Personality and Uses of Music as Predictors of Preferences for Music Consensually Classified as Happy, Sad, Complex, and Social

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This study replicates the findings of a recent study (Chamorro-Premuzic, Gomà-i-Freixanet, Furnham, & Muro, 2009) on the relationship between the Big Five personality traits and everyday uses of music or people’s motives for listening to music. In addition, it examined emotional intelligence as predictor of uses of music, and whether uses of music and personality traits predicted liking of music consensually classified as sad, happy, complex, or social. A total of 100 participants rated their preferences for 20 unfamiliar musical extracts that were played for a 30-s interval on a website and completed a measure of the Big Five personality traits. Openness predicted liking for complex music, and Extraversion predicted liking for happy music. Background use of music predicted preference for social and happy music, whereas emotional music use predicted preference for sad music. Finally, males tended to like sad music and use music for cognitive purposes more than females did.

Keywords: uses of music, personality, trait EI, Big Five, music preferences/tastes

Music is one of the most celebrated yet enigmatic phenomena in human society. Neanderthals are believed to have engaged in musical activities over 30,000 years ago (Mithen, 2005), and the significance of music today is demonstrable in terms of commerce—in 2006, worldwide recorded music sales totaled $31 billion and the whole music industry was valued at $130 billion (International Federation of the Phonographic Industry, n.d.). Indeed, a large sample survey by Rentfrow and Gosling (2003) found that music is one of people’s favorite and most enduring past times. Similarly, 94% of young adult Swedes surveyed by Bjurstöm and Wennhall (1991) described themselves as very or fairly interested in music, and a sample of American adolescents reported listening to an average of almost 5 hr of music per day between the ages of 12 and 18 years (Davis, 1985)—A figure obtained long before the advent of the MP3 players and other digital media. Hence, it is easy to understand why music has been the focus of a wide breadth of psychological research (Tramo, 2001; Schellenberg, 2006).

In a recent series of studies (see Chamorro-Premuzic, Gomà-i-Freixanet, Furnham, & Muro, 2009, for a summary) Chamorro-Premuzic, Gomà-i-Freixanet, and colleagues (2009) examined psychometrically assessed (e.g., personality, cognitive ability, interests) individual difference correlates of uses of music, that is, why people use music in everyday life. Their research showed that Neuroticism is positively correlated with emotional use of music (i.e., using music to regulate or manipulate affective states), that Extraversion is positively correlated with background use of music (i.e., using music as background to other activities, such as studying, driving, or working), and Openness to Experience is positively correlated with intellectual or cognitive use of music (i.e., experiencing music in a rational way or using it for intellectual stimulation).

Although the above findings have been replicated, quite consistently, across cultures, they provide only preliminary evidence for the idea that major individual differences underlie different uses of music and potentially explain how different people use music in everyday life. First, the “catalogue” of traits that have been examined in connection to uses of music is far from comprehensive, which explains why there remains a substantial amount of unaccounted variance in each use of music. Moreover, it would seem that individual differences have not been “evenly” examined for each use of music. For instance, the cognitive/intellectual use of music has been examined by Openness, IQ, self-assessed intelligence, and typical intellectual engagement (Chamorro-Premuzic & Furnham, 2007; Chamorro-Premuzic, Gomà-i-Freixanet, et al., 2009), but the emotional use of music has been linked only to Extraversion and primarily, Neuroticism. Thus the current study will examine how the construct of trait emotional intelligence (EI), which refers to a person’s emotional self-efficacy or their perceived ability to recognize and control their own and others’ emotions (Sevdalis, Petrides, & Harvey, 2007), relates to uses of music.

