Are musicians particularly sensitive to beauty and goodness?

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Are Musicians Particularly Sensitive to Beauty and Goodness?
Abstract

The main purpose of this research was to further validate the characteristic *responsiveness to the good and beautiful* by investigating its links with different degrees of involvement in musical practice, and with three art-relevant personality constructs.

Participants (125 professional musicians working in various fields, 125 amateur musicians, and 125 non-musicians) filled in the *Values in Action Inventory of Strengths (VIA-IS; Peterson, Park, & Seligman, 2005)*, the *Engagement with Beauty Scale (EBS; Diessner, Solom, Frost, Parsons, & Davidson, 2008)*, the *Appreciation of Beauty and Excellence Test (ABET; Güsewell & Ruch, 2012a)*, *the Sensation Seeking Scale Form V (SSS-V; Zuckerman, 1994)*, the *Tellegen Absorption Scale (TAS; Tellegen & Atkinson, 1974)*, and the *Dispositional Positive Emotion Scale (DPES; Shiota, Keltner, & John, 2006)*. Overall, *responsiveness* proved to be related to the degree of involvement in musical practice. However, professional musicians displayed distinct profiles depending on their main occupational activity: whereas music teachers and orchestra musicians showed a specific sensitivity to artistic beauty, soloists evidenced an overall high sensitivity to all types of beauty and goodness. Furthermore, results showed that the *responsiveness* dimensions correlated in a theoretically meaningful manner with dispositional awe, absorption, and experience seeking.

*Keywords*: appreciation of beauty and excellence, engagement with beauty, responsiveness to the good and beautiful, personality of musicians
Are Musicians Particularly Sensitive to Beauty and Goodness?

During the last decade, two models of the sensitivity to beauty and goodness were proposed within the context of positive psychology: the *appreciation of beauty and excellence* model (Haidt & Keltner, 2004), and the *engagement with beauty* model (Diessner, Solom, Frost, Parsons, & Davidson, 2008). Both models assume the sensitivity to beauty in the physical world to be linked with the sensitivity to goodness or excellence in the social world, and hypothesize a second-order factor of general sensitivity to beauty and goodness. To examine whether one or both of these models could be empirically confirmed, Güsewell and Ruch (2012a) conducted a structural equation modeling analysis in which they not only included the two already existing self-report instruments, namely the *Appreciation of Beauty and Excellence* (ABE) scale of the VIA-IS (Peterson, Park, & Seligman, 2005), and the *Engagement with Beauty Scale* (EBS; Diessner et al., 2008), but also a newly-developed, stimulus-based instrument, the *Appreciation of Beauty and Excellence Test* (ABET; Güsewell & Ruch, 2012a). The resulting model, which integrated the two existing ones, was labeled *responsiveness to the good and beautiful*. It was comprised of a second-order factor of general sensitivity to beauty and goodness, and three distinct, but related dimensions: responsiveness to nature and surroundings, responsiveness to artistic beauty, and responsiveness to non-aesthetic goodness.

**Aesthetics-relevant correlates of the sensitivity to beauty and goodness**

Up to now, few correlates of the sensitivity to beauty and goodness have been studied. As an initial step, Güsewell and Ruch (2012b) investigated the link between *appreciation of beauty and excellence*, and the disposition to experience seven distinct positive emotions. They found *appreciation* to be mainly correlated with dispositional awe, and to a somewhat lesser extent with dispositional joy, and contentment, a result that is in line with Haidt and
Keltner’s (2004) idea that appreciation is the tendency to “frequently experience awe and related emotions” (p. 537).

Addressing other characteristics known to be relevant for aesthetic responses and preferences, in order to more extensively map the sensitivity to beauty and goodness onto previously developed measures within a nomological net, is an important next step. Two personality characteristics might be of particular interest within the scope of such research: absorption and sensation seeking. Absorption is described as the disposition for “having episodes of ‘total’ attention” (Tellegen & Atkinson, 1974, p. 268) with “peak-experience-like quality” (Tellegen, 1992, p. 1). Previous studies showed that there is a positive correlation between absorption and the ability to enjoy music (Rhodes, David, & Comb, 1988), and between absorption and visual art preferences (Combs, Black, O'Donnell, & Pope, 1988). Absorption would thus be expected to correlate with the sensitivity to artistic beauty, and possibly with the sensitivity to nature, or to non-aesthetic goodness. A number of studies have found associations between sensation seeking and preferences in different aesthetic variables (Rawlings, Barrantes i Vidal, & Furnham, 2000; Zuckerman, 1994). Of its four components, thrill and adventure seeking (TAS) proved to be the least relevant and experience seeking (ES) the most relevant for art preferences; thus, for experience seeking, the highest numerical correlation with measures of the sensitivity to beauty and goodness would be expected.

