



Creativity and personality in classical, jazz and folk musicians



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ABSTRACT

The music genre of jazz is commonly associated with creativity. However, this association has hardly been formally tested. Therefore, this study aimed at examining whether jazz musicians actually differ in creativity and personality from musicians of other music genres. We compared students of classical music, jazz music, and folk music with respect to their musical activities, psychometric creativity and different aspects of personality. In line with expectations, jazz musicians are more frequently engaged in extracurricular musical activities, and also complete a higher number of creative musical achievements. Additionally, jazz musicians show higher ideational creativity as measured by divergent thinking tasks, and tend to be more open to new experiences than classical musicians. This study provides first empirical evidence that jazz musicians show particularly high creativity with respect to domain-specific musical accomplishments but also in terms of domain-general indicators of divergent thinking ability that may be relevant for musical improvisation. The findings are further discussed with respect to differences in formal and informal learning approaches between music genres.

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1. Introduction

Within the field of music, jazz is commonly considered as a particularly creative discipline (e.g., Barrett, 1998). This appraisal is related to the fact that jazz music involves a high degree of improvisational playing. Jazz improvisation can range from the simple embellishment of the melody of the theme to e.g. the continuous extemporization of entirely new melodies that fit to the sequence of chords (Johnson-Laird, 2002; Pressing, 1988). Jazz musicians who are highly skilled in improvising hence may possess traits that are different from those of musicians in other disciplines such as classical music. So far, only little is known about the individual differences between musicians devoted to different music genres. Therefore, this study compared jazz musicians with musicians of classical and folk music with respect to their musical activities, creativity and personality.

Only few studies have investigated specific differences in attitudes, and learning approaches of musicians specialized in different music genres (e.g., Bézenak & Swindells, 2009; Creech et al., 2008; Papageorgi, Creech, & Welch, 2013; Welch et al., 2008). Classical musicians are reported to acquire musical skills mainly in formal educational settings involving one-to-one

instruction and by practicing alone, whereas non-classical musicians devote more time to extra-curricular activities such as playing music for fun with others or having professional conversations (Bézenak & Swindells, 2009; Welch et al., 2008). Additionally, classical musicians attach greater importance on technical proficiency involving sight-reading, notation, and quality of tone, whilst non-classical musicians appear to attach greater importance to skills such as memorization or improvisation (Bézenak & Swindells, 2009; Creech et al., 2008). Bézenak and Swindells (2009) found that jazz musicians show higher intrinsic motivation and experience more pleasure in musical activities than classical musicians. In contrast, classical musicians report higher levels of performance anxiety than other non-classical musicians (Papageorgi et al., 2013). These findings already suggest important differences in the general approach towards learning and playing music between different genres such as jazz and classical music.

Research also addressed the question what factors lead to expert performance in music and more specifically in improvisational skills. It is now widely accepted that the cumulative amount of deliberate practice but also the quality of practice is highly predictive of mastery in the domain of music (Ericsson, Krampe, & Tesch-Römer, 1993; Williamon & Valentine, 2000). Additionally, there is evidence that individual differences in domain-general cognitive abilities also contribute to expert performance (Hambrick et al., in press). Beaty, Smeekens, Silvia, and Kane (in press) report a study where ten jazz students were video-taped during improvisation performances on

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a piece unknown to them, which then was rated for creativity by three professors of jazz studies. They found that creativity of improvisation was independently predicted by practice hours and divergent thinking ability (i.e., a common indicator of creative potential) of the jazz students. The findings suggests that divergent thinking, commonly defined as the ability to fluently generate original and appropriate ideas, may represent a relevant ability supporting improvisational creativity. This notion is in line with formal models of jazz improvisation stating that improvisation requires the continuous generation and evaluation of musical ideas (Pressing, 1988). Similarly, divergent thinking is considered as a central factor underlying creative thinking in music according to Webster's model (2002), together with certain differences in personality and motivation. As a consequence, jazz musicians who are highly skilled in improvisation may differ in their creativity and personality from musicians of other genres. The aim of this study is to formally test this hypothesis by comparing Jazz musicians with musicians specialized in classical and folk music.