Given that trait EI is assessed via self-reports, it is considered a personality trait, related to, but different from, the Big Five personality traits (Chamorro-Premuzic, 2007). As such, it is orthogonal to the construct of “ability” EI (Warwick & Nettlebeck, 2004), which is concerned with emotional abilities measured through maximum-performance tests (Brackett & Salovey, 2006). In the current study, we opted for a measure of trait EI because of the current limitations associated with the objective measurement of the broad ability EI construct, no doubt a function of the subjective nature of emotional experiences (Robinson & Clore,
2002). Trait EI, on the other hand, can be measured reliably via self-reports and has been found to have significant associations with a number of criteria over and above the Big Five personality traits, such as goal self-integration (Spence, Oades, & Caputi, 2004), job competencies (Van der Zee & Wabeke, 2004), and recognition of facial expressions of emotion (Petrides & Furnham, 2003). That said, trait EI is substantially related to the Big Five traits of Emotional Stability, Extraversion, and Openness (Chamorro-Premuzic, 2007), which begs the question of whether any significant correlation between trait EI and use of music remains significant when other Big Five traits are considered. There is currently very little literature relating trait EI to music. However, as trait EI is negatively correlated with Neuroticism, one would expect that individuals with higher trait EI would be less likely to use music for emotional regulation and therefore score lower on the emotional use of music.

Another area for expansion in the original Chamorro-Premuzic and Furnham (2007) uses of music study was the fact that self-reported uses of music may not necessarily correlate with actual preference for appropriate music, though one would expect that they would. As discussed, there has been a distinction in research between musical preferences (e.g., Rentfrow & Gosling, 2003) and uses of music (Chamorro-Premuzic & Furnham, 2007). Consequently, the present study sought to expand on previous findings by bridging this gap. This was done by examining participants’ preference ratings for music that could be categorized according to the dimensions of the Uses of Music Inventory (Chamorro-Premuzic & Furnham, 2007)—emotional, cognitive, and background. In the case of emotional use, a limitation was previously identified in which there was no distinction between positive and negative affect. Consequently, this study measured preferences for music representative of both positive and negative emotions. Considering emotional music use is predominantly associated with lower Emotional Stability, and that individuals with neurotic tendencies are more susceptible to negative emotional states (Canli et al., 2001), it was expected that an emotional use of music would correlate positively with a preference for sad rather than happy music.

Therefore, the general aim of this study was to replicate Chamorro-Premuzic, Gomà-i-Frexanet, et al.’s (2009) findings on the relationship between individual differences and uses of music, to look at trait EI in relation to these, and also to extend uses of music to preferences for actual compositions.

As in the Spanish and Malaysian sample replications, structural equation modeling (SEM) was used to test a model in which personality traits (specifically Emotional Stability, Extraversion, Openness, and trait EI) predict uses of music, which in turn, predict music preferences. The hypothesized model is shown in Figure 1. As shown, we predicted negative effects of trait EI and Emotional Stability onto emotional use of music, which in turn, was expected to have positive effects on both sad and happy song preferences. Extraversion was predicted to have positive effects on background music use, which in turn, was predicted to have positive effects on preference for social songs. Finally, Openness was expected to have positive effects on cognitive music use, which in turn, was expected to have positive effects on preference for complex songs.

Method

Participants

In all, 100 participants (42 males and 58 females) took part in this study. Opportunistic sampling was used, with the only pre-requisite being fluency in English. Ages ranged from 15 to 71 years, with a mean of 23.9 (SD = 7.4).

Procedure and Measures

Participants were recruited over the Internet using emailing and networking sites such as MySpace and Facebook. The questionnaire was both put together (using “RiddleMeThis”) and hosted online. Participants completed it wherever they chose and at their own pace. They were initially briefed, asked to give consent and informed all data was kept anonymous. After this, they were asked to provide demographic details (age and sex) to control for their effects on measured variables. Then they completed, in order, the following measures.

IPIP. The International Personality Item Pool (IPIP; Goldberg et al., 2006) consists of 50 items, of which 10 are summed (with

![Figure 1. Hypothesized model for individual differences, uses of music, and music preferences. N = 100; ES = emotional stability; EI = emotional intelligence; E = extraversion; O = openness; M(emot) = emotional use of music; M(back) = background use of music; M(cog) = cognitive use of music.](image-url)
some reverse scoring) to measure each of the Big Five personality traits: Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience/Intellect (Agreeableness and Conscientiousness were not examined in the current study in line with Chamorro-Premuzic, Gomà-i-Freixanet, et al., 2009). The items involve questions about a number of typical behaviors and feelings and are based on a 5-point Likert scale ranging from 1 (very inaccurate) to 5 (very accurate). Although the authors do not provide norms for comparison, the scale is widely used and has good reliability and validity (see Goldberg et al., 2006).