**Link between artistic activities and the sensitivity to beauty and goodness**

In line with the idea that character strengths should lead to observable behavior in specific contexts, persons highly sensitive to beauty and goodness would be expected to engage in activities related to physical beauty or to non-aesthetic goodness. Empirical data support this idea within the art context. Riddle and Michel-Riddle (2007) studied male art therapists and art therapy students and established that their highest ranked character
strengths were curiosity and appreciation of beauty and excellence. Diessner et al. (2008) found that art and music students scored significantly higher on engagement with artistic beauty than education and psychology majors. Güsewell and Ruch (2012a) showed that being in an artistic profession (e.g., musician, painter, or architect) correlated positively and significantly with appreciation of beauty and excellence and engagement with artistic beauty. However, none of these studies considered different degrees of involvement with the arts. Therefore, one open question is whether persons engaged in an artistic profession display higher scores on different measures of the sensitivity to beauty and goodness than persons engaged in corresponding artistic leisure activities, and if the latter individuals, in turn, score higher than persons who do not engage in such activities at all. A second open question is whether persons in an artistic profession display an overall high sensitivity to different types of beauty and goodness (i.e., natural or artistic beauty and non-aesthetic goodness), or whether they show a specific sensitivity to artistic beauty.

Musical practice lends itself as an ideal field to examine these two questions as it is not reserved for professionals, but rather is widespread among the large population, thus easily allowing for comparisons between professionals, amateurs, and non-musicians.

Previous studies on the personalities of music students and professional musicians suggested that a specific “musical temperament” might exist (Kemp, 1982). However, they also pointed at the fact that musicians were far from being a homogeneous population: their personality characteristics varied according to the main instrument played (Cribb & Gregory, 1999; Kemp, 1982), the favored musical style (Gillespie & Myors, 2000; Wills, 1984), or the working context and main occupational activity (Langendörfer, 2008).

Aims of the study

The main purpose of the present study is to further validate the characteristic sensitivity to beauty and goodness by establishing its external validity (i.e., verifying whether
it correlates in a theoretically meaningful manner with well-studied characteristics relevant for aesthetic responses and preferences) and substantive validity (i.e., examining if and how the characteristic is linked to relevant behaviors or life outcomes). Within this general framework, four additional specific objectives were set.

Güsewell and Ruch (2012a) recently proposed a tentative model of the sensitivity to beauty and goodness that incorporated the two existing ones (i.e., appreciation of beauty and excellence and engagement with beauty) and was labeled responsiveness to the good and beautiful. The first objective of this study is to test whether this new model could be reproduced and thus confirmed in a new sample (i.e., generalizability).

The second objective concerns the link between the sensitivity to different types of beauty and goodness (i.e., artistic, natural, and non-aesthetic) and different aesthetics-relevant constructs: the disposition to experience positive emotions, in particular, awe, sensation seeking, and absorption.

Persons highly sensitive to beauty and goodness would be expected to engage in activities relating to, or relying on, this specific characteristic. Empirical data give support to the idea that musicians display a pronounced sensitivity to beauty and goodness, but call for further investigations. Consequently, the third objective is to examine whether persons involved in varying degrees of musical practice (i.e., professional musicians, amateur musicians, and non-musicians) show significant differences with respect to responsiveness, absorption, sensation seeking, and the disposition to experience awe.

Previous studies on the personalities of professional musicians suggested that a specific “musical temperament” might exist (Kemp 1982). However, the personality characteristics of subgroups of professional musicians seem to differ depending on their working context and main occupational activity (Langendörfer, 2008). Therefore, the fourth objective of this study is to examine whether three subgroups of professional musicians (i.e., music teachers,
orchestra musicians, and soloists) differ with regard to responsiveness and the three aesthetics-relevant constructs.

**Methods**

**Participants**

In total, 375 participants allotted to three subsamples took part in this research. Subsample 1 consisted of 125 German-speaking professional musicians (88 women, 37 men) aged 18 to 65 years \((M = 38.95; SD = 10.96)\), out of whom 88% reported to be working, and 12% to be presently unemployed, studying, or retired. As this sample was assumed to differ from a random sample with respect to age, sex, and employment, Subsamples 2 (amateur musicians) and 3 (persons without musical practice) were randomly selected from an initial pool of \(N = 652\) amateur musicians and non-musicians to match Subsample 1 as closely as possible with respect to these characteristics.

