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# **Musical preference: Personality, style, and culture**

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## **Introduction**

Liking or disliking a piece of music is perhaps our most common affective response to music (e.g., Brattico & Jacobsen, 2009). But why do we like the music that we like? Although certain general features of music – such as its familiarity and complexity – can be used to explain why we like or dislike certain pieces of music, our music preferences are largely shaped by our social and cultural surroundings. Consistent with the idea that individual differences are inherent to matters of taste, music preferences tend to vary greatly from one individual to the next. In fact, it is a commonly held belief that an individual's music preferences can reveal salient information about their personality to others (Rentfrow & Gosling, 2003). Indeed, empirical findings have established that our personality dispositions seem play an important role in determining what kinds of music we enjoy listening to. Different personality traits are associated with different emotional, social, and cognitive needs, and people tend to enjoy music that helps them to fulfil these needs. In other words, music can function to both reflect and reinforce aspects of people's personalities, self-views, and values. In this chapter, I will first outline some general principles and theories that have been proposed to account for listeners' liking and disliking responses to music. I will then introduce some key concepts from personality psychology before proceeding to explore the contribution of personality traits to music preferences in more detail.

## **Complexity, familiarity, and 'arousal potential'**

Certain general principals and patterns can be found in listeners' liking and disliking responses to music. An influential theory by Berlyne (1971) applies a psychobiological approach to aesthetics, emphasizing the role of arousal in liking/disliking responses to artistic stimuli such as music. Music's 'arousal potential' is positively associated with features such as tempo, volume, and complexity, and negatively associated with familiarity. In other words, music that is fast, loud,

unfamiliar, surprising, and complex is experienced as more arousing, whereas music that is slow, soft, familiar, simple, and predictable is experienced as less arousing. According to Berlyne, there is an inverted-U relationship between arousal potential and liking. Thus, music with an