**TEIQue–SF.** The Trait Emotional Intelligence Questionnaire Short Form (TEIQue–SF; Petrides & Furnham, 2006) was used to measure global trait EI. This 30-item test is based on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree) to gauge responses to statements such as “I’m usually able to find ways to control my emotions when I want to.” The item responses are summed (with some reverse scoring) to give a total trait EI score for each participant. The measure reports good reliability and comprehensive cover of the whole trait EI construct (see Petrides & Furnham, 2006).

**The uses of Music Inventory.** The Uses of Music Inventory (Chamorro-Premuzic & Furnham, 2007) was constructed to measure views about when and why one listens to music. The 15-item inventory is described in detail in Chamorro-Premuzic, Gomà-i-Freixanet, et al. (2009).

**Music Preferences.** Initially, 40 original compositions were created by an independent composer (a trained jazz guitarist known by one of the experimenters), divided equally into the categories of sad, happy, complex, and social. The emotional valence of compositions tended to be defined as outlined by Krumhansl (1997): Sad music generally used minor harmonies and slower tempos, whereas happy generally used major harmonies, faster tempos, and dance-like rhythms. Complex compositions were generally defined by a higher density of notes, a more advanced playing technique, unusual timing patterns, and sophisticated genres such as jazz and blues (Rentfrow & Gosling, 2003). Social music was intended to represent music that is suitable for background to other activities (e.g., driving, studying, or working); hence musical extracts were composed that were emotionally neutral, consistent, almost monotonous, in tempo and harmony, and generally nonarousing. These musical extracts were also intended to have little or no overlap with the emotional and cognitive compositions outlined above.

All compositions were controlled for in terms of length (around 30-s long), volume and instrument (guitar only). Tempo was controlled for as best possible and did not vary greatly from around 100 bpm; although, as mentioned, there did have to be some variations to achieve the intended emotional effects. Musical extracts were composed with the aim of avoiding any particular genre to ensure they had cognitive, emotional, and social value in their own right, rather than through cognitive associations such as personal memories (Meyer, 1956). The pieces were composed with the intention of keeping the four categories independent so that, for instance, complex pieces were not sad, happy, nor social suited. This was done to avoid overlap in composition preferences between people of different personality types.

Once these 40 pieces had been recorded, they were evaluated by five peers for their suitability in their relevant category. For each piece, four questions were posed and responses recorded on a 5-point Likert scale ranging from 1 (not a lot) to 5 (very much so). These questions measured: sadness (“How sad do you find this music? How likely is it to ‘make someone sad,’” or induce sadness or a melancholic mood?”), happiness (“How happy do you find this music? How likely is it to ‘make someone happy,’ or cheer them up?”), complexity (“How complex do you find this music? How likely is it to be enjoyed those with refined or sophisticated musical tastes?”), and social suitability (“How suitable do you find this music as background music to other social activities, such as studying, working, or having a conversation?”). Scores from all five participants were summed to give a score for each musical extract in each category. The top five highest scoring compositions in each category were kept for the final study. The Cronbach’s alpha showed a general increase in reliability after the removal of the lower rated compositions: from .85 to .93 for sad, .70 to .80 for happy, .76 to .81 for complex, and .45 to .60 for background. Across all categories, alpha increased from .74 to .83 (N = 5 for all figures). Reliability from this selection phase was thus acceptable in every category for musical extracts ultimately selected, and they were consequently used in the final study.