*Professional musicians.* Most of the musicians (83%) had a University degree. Asked about their main instrument, 22% indicated string instruments, 36% woodwinds, 5% brass, 24% piano or organ, 16% voice, and 7% other instruments. With respect to music style, 63% primarily played classical music, 23% primarily jazz, and 14% were active in other areas or styles of music. Teaching was the principal source of income (46%), followed by playing in an orchestra (16%) and playing concerts as a soloist (12%); the remaining 26% either combined two or three of these activities or were otherwise engaged (e.g., composing, arranging, managing concert tours).

*Amateur musicians.* This sample consisted of persons musically active in their leisure time, playing an instrument, or singing. With respect to the highest (professional, not musical) achieved qualification, 3% indicated compulsory education, 30% professional

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1 In Switzerland, Germany, and Austria, music is studied at University, College, or Conservatory at a tertiary level.
apprenticeship or vocational training\(^2\), 15% a high-school diploma\(^3\), and 52% a University degree (i.e., Master’s and PhD). Asked about their marital status, 50% reported being married or living with a partner and 50% living alone (single, divorced, or widowed).

Individuals without musical practice. This sample was composed of persons who neither played an instrument, nor sang. With respect to education, 5% achieved compulsory education, 34% an apprenticeship, 13% a baccalaureate, and 48% a University degree. Finally, 52% indicated being married or living with a partner and 48% living alone.

Instruments

The Values in Action Inventory of Strengths (VIA-IS; Peterson et al., 2005) consists of 240 items on 5-point rating scales (from *very much like me* to *very much unlike me*) for the self-assessment of the 24 character strengths (10 items per strength). Participants completed the questionnaire in its entirety, but only the appreciation of beauty and excellence (ABE) subscale was considered (a sample item is: “I experience deep emotions when I see beautiful things”). Ruch et al. (2010) reported an internal consistency of .73 for the ABE subscale (.67 in our sample).

The Engagement with Beauty Scale (EBS; Diessner et al., 2008) consists of 14 items on 7–point scales (ranging from 1 = *very much unlike me* to 7 = *very much like me*) for the self-assessment of Engagement with Natural Beauty (4 items), Engagement with Artistic Beauty (4 items), and Engagement with Moral Beauty (6 items). A sample item is: “When perceiving beauty in nature I feel changes in my body, such as a lump in my throat, an expansion in my chest, faster heartbeat, or other bodily responses” (Natural Beauty). Dachs and Diessner (2009) reported reliabilities ranging from .85 (Natural and Artistic Beauty) to

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\(^2\) In Switzerland and Germany, usually after completion of compulsory schooling  
\(^3\) Matura in Switzerland, Abitur in Germany and Austria
.90 (Moral Beauty) for their German version of the EBS. In the present sample, reliabilities went from .72 (Natural Beauty) to .80 (Moral Beauty).

The Appreciation of Beauty and Excellence Test (ABET; Güsewell & Ruch, 2012a) is a 30-item stimulus-based online test designed to assess the sensitivity to physical beauty (i.e., music, paintings, and poems), skills or talent, and virtue or moral goodness. The ABET is comprised of three subscales: ABET Art, ABET Talent, and ABET Moral. The extent to which each of the items (i.e., pictures, musical excerpts, texts, and video clips) elicits the experience of beauty or excellence is rated on a 5-point Likert scale (ranging from 1 = not at all to 5 = absolutely). Güsewell and Ruch (2012a) reported alphas ranging from .69 (ABET Talent) to .88 (ABET Moral). In this sample, reliabilities ranged from .63 (ABET Talent) to .86 (ABET Moral).

The Sensation Seeking Scale Form V (SSS-V; Zuckerman, 1994) is a 40-item self-administered questionnaire comprised of four subscales with 10 items each: thrill and adventure seeking (TAS), disinhibition (DIS), experience seeking (ES), and boredom susceptibility (BS). Each item consists of two statements such as (A) “I like ‘wild’ uninhibited parties” and (B) “I prefer quiet parties with good conversation”; respondents choose the statement that best suits their preference. Beauducel, Brocke, Strobel, and Strobel (1999) reported alphas ranging from .46 (BS) to .80 (TAS) for their German adaptation of the SSS-V. In our sample, alphas were from .40 (BS) to .76 (TAS).

