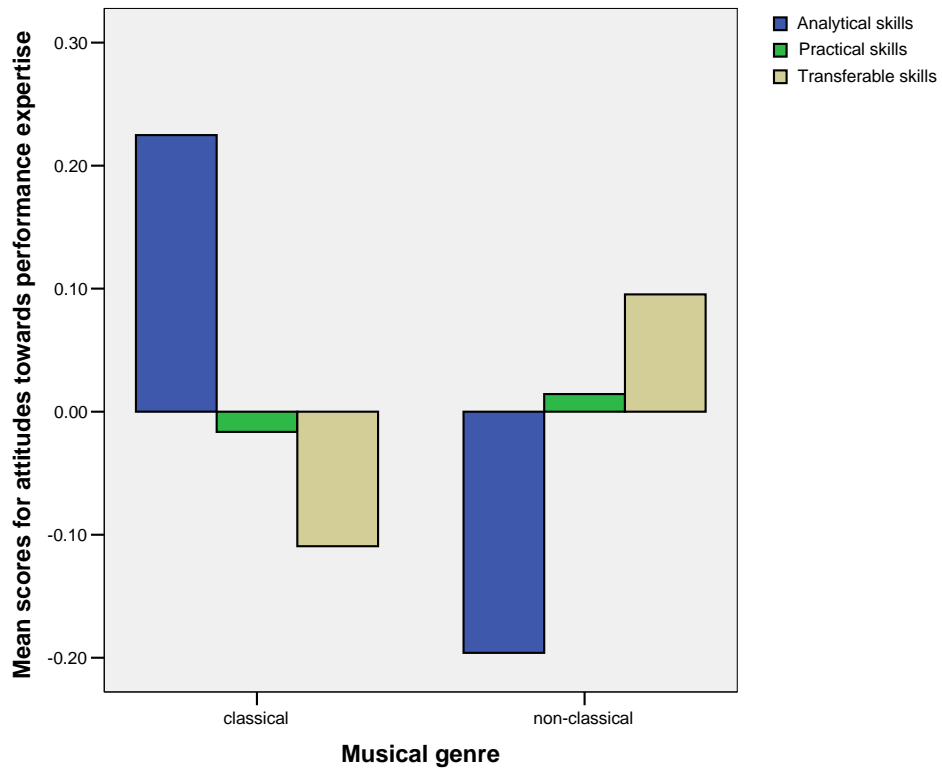
Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. (KMO measure of sampling adequacy = .78)

*Factor loadings less than .364, for sample size greater than 200, were suppressed (Field, 2000)

Investigating musical performance

Figure 3: Classical and non-classical musicians' standardized mean scores for attitudes towards the nature of expertise in musical performance



Investigating musical performance

Table 7: Music making influences for classical and non-classical musicians

Music-making influence	Classical musicians		Non-classical musicians	
	Mean	Std. Deviation	Mean	Std. Deviation
Private or school-visiting instrumental/vocal teacher	5.19	2.20	4.53	2.12
Well-known performer(s)	4.72	1.84	5.67	1.59
Primary school teacher	2.53	1.94	2.56	1.92
Secondary school teacher	3.93	2.16	3.77	2.09
University/college lecturer	4.34	2.07	4.95	1.83
University/college instrumental/vocal teacher	5.69	1.73	4.92	1.95
Peer group	4.07	1.87	4.30	1.95
Parent	4.87	1.82	4.39	1.92
Sibling	2.64	2.02	2.67	1.85
Performance/musical event attended	5.09	1.76	5.30	1.73
County ensemble	3.96	2.36	3.24	2.12
Informal group with friends	3.72	2.05	4.47	2.04
Professional colleagues	4.75	2.11	4.52	2.11

Investigating musical performance

Table 8: Hours per week spent engaged in musical activities

Hours spent engaged in musical activities	Classical musicians		Non-classical musicians	
	Mean	Std. Deviation	Mean	Std. Deviation
Practice alone	8.57	7.63	8.84	6.43
Practice with others	7.53	9.25	6.72	5.81
Mental rehearsal	2.64	4.35	8.27	16.20
Playing for fun alone	1.97	2.91	6.08	7.92
Playing for fun with others	1.35	2.50	3.79	4.92
Taking lessons	.58	1.04	1.94	2.82
Giving lessons	6.08	9.61	1.48	3.41
Solo performance	.39	.79	.84	1.39
Group performance	2.18	3.18	2.07	2.19
Listening to music from your own performance genre	2.78	2.51	13.38	14.84
Listening to music outside of your genre	6.98	12.30	7.72	7.47
Acquiring general musical knowledge	3.16	3.93	7.20	12.95
Professional conversation	3.51	4.92	8.33	14.56
Networking	1.85	4.20	3.86	8.48
Organisation and preparation	3.28	3.25	3.98	4.49