The Music Preferences test included 20 compositions to be rated—five happy, five sad, five complex, and five social (a selection of these songs is available at http://www.thefagans.org.uk/psychol/). For each musical composition, participants were asked to rate, on the same 5-point scale, the four questions outlined above. This was done to confirm each composition’s suitability to its relevant category. Participants were also asked to indicate, on the same scale, preference for each musical extract by responding to an additional item (“How much do you like this music?”). This test took approximately 20 to 30 min to administer. Scores were computed to give each participant a preference score for each of the four musical composition categories.

As before, all participants’ scores were summed for each question of each composition: When the pieces were ranked according to their total score for each category, they generally fit as intended. The top five sad-rated musical compositions were intended to belong in that category—the same was true of the top five happy compositions and four of the top five complex compositions. Only one of the top five background-rated compositions belonged to its appropriate category. However, Cronbach’s alpha (see the Appendix) for every preference category, including social, suggests good reliability—alpha values higher than .6 are deemed satisfactory for 5-item scales (Youngman, 1979).

**Results**

Means, standard deviations, and internal consistencies (Cronbach’s alpha) for all composite measures are reported in Table 1. The Uses of Music values were in line with previous studies, with means of around 14 and standard deviations in the region of 4 (see Chamorro-Premuzic, Gomà-i-Freixanet, et al., 2009; Chamorro-Premuzic, Swami, Furnham, & Maakip, 2009) and all alphas were acceptable or high. Scores were subsequently standardized to a mean of 0 and a standard deviation of 1 (z scores).

**SEM**

SEM was next carried out using maximum likelihood via AMOS 4.0 (Arbuckle & Wothke, 1999) to: (a) account for the
overlap between different predictors, (b) account for the overlap between different criteria, (c) account for variability in preferences for specific types of music (removing the variance related to generic preferences, i.e., for all musical extracts), and (d) assess the validity of a hierarchical model in which the same factors are both predictors and criteria. Missing values (<5% per variable, in line with Tabachnick & Fidell, 2007) were replaced with the series mean at the item level—prior to computing the factor scores. Prior to analysis, variables (factor scores) were standardized across the whole sample to a mean of zero and unit variance. We used standardized variables in our analysis because personality and music preference scores lie on different scales, as suggested by Loehlin (2004). Next, we examined associations of multivariate normality by inspecting Mardia’s coefficient (in line with Ullman, 2007), which indicated that assumptions of multivariate normality were met and therefore, no transformation or normalization was required and maximum likelihood was justified as SEM method.

The hypothesized model (shown in Figure 1) did not fit the data well: \( \chi^2(37, N = 100) = 86.7, p < .01 \), comparative fit index (CFI) = .83. In line with modification indexes (statistical indicators for model fit improvement) and Silvia and MacCallum’s (1988) recommendations, three theoretically meaningful paths were added in the following order, namely: from Openness to complex music, \( \chi^2(36, N = 100) = 77.8, p < .01 \), CFI = .85; \( \chi^2(1) = 8.9, p < .01 \), from Extraversion happy music, \( \chi^2(35, N = 100) = 70.2, p < .01 \), CFI = .88; \( \chi^2(2) = 16.5, p < .01 \), and from background music use to happy music, \( \chi^2(34, N = 100) = 56.9, p < .01 \), CFI = .94; \( \chi^2(3) = 29.8, p < .01 \). The modified model (shown in Figure 2) fit the data well. As shown, three of the hypothesized paths, namely from trait EI to emotional music use, from cognitive music use to complex music, and from emotional music use to happy music, were not significant. Removal of these paths did not significantly change model fit, \( \chi^2(37, N = 100) = 57.2, p < .01 \), CFI = .95, CFI = .95, \( \chi^2(3) = 0.3, p > .05 \).

A final model, which added sex and age, was then tested. The hypothesized model was the modified model shown in Figure 2 minus the nonsignificant paths (which were removed). No paths from sex or age onto other variables were predicted, but modification indexes were examined to identify effects of these variables. On that basis, effects of sex onto cognitive use of music and sad

music, as well as from age onto cognitive music use, were added. This model (shown in Figure 3) fit the data well: \( \chi^2(55, N = 100) = 71.6, p < .05 \), CFI = .96. As shown in Figure 3, men tended to prefer sad music and be higher on the cognitive music use compared to women, whereas age had negative effects on cognitive music use.