The Tellegen Absorption Scale (TAS; Tellegen & Atkinson, 1974) in a German version by Angleitner, Langert, Schilling, and Spinath (1993) assesses whether someone is emotionally responsive to engaging sights and sounds. It consists of 34 true/false self-report items. A sample item is: “When I listen to music, I can get so caught up in it that I don’t notice anything else.” Johnson, Spinath, Krueger, Angleitner, and Riemann (2008) reported an internal consistency of .89; in our sample, the alpha was .80.
The Dispositional Positive Emotion Scale (DPES; Shiota, Keltner, & John, 2006) is an instrument for the self-assessment of the disposition to experience joy, contentment, pride, love, compassion, amusement, and awe. It consists of 38 items (5 or 6 items per scale), and uses a 7-point rating format (from 1 = strongly disagree to 7 = strongly agree). A sample item is: “I often feel bursts of joy” (joy). Güsewell and Ruch (2012b) reported internal consistencies ranging from .58 (DPES awe) to .89 (DPES contentment) for the German DPES. In the current study, alphas ranged from .62 (DPES awe) to .88 (DPES contentment).

**Procedure**

**Data collection.** Volunteers were recruited via flyers, e-mails, Internet sites of popular psychological journals, and short articles about positive psychology published in Swiss magazines. Respondents were informed about the nature of the study and the fact that they could discontinue participation at any time. Furthermore, they were told participation would be unpaid, but that they would receive standardized feedback about their character strengths profile (VIA-IS) and be included in a raffle upon completion of the questionnaire. After reading this information, participants had to click on an “informed consent” box before they could proceed.

**Data analysis.** To verify whether Güsewell and Ruch’s (2012a) responsiveness to the good and beautiful model would fit the data, a structural equation modeling analysis was computed using SPSS Amos (Version 18; Arbuckle, 2007). Three measurement instruments entered this analysis: the appreciation of beauty and excellence (ABE) subscale of the VIA-IS (Peterson et al., 2005), the EBS (Diessner et al., 2008), and the ABET (Güsewell & Ruch, 2012a). The model to be tested was comprised of a second-order factor of general responsiveness and three distinct, but related dimensions: sensitivity for beauty in nature and surroundings, sensitivity for artistic beauty, and sensitivity for non-aesthetic goodness. Additionally, the model included a method factor representing the systematic variance.
introduced by the fact that the ABET is a stimulus based test, whereas the two other measurement instruments are self-report questionnaires. Finally, it was assumed that the residuals of the three EBS subscales might co-vary due to the specific emotional and bodily component of this questionnaire. Therefore, the corresponding error terms were allowed to correlate.

The fit of the model was tested using the p-value of the chi-square ($\chi^2$; Hair, Anderson, Tatham, & Black, 2006), the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), and the root-mean-square error of approximation (RMSEA; Hu & Bentler, 1998). A GFI and an AGFI equal or higher than .90 indicate a good-fitting model; a GFI and an AGFI equal or higher than .95 an excellent-fitting model. For the RMSEA, values equal or lower than .08 can be interpreted as an acceptable fit.

To check for differences between the samples with respect to responsiveness, the disposition to experience different positive emotions, absorption, and sensation seeking, analyses of covariance (ANCOVAs) and standard contrasts were performed. In cases of violation of the sphericity assumption, multivariate test statistics were used. Partial $\eta^2$ was computed as an effect size index, with scores between .01 and .05, between .06 and .13, and higher than .14 indicating small, medium, and large effects respectively (Cohen, 1988).

**Results**

**Primary analyses**

Skewness and kurtosis of all scales indicated normal distribution. Correlations with demographics were generally modest in size ($\leq .24$), yet significant in some cases due to the number of participants. Being female was associated with higher scores on engagement with natural (.15) and moral beauty (.15), as well as dispositional joy (.23), compassion (.21), contentment (.13), and awe (.11). Being male, in turn, was associated with higher scores on all sensation seeking scales (BS = .11; TAS = .18; DIS = .24), except experience seeking (ES
Age was positively related to dispositional contentment (.16), dispositional pride (.15), engagement with natural (.16) and artistic beauty (.12), as well as appreciation of art (.15). Age was negatively related to all sensation seeking scales (ES = .14; DIS = .18; TAS = .20) except boredom susceptibility (BS = .09), and to dispositional amusement (.20). Therefore, all subsequent analyses controlled for the potential impact of these demographics.