2. Materials and methods

2.1. Participants

A total of 120 students enrolled in the study of instrumental pedagogy at the University of Music and Arts in Graz participated in this study. They majored in various different musical instruments (e.g., piano, violin, voice), but were enrolled in one of three tracks related to a specific genre of music: classical music, jazz music, or folk music. The study curriculum is largely the same for all three genres, but classical and folk musicians have more courses on analyzing theoretical aspects of music as compared to Jazz musicians, who attend more courses focused on improvisational skills, ensemble playing and developing practical musical skills. The curriculum of folk musicians specifically requires the playing of at least two folk instruments and offers supplementary classes on folk dance or yodeling. We excluded seven participants who were enrolled in more than one music program and hence could not be attributed unambiguously to one music genre. Moreover, we included only students who indicated to have good to excellent language skills, leading to the exclusion of another 14 participants. The remaining sample consisted of 99 students, including 52 students of classical music, 25 students of jazz music, 21 students of folk music. On average, students had an age of 24.8 years ($SD = 5.6$), and have been studying music for 2.6 years ($SD = 1.8$). The sex distribution was fairly balanced with 47% females. The music groups did not differ in their age ($F[2,95] = 2.25, p = .11$), nor sex ratio ($\chi^2[2] = .08, p = .96$), but jazz students on average reported a longer duration of study ($F[2,84] = 9.69, p = .001$, partial- $\eta^2 = .19$; classical music: 2.1 years; jazz music: 3.9 years; folk music: 2.4 years). For analyses involving speeded creativity tests we only included participants with German as mother tongue, resulting in 70 students (30 classical music, 22 jazz music, 18 folk music).

2.2. Psychometric tests and questionnaires

2.2.1. Study and practice activities

We assessed relevant socio-demographic information including age, sex, nationality, selected study programs, and students gave a self-assessment of language skills ("excellent", "good", "fair", or "bad"). They were asked how many hours they typically practiced their instruments at every single day of the week. This data was used to compute a reliable estimate of the practice hours per week. Finally, participants indicated how many concerts they play per semester, and how many competitions they had participated,

how often they had won competitions, and how many productions they had published so far.

2.2.2. Creativity assessment

Creative cognitive potential in the verbal domain was assessed with four divergent thinking tasks taken from a well-known German creativity test (Verbaler-Kreativitätstest; VKT; Schoppe, 1975). The tasks included two *alternate uses* tasks asking participants to generate different creative uses for a "tin can" and a "simple string", and two *instances* tasks which asked to generate many things that could be used "for faster locomotion" or that are "bendable". In all tasks, participants were instructed to find as many and as creative ideas as possible within the given time (120s, or 90s for the alternate uses and the instances task, respectively). The performance in the divergent thinking tasks was scored for ideational fluency (i.e., number of ideas), and ideational creativity. For the scoring of ideational creativity we created lists of pooled, alphabetically sorted, non-redundant responses for each task. Four experienced raters rated each idea for creativity on a four-point scale ("0, uncreative", "1, somewhat creative", "2, fairly creative", and "3, very creative"). We then computed a top-3 creativity score by averaging the creativity ratings of the three top-most creative ideas within each task (Benedek, Mühlmann, Jauk, & Neubauer, 2013). This scoring method was found to yield valid scores that show to discriminant validity with regard to fluency measures (Benedek, Franz, Heene, & Neubauer, 2012; Benedek et al., 2013; Silvia et al., 2008). We averaged scores of the two alternate uses tasks and the two instances tasks to obtain one fluency score and one creativity score per task type. Additionally, creative potential in the figural domain was assessed with a picture completion task taken from the imagination subscales of the Berliner-Intelligenz-Test (Jäger, Süß, & Beauducel, 1997). Participants were shown a series of abstract lines which had to be completed in an original way to form meaningful objects. This task was scored for ideational fluency following the instructions of the test manual.

Besides creative potential, we also assessed real-life creative activities and achievements of the students using the inventory of creative activities and achievements (ICAA; described in Jauk, Benedek, & Neubauer, 2014). This inventory assesses creative activities and achievements in eight domains, including literature, music, arts and crafts, creative cooking, sports, visual arts, performing arts, and science and engineering. In the activities scale, participants report on a 5-point scale how often they carried out certain activities within the last 10 years. In the achievements scale, participants marked achievements they had already attained in each domain ranging from "I have never been engaged in this domain" (0 points) to "I have already sold some of my original work in this domain" (10 points), and values of all achievements are summed. Activities and achievements scores can be analyzed separately for each domain or as a composite score, after summing across domains.

2.2.3. Personality assessment

Personality was assessed with respect to the Big Five using the NEO-FFI (Borkenau & Ostendorf, 1993). We assessed schizotypy using the German 17-item version of the Schizotypal Personality Questionnaire (SPQ; Klein, Andresen, & Jahn, 1997). Participants also completed the Error Orientation Questionnaire (EOQ; Rybowski, Garst, Frese, & Batinić, 1999). This questionnaire contains 37 items asking about individual attitudes towards errors at work. In this study work was defined as practicing and performing activities as a musician. The EOQ consists of eight scales, including error competence, learning from errors, error risk taking, error strain, error anticipation, covering up errors, error communication and thinking about errors. Further questionnaires include the German version of the Frost Multidimensional Perfectionism Scale (FMPS;

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