### Discussion

The present study attempted to replicate past findings on the relationship between broad personality traits and uses of music (see Chamorro-Premuzic, Goma’-i-Freixanet, et al., 2009), as well as extending them by examining whether trait EI explains uses of music over and above the Big Five, and whether individual differences and uses of music explain preferences for different types of music.

With regard to replicating the link between personality (the Big Five) and uses of music (Chamorro-Premuzic, Goma’-i-Freixanet, et al., 2009), results were consistent with past studies in that Extraversion positively affected people’s tendency to use music as background to other activities. Emotional Stability negatively affected people’s tendency to use music for emotional/mood regulation, and Openness positively affected people’s tendency to use music for intellectual stimulation/in a rational or cognitive way. These effects were significant even when sex and age were each taken into account (as shown in Figure 3) and are interpreted in line with Chamorro-Premuzic, Goma’-i-Freixanet, et al., 2009.

In regards to trait EI, this construct was found to correlate negatively with emotional use of music as predicted (see Appendix). However, when taking into account other personality traits, its effects on uses of music were trivial. This is in line with the strong overlap between emotional intelligence and the Big Five (see Chamorro-Premuzic, 2007), in particular Emotional Stability. Consequently, it may be feasible to disregard trait EI when considering other Big Five predictors of uses of music, notably Neuroticism. That said, the current sample is clearly too small to rule out the potential unique contribution of trait EI to explaining use of music.

### Predictors of Musical Preferences

Three types of predictors of music preferences were examined, namely (from less to more distal) uses of music, personality traits, and demographics (age and sex), with hypothesized associations only for the link between uses of music and preference for music type. Two of the three hypotheses relating to the uses of music predictors of music preferences were supported (i.e., background use had positive effects on preference for social music, whereas emotional use had positive effects on preference for sad music); however, contrary to predictions there were no significant effects of cognitive music use on complex music preference or on emotional music use on happy music preference. Moreover, back-

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1 The following fit indexes were used: chi-square (Bollen, 1989), which tests whether an unconstrained model fits the covariance/correlation matrix as well as the given model (although nonsignificant chi-square values indicate good fit, well-fitting models often have significant chi-square values); the CFI (Bentler, 1990), which compares the hypothesized model with a model based on zero-correlations among all variables (values around .90 indicate very good fit).
ground music use was found to have a positive effect of preference for happy music, whereas Extraversion and Openness were found to have positive effects on happy and complex music preference, respectively (these effects had not been predicted as the model hypothesized only indirect effects of individual differences onto music preferences, via uses of music).

**Preference for Sad and Happy Music**

Participants' liking of sad music tended to increase as their tendency to use music in an emotional way (emotional use of music) increased. We find it interesting that Emotional Stability had no effects on preference for sad music even though it affected emotional use of music. This suggests that the extent to which emotional users of music will prefer sad music is unrelated to their level of Emotional Stability. Moreover, males showed higher levels of liking for sad music (irrespective of their level of Emotional Stability and emotional use of music) than did females. Previous findings suggest that females tend to be more concerned than males with music’s ability to aid emotional needs (North, Hargreaves, & O’Neill, 2000) and are also more responsive than males to the emotional effects of music (Coffman, Gfeller, & Eckert, 1995; Panksepp, 1995). Although this study found no gender effect on emotional use of music, if females are more likely to experience negative emotions when listening to sad compositions, they may be expected to dislike sad music more than their male counterparts.

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**Figure 2.** Modified model for individual differences, uses of music, and music preferences. N = 100; ES = emotional stability; EI = emotional intelligence; E = extraversion; O = openness; M (emot) = emotional use of music; M (back) = background use of music; M (cog) = cognitive use of music. All coefficients are standardized Betas; correlations between ES and E (.31**), EI and ES (.66**), EI and E (.41**), EI and O (.19), M (cog) and M (emot) (.23**), happy and social (.65**), happy and sad (.24), sad and social (.19), not shown for simplicity. Dashed lines added in the modified model; dotted lines are nonsignificant hypothesized paths. *p < .05. **p < .01.