**Structure of the sensitivity to beauty and goodness**

To verify whether the *responsiveness to the good and beautiful* model could be reproduced in this sample, the structural equation modeling analysis described in the methods section was carried out. The resulting model is shown in Figure 1.

In this study, the model had a fit of $\chi^2$ (19, N = 375) = 65.5, $p < .001$; GFI = .964, AGFI = .914, RMSEA = .080, which according to the criteria set forth in the methods section was considered satisfactory. Consequently, scores could be imputed for the four latent variables that the model includes (i.e., responsiveness, nature, artistic beauty, and non-aesthetic goodness). Skewness and kurtosis of these variables indicated normal distribution. Women scored significantly higher than men for responsiveness (.16), non-aesthetic goodness (.19), and nature (.15), whereas older age correlated positively with responsiveness (.12), artistic beauty (.12), and nature (.12).

**Link between the sensitivity to beauty and goodness and aesthetics-relevant constructs**

As a next step, the links between *responsiveness* and the disposition to experience different positive emotions, absorption, and sensation seeking were examined (see Table 1).
Overall, the correlations between the *responsiveness* dimensions and the disposition to experience object- or situation-specific positive emotions\textsuperscript{4} were higher (.30 to .64) than with the disposition to experience self-oriented positive emotions\textsuperscript{4} (.17 to .34). In line with previous findings (Güsewell & Ruch, 2012b), the correlation with the disposition to experience awe was numerically highest of all *responsiveness* dimensions (.36 to .62).

Strikingly, the link between responsiveness to artistic beauty and the DPES scores was systematically about half as high as the link between responsiveness to non-aesthetic goodness, or nature, and the DPES scores. This result suggested that responsiveness to artistic beauty is less emotional and more dependent on knowledge and cognition than responsiveness to nature and to non-aesthetic goodness. This assumption was further confirmed by the fact that only artistic beauty displayed a highly significant correlation with experience seeking (.30), a measure of the need for intellectually novel and challenging experiences, and that responsiveness to artistic beauty had the lowest correlation with absorption (.47 instead of .55 and .56), defined as an emotional responsiveness to engaging sights and sounds.

**Differences between samples with respect to responsiveness and aesthetics-relevant constructs**

To examine whether professional musicians, amateur musicians, and persons without musical practice would show significant differences with respect to *responsiveness* and aesthetics-relevant constructs, univariate ANCOVAs were performed with musical practice as the independent variable (3 groups) and the *responsiveness* dimensions, DPES awe, the experience seeking subscale of the SSS-V, and the absorption scale as dependent variables. Age and gender entered the analyses as covariates. Planned contrasts were computed whenever ANCOVAs showed a significant main effect (see Table 2).

\textsuperscript{4} For more details about the self-oriented and object- or situation-specific emotions, see Güsewell and Ruch (2012b).
As can be seen from Table 2, professional musicians scored highest on responsiveness to artistic beauty, experience seeking, and absorption, whereas amateur musicians scored highest on overall responsiveness, responsiveness to nature, and responsiveness to non-aesthetic goodness. Professional musicians displayed a specific artistic sensitivity, whereas amateur musicians showed a more general heightened sensitivity to different types of beauty and goodness. Overall, these findings were in line with the idea of a link between musical practice and the sensitivity to beauty and goodness. However, except for responsiveness to artistic beauty where the effect was of medium size ($\eta^2 = .06$), the ANCOVAs indicated only small effects (Cohen, 1988) of the group affiliation on the dependent variables ($\eta^2 \leq .05$), and the only significant difference concerned the responsiveness to artistic goodness score of professional musicians as compared to the scores of the two other groups.

The last research question concerned the differences between instrumental teachers, orchestra musicians, and soloists. Again, univariate ANCOVAs were performed with musical practice as the independent variable (3 groups), the responsiveness dimensions, DPES awe, Sensations Seeking, and absorption as dependent variables, and age and gender as covariates. None of these ANCOVAs indicated a significant main effect. However, the scores of soloists were clearly above those of teachers and orchestra musicians on all measures. Therefore, a third analysis was conducted comparing soloists, amateur musicians, and persons without musical practice (see Table 3).

Table 3 shows that soloists scored higher than amateur musicians on all of the responsiveness dimensions as well as on the other three measures; amateur musicians in turn scored higher
than persons without musical practice. The differences between soloists and persons without musical practice were significant for overall responsiveness, responsiveness to artistic beauty, responsiveness to beauty in nature and the surroundings, and experience seeking.