**Figure 3.** Modified model including sex and age as predictors. Sex coded: 1 = males; 2 = females. Correlations between sex and ES (−.28**), sex and E (.18*). See note to Figure 2 for other correlations and abbreviations. *p < .05. **p < .01.
On the other hand, liking of happy music was positively affected by individuals’ Extraversion level, which is in line with Rentfrow and Gosling (2003). These authors found Extraversion to correlate positively with preferences for their “upbeat and conventional” music dimension, which they found to be low in negative affect and high in positive affect—so they can be thought of as similar to the happy music used here. Explanations for this phenomenon can be found in the Extraversion facets of both positive emotionality and low resting levels of arousal. First, if Extraversion is thought of as positive emotionality (Canli et al., 2001), then it is easy to imagine that extraverts would be drawn to music that reflects this aspect of their personality. Rentfrow and Gosling (2003) suggested that individuals select music that reinforces their personal dispositions; extraverts may therefore prefer to listen to positive music as it reflects that part of their character. Second, extraverts’ lower resting levels of arousal (see above) and higher levels of sensation seeking (e.g., Zuckerman, Bone. Neary. Mangelsdorf, & Brustman, 1972) have been found to be predictive of preferences for more arousing music (McNamara & Ballard, 1999). Because our happy music generally fit Krumhansl’s (1997) criteria of having faster tempos and dance-like rhythms, extraverts may have preferred them for their attention-grabbing quality. This is echoed by Rentfrow and Gosling’s (2003) positive correlation between Extraversion and preference for their “energetic and rhythmic” dimension.

The effects of Extraversion onto happy music preference also shed light on a theory proposed by Chamorro-Premuzic and Furnham (2007). In their paper, they suggested that positive or negative affect in emotional use was primarily driven by intentional mood regulation—for example, listening to a sad music when one is sad or to happy music when one is happy. The results of the present study suggest that the choice of sad or happy music may be determined not only by mood, but also personality traits (which reflect aggregate levels of mood). In particular, Neuroticism (negative emotionality) and Extraversion (positively emotionality) may be valid markers of people’s general preference for sad and happy music, respectively. That people would prefer to choose music that is congruent with their personality, supporting earlier theoretical claims that individuals actively select environments that reinforce their attitudes and beliefs (Buss, 1987).

Preference for Complex Music

Although cognitive use of music had no significant effects on preference for complex music, Openness to Experience did. Thus, open participants were more likely to like complex music, but not because they used music in a more cognitive/intellectual way. This association may be indicative of the novelty or unconventional features of both the music classified as “complex” and the open personality. It appears, then, that people do not just profess cognitive use because complex music inherently appealing to them. So, although a number of factors may lead to a cognitive interest in music, only Openness to Experience seems to determine whether individuals genuinely appreciate complex music. As Openness to Experience has been found to correlate with intellectual engagement (Ackerman & Goff, 1994) and intelligence (Ackerman & Heggestad, 1997), open individuals could be more likely than nonopen ones to respectively seek out and retain musical knowledge. Consequently, those high in Openness may be expected to have more refined, sophisticated taste in music and show similar music preferences. The higher intelligence levels that is emblematic of more open individuals may also mean that open people are both more willing and able to understand the complicated techniques of advanced performers and richer compositional structure of complex music, which is in line with the finding that intelligent people prefer complex aesthetic stimuli more than less intelligent people do (Barron, 1955; Francès, 1976; Kamman, 1966). Finally, there is of course the point that those high in Openness to Experience would be more likely to show a preference for music with timing, rhythms, and melodies that are less familiar to them.

Preference for Social Music

As predicted, background use of music had positive effects on preference for social music. In addition, background use of music predicted preferences for happy music. Because background use of music is defined partly by using music in social occasions (one item was “I enjoy listening to music in social events”), users would be expected to like music that may impose a positive affect on people. In line, it has been found that teenagers with few friends prefer to listen to music that has themes of loneliness (Burke & Grinder, 1966).

That said, considering the informal distribution of the survey (in which participants could have been working, talking to friends or flatmates, or watching TV, while completing the survey), and the fact that the pieces may have been listened to at the same time as rating them, all compositions may indeed have been used as background music in this context. Moreover, the classification of music as social was the only one that did not clearly replicate the results of our a priori classification.

In addition to the predicted associations discussed above, the current results showed that cognitive use of music was affected by both gender (males more likely to use music in a cognitive/intellectual way) and age (negatively). Although these associations are exploratory, they seem consistent with the idea that music is used to create an external image to others (e.g., Rentfrow & Gosling, 2003; Tarrant, North, & Hargreaves, 2000), especially in males, when both playing and listening to music (North et al., 2000). Along similar lines, evolutionary theory postulates that sexual selection of males by females depends on factors that are likely to ensure good genes for the survival of offspring and the ability of the male to obtain resources (Buss, 1989). One of these overarching factors is intelligence. Consequently, males may be more likely to report using music in a cognitive way due to the message of cognitive ability and inherent attractiveness it conveys to the opposite sex.

With regard to age effects, a recently proposed model of creative measures (Chamorro-Premuzic, Furnham, & Reimers, 2007) postulates that individual differences predict creative preferences and interests, which can lead over time, to creative knowledge and refined artistic judgment. In this case, a younger age may be important in promoting greater interest in music in adolescents/young adults, which in turn, may lead to greater cognitive appreciation of it. However, as people get older, familiarity may cause a decline in this interest, and consequently, a decrease in cognitive use of music.

Naturally, the single-wave nature of the current design (which assessed all constructs at one time rather than longitudinally), as
well as the small, albeit cross-sectional, sample, make these developmental hypotheses speculative at most. Another effect to consider is the result that females were more likely than males to show a general preference for all compositions. Although this echoes previous findings that females tend to have a more positive attitude to music (Colley, Comber, & Hargreaves, 1994; Crowther & Durking, 1982), it may simply be attributed to factors within the musical extracts composed. All of the music had a moderate tempo and were played without percussion or distortion, so they may have consequently fallen into Schwartz and Fouts’s (2003) “light” category of music, which females were found more likely to prefer than males—possibly due to it reflecting themes with which females are more concerned, such as relationships and socialization (Larson, 1995).

Limitations

Owing to the recency of research into personality and uses of music and the lack of past studies on the purposely designed auditory measure of music preferences, the current study is largely exploratory and suffers from a number of limitations, which could be addressed by further research.

First, further studies may do well to expand our model by including a measure of creativity (as suggested by Chamorro-Premuzic et al., 2009). The current data were obtained by using a basic web-based survey but more advanced software will enable us to also include timed, open-ended, text items, such as those used to measure ideational fluency or divergent thinking processes. In addition, cognitive ability could also be examined. Both IQ and creativity are particularly relevant with regard to understanding the link between Openness and cognitive use of music as well as improving our prediction of preference for complex music.

Second, the current results cannot reveal the causal direction underlying many of the associations identified (in fact, only gender and age effects on other variables can be regarded as causal). Social cognition theories suggest that chronic exposure to attitudes in media may lead to greater accessibility (e.g., Bargh, 1984), so it could be that music preferences are determined by other, unexamined variables like peer influence—and music listened to consequently determines personality traits. Longitudinal studies into music preferences and personality traits could be carried out to assess this.