**Discussion**

This study contributed to the further validation of *responsiveness to the good and beautiful* by taking a close look at its expression in persons involved in different degrees of musical practice, and by assessing whether it correlated with measures of aesthetics-relevant constructs in a theoretically meaningful manner.

The results demonstrated that, consistent with predictions, *responsiveness* was related to the degree of involvement in musical practice. However, results also suggested that this relationship might not be simply linear, but rather needs to be differentiated. Two kinds of individuals high on *responsiveness* could be distinguished in this research: those who displayed an overall, generally heightened sensitivity to all types of beauty and goodness (i.e., amateur musicians, soloists), which is in line with theoretical models and assumptions (Diessner et al., 2008; Güsewell & Ruch, 2012a; Haidt & Keltner, 2004); and those who displayed a specific, standalone sensitivity to artistic goodness, a distinct “art-responsiveness” pattern (i.e., music teachers, and orchestra musicians), which is in accordance with the assumption that specific *responsiveness* profiles might exist as well. Of course, the validity of this interpretation is pending further examination, using external or real life criteria, of the proposed distinction between aesthetic beauty and non-aesthetic goodness.

These results hinted at the idea that it is neither the musical occupation, nor professional training, which are crucial for a well-balanced *responsiveness* profile, but rather the recurrent, actual opportunity to express oneself through artistic activity. Professional musicians earning their main income through concerts as soloists or as members of small ensembles (i.e., up to four musicians, no conductor) have this opportunity regularly --
although they may be teaching or playing in orchestras on occasion. Amateur musicians, in turn, are neither bound to the expectations of a public, nor to conventions or economical necessities, and thus can express themselves freely. By contrast, teachers hardly find time and energy outside of their pedagogical activities to concentrate on their instrument and interpretation. The group that certainly is the least homogeneous with respect to artistic activity is the one of orchestra musicians. Some of these musicians may be playing full-time in mid-level orchestras; others may have no regular employment and are travelling around to pick up low-paid gigs. These musicians probably subordinate their musical inspirations and ideas to the intentions of mediocre conductors, and their commitment to the group leads to them feeling like highly specialized “craftsmen” or “craftswomen” rather than like artistic personalities, which would fit in with the responsiveness profile displayed in this research by the orchestra subsample. However, most certainly, other musicians are employed in high standard orchestras, playing a demanding, varied repertoire under the direction of outstanding conductors, an activity that entails strong artistic and expressive involvement, and thus would rather speak to a responsiveness profile close to the one of soloists. Taken together with the small effect sizes, these findings call for a closer look at, and a finer-grained analysis, of the musicians’ actual artistic activities, in subsequent research. This would allow for the creation of more homogeneous groups prior to the comparison of their responsiveness profiles.

The responsiveness to the good and beautiful dimensions correlated in a theoretically meaningful way with the three art-related constructs that were examined in this research: the disposition to experience positive emotions, in particular, awe, sensation seeking, and absorption. The main outcome of this analysis was that responsiveness to artistic beauty was related more closely to experience seeking and less closely to dispositional positive emotions and absorption than the other responsiveness dimensions. This suggests that being
appreciative of art is -- at least partly -- dependent on the corresponding knowledge, and is therefore not only an emotional, but also a cognitive experience.

One important question remains open: what about activities that are not artistic, yet linked to the sensitivity to beauty and goodness, such as sports, religion, or psychology? Do individuals who are engaged professionally or as amateurs in these activities display a specific sensitivity to non-aesthetic goodness? This question was tentatively examined by Diessner et al. (2008), who hypothesized that education and psychology majors would score higher on engagement with moral beauty than would art and music students. However, this result was not confirmed. In a related vein, Güsewell and Ruch (2012a) checked for a link between sports as a leisure activity and an above average sensitivity to skills and talents. Yet, their data also did not give empirical support to such a link. Further research is therefore needed to examine whether results would be more conclusive if professional psychologists or athletes were considered, or if other professional areas and other leisure activities were taken into account.

The main limitation of this study is its correlational nature: comparing means allows for the establishment of significant differences between groups, but does not allow for any assertions regarding causality. Is the lower responsiveness level of instrumental or vocal teachers, and of orchestra musicians due to their working environment, or did these musicians apply for their jobs because they were less engaged with beauty and goodness? Are soloists successful because they bring along a pronounced responsiveness to all types of beauty and goodness, or did they develop it through concert practice? Do amateur musicians choose their hobby because of a specific sensitivity to beauty and goodness, or do they cultivate the latter through musical practice? To address these and similar questions, it is necessary to assess the long-term evolution of the sensitivity to beauty and goodness, from childhood through musical studies, and throughout life. The use of a mixed-methods research design combining
psychometric methods with qualitative approaches should be considered as it would allow for a more in-depth investigation and comprehension of the artistic topics of interest.