Third, the current analyses via SEM were carried out on a relatively small sample. There is an extensive literature on the sample size requirements for SEM, and although even a brief summary of that literature is beyond the scope of this article, a number of experts seem to agree that 100 cases are the minimum required for a design with 10 to 15 variables. Bentler and Chou (1987) requested five cases per parameter estimates (with our design that would mean a sample of at least 80 participants); Kline (1998) considered sample sizes over 100 to be tenable, while both Loehlin (1992) and Hoyle (1995) recommended at least 100 cases. Needless to say, we would have welcomed a larger sample size but collecting the present 100 cases was a time-consuming and effortful venture given the lack of incentives for participants and the length of the experiment. In the current study, the choice of SEM (over regression analysis) was driven mainly by the prospect of testing a theoretical model in which variables are treated simultaneously as predictors and criteria, and the variance attributed to a generic factor of musical preferences can be removed. Indeed, SEM is the appropriate method with multiple-outcome variables and multiple predictors and intervening variables. Despite the small sample size used to test this model, it is hoped that publication of this study will encourage researchers to test this model with larger samples.

Finally, the results need to be viewed with the consideration that, due to the nature of the IPIP, there are no norms to compare the personality traits to. It is possible that the sample used here was higher in Openness than the general population: Open individuals were probably more likely to participate in this voluntary experiment. Consequently further analysis should use more rigid sampling methods to obtain a wider range personality profiles. It would also be important to provide evidence for the test–retest reliability of the Music Preferences test we employed; this would no doubt reduce error variance in the endogenous variables of the model.

Conclusions

Despite these limitations, the current results replicate Chamorro-Premuzic and Furnham’s (2007) findings with regard to personality and uses of music, as well as offering valuable insight into the nature of consequent music preferences. We believe that the current results provide support for the growing literature suggesting that variations in music use and musical taste are to some extent the reflection of individual differences in personality, and add to it by suggesting how uses and tastes relate to each other. Moreover, the current findings also demonstrate how both uses and preferences can vary as a function of age and gender. Of particular interest is the implication that choice of positive and negative affect in music may be determined as much by personality as mood and that preference for complex or novel music may be driven by personality. It would be interesting to assess to what extent these findings can be extrapolated to the wider field of media preferences, that is, investigate whether individuals select other forms of media that reflects their own personality traits (Buss, 1987). Accordingly, our results have a number of applied implications, such as informing the selection of different kinds of music (and other media) for different types of consumers; and, from a clinical point of view, they could guide music-based therapies depending on individual needs.

References


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**Appendix**

**Intercorrelations Among Target Measures**

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<th>Target measure</th>
<th>2</th>
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<tbody>
<tr>
<td>1. Sexa</td>
<td>.16</td>
<td>.19</td>
<td>.01</td>
<td>-.27**</td>
<td>.02</td>
<td>-.04</td>
<td>.18</td>
<td>.19</td>
<td>.24*</td>
<td>-.23*</td>
<td>.02</td>
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<tr>
<td>2. Age</td>
<td>.04</td>
<td>.06</td>
<td>.17</td>
<td>.18</td>
<td>-.05</td>
<td>-.09</td>
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<td>-.04</td>
<td>-.14</td>
<td>.11</td>
<td>-.10</td>
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<td>3. Extraversion</td>
<td>.20*</td>
<td>.31**</td>
<td>.45**</td>
<td>-.06</td>
<td>-.21*</td>
<td>.14</td>
<td>.05</td>
<td>.16</td>
<td>-.06</td>
<td>.21*</td>
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<td>4. Openness</td>
<td>.07</td>
<td>.27**</td>
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<td>.04</td>
<td>.29**</td>
<td>-.05</td>
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<td>.16</td>
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<td>5. Emotional Stability</td>
<td>.66**</td>
<td>-.14</td>
<td>-.12</td>
<td>-.20*</td>
<td>-.14</td>
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<td>6. Trait EI</td>
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<td>7. Sad music</td>
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<td>.57**</td>
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<td>8. Happy music</td>
<td>.33**</td>
<td>.72**</td>
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<td>9. Complex music</td>
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<td>11. M(cognitive)</td>
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</table>

*Note. N = 100. M (cognitive) = cognitive/intellectual use of music; M (emotion) = emotional use of music; M (back) = background use of music.*  
*1 = male; 2 = female.*  
*p < .05. **p < .01.*

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