The samples were constituted according to the response of participants to a single question regarding their present musical (in)activity. However, other factors might have an impact on the primary dependent variables of interest, such as engagement in other forms of art, musical listening habits, or (un)familiarity with contemporary art. Additionally, as participants were self-selected, the possibility that those who took part might be different from those who did not (i.e., non-response bias)--and are therefore not representative of their respective populations--should be taken into account.

In studies using self-report questionnaires, response bias is a possible source of distortion of results. Response bias relates to the tendency of respondents to give answers that they believe the questioner or society in general might approve of, answers that fit into the image they have or would like to give of themselves, or answers they assume might help to promote some desired goal of their own. The present study did not yield any goal or outcome relevant to the participants. However, it is conceivable that some respondents, musicians in particular, be they professionals or amateurs, wanted to convey a certain impression of themselves, or attempted to oblige the researchers. The fact that the research was neither about deciding what is actually beautiful or excellent, nor about giving right or wrong answers, but about personal, subjective, and spontaneous reactions or feelings, was highlighted in the test instructions, and participants were prompted to answer the questions in a timely manner, without long pondering, speaks to the prevention of this type of bias. Additionally, to prevent answer patterns, the tests, questionnaires, and even items (ABET) were presented in a varied order. Finally, any reference to the specific aims of the study, in particular the comparison between musicians and non-musicians, was carefully avoided.
The fact that in this study, responsiveness to artistic beauty seemed to be less emotional and more dependent on knowledge than other types of beauty and goodness, pointed to the possibility that another form of response bias might have been an issue, a bias related to education. Art always relates to a particular culture, a religious, philosophical, and historical context; it is perceived against the background of what a society (or a sub-group of society) considers to be beautiful, or valuable; it is understood, experienced, and appraised through an evaluation grid composed of cultural background, knowledge, and socialization. Haidt and Keltner (2004) aimed at “broadening the scope of stimuli beyond classical conceptions of beauty and the arts” (p. 538) to make “this strength less a product of education class, and political ideology, and more accessible to people who have had little exposure to poetry and art museums, and little encouragement to develop an appreciation of high culture” (p. 538).

Our findings encourage going even one step further, and developing a culturally-independent measure that would not include any item relating to art, but rather would rely on visual patterns and sounds (instead of art and music), on natural beauty, and on short stories or video-clips requiring neither historical knowledge, nor specific cultural background, to be appreciated. Thus, studies, comparisons, and generalizations around the globe would be possible; the impact of socialization, age, educational level, affiliation to a subculture, language skills, and migrant background would be minimized. Finally, professional or amateur artists (e.g., musicians) could be studied without being experts in their respective fields. This, and only this, would then allow the assessment of whether, and to what extent, musicians are more sensitive or responsive to beauty and goodness than the general population.

This study expands existing knowledge not only on responsiveness to the good and beautiful, but also on the personalities of musicians. However, further research on the sensitivity to beauty and goodness is needed not only to derive health benefits for and prevent
burnouts in orchestras and to counsel professional musicians, but also to promote music education that fosters emotional involvement and that goes beyond merely developing theoretical knowledge and technical skills.
References


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Table 1. Correlations\(^a\) of the responsiveness dimensions with DPES awe, the DPES factors, SSS-V, and absorption.

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<tbody>
<tr>
<td></td>
<td>Awe</td>
<td>Self</td>
<td>Other</td>
<td>TAS</td>
<td>DIS</td>
<td>ES</td>
<td>BS</td>
<td>Absorption</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>.59***</td>
<td>.31***</td>
<td>.64***</td>
<td>.07</td>
<td>.04</td>
<td>.11*</td>
<td>-.08</td>
<td>.56***</td>
</tr>
<tr>
<td>Artistic beauty</td>
<td>.36***</td>
<td>.17**</td>
<td>.30***</td>
<td>-.03</td>
<td>.11*</td>
<td>.30***</td>
<td>.03</td>
<td>.47***</td>
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<tr>
<td>Non-aesthetic</td>
<td>.58***</td>
<td>.30***</td>
<td>.64***</td>
<td>.07</td>
<td>.04</td>
<td>.11*</td>
<td>-.08</td>
<td>.55***</td>
</tr>
<tr>
<td>Nature</td>
<td>.62***</td>
<td>.34***</td>
<td>.63***</td>
<td>.11*</td>
<td>.02</td>
<td>.09</td>
<td>-.08</td>
<td>.56***</td>
</tr>
</tbody>
</table>

Note. \(N = 342\) (men = 102, women = 240). Partial correlations control for age and gender. Self = self-oriented emotions (i.e., joy, contentment, pride, love); other = object- or situation-specific emotions (i.e., compassion, amusement, awe). \(^a\)Pearson correlation. *\(p < .05\). **\(p < .01\). ***\(p < .001\)
Table 2. Comparisons among professional musicians, amateur musicians, and persons with no musical practice on the responsiveness dimensions, DPES awe, SSS ES, and absorption.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Test</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>musician</td>
<td>amateur</td>
<td>no musical practice</td>
<td></td>
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<tr>
<td>Model</td>
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<tr>
<td>Responsiveness</td>
<td>2.26</td>
<td>2.32</td>
<td>2.25</td>
<td>2.09</td>
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<tr>
<td>Artistic</td>
<td>1.57&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.47&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.41&lt;sup&gt;b&lt;/sup&gt;</td>
<td>9.87</td>
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<tr>
<td>Non-aesthetic</td>
<td>2.29</td>
<td>2.35</td>
<td>2.29</td>
<td>2.07</td>
</tr>
<tr>
<td>Nature</td>
<td>2.59</td>
<td>2.68</td>
<td>2.61</td>
<td>2.58</td>
</tr>
<tr>
<td>DPES</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Awe</td>
<td>4.67</td>
<td>4.86</td>
<td>4.76</td>
<td>1.20</td>
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<td>SSS</td>
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<tr>
<td>ES</td>
<td>6.92</td>
<td>6.51</td>
<td>6.56</td>
<td>1.72</td>
</tr>
<tr>
<td>Absorption</td>
<td>22.18</td>
<td>21.83</td>
<td>20.68</td>
<td>2.26</td>
</tr>
<tr>
<td>N</td>
<td>92</td>
<td>125</td>
<td>125</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 342. ANCOVAs were performed and, where significant, followed by planned contrasts (musicians against the other two groups). Bold indicates the highest score on each of the dimensions or scales. Means after correction for age and sex. Significant differences between conditions (p ≤ .05) are coded with different letters.
Table 3. Comparisons among soloists, amateur musicians, and persons with no musical practice on the responsiveness dimensions, DPES awe, SSS ES, and absorption.

|                      | Groups                          | Test |      |  |    |
|----------------------|---------------------------------|------|------|  |    |
|                      | soloist                         | amateur | no musical practice | F   | p   |  \( \eta^2 \) |
| Model                |                                 |       |      |  |    |
| Responsiveness       | 2.40\textsuperscript{a}         | 2.32   | 2.25\textsuperscript{b} | 3.16 | .044 | .03 |
| Artistic             | 1.69\textsuperscript{a}         | 1.47\textsuperscript{b} | 1.41\textsuperscript{b} | 8.04 | <.001 | .06 |
| Non-aesthetic        | 2.44\textsuperscript{a}         | 2.35   | 2.29\textsuperscript{b} | 3.10 | .047 | .03 |
| Nature               | 2.74                            | 2.68   | 2.61 | 2.24 | .108 | .02 |
| DPES                 |                                 |       |      |  |    |
| Awe                  | 5.08                            | 4.86   | 4.76 | 1.18 | .308 | .01 |
| SSS                  |                                 |       |      |  |    |
| ES                   | 7.69\textsuperscript{a}         | 6.51\textsuperscript{b} | 6.56\textsuperscript{b} | 3.36 | .036 | .03 |
| Absorption           | 23.62                           | 21.83  | 20.68 | 2.71 | .068 | .02 |
| N                    |                                 | 15     | 125   | 125 |

Note. \( N = 265 \). ANCOVAs were performed and, where significant, followed by planned contrasts (soloists against the other two groups). Bold indicates the highest score on each of the dimensions or scales. Means after correction for age and sex. Significant differences between conditions (\( p \leq .05 \)) are coded with different letters.
Figure 1. Responsiveness to the good and beautiful model (Güsewell & Ruch, 2012a), standardized solution for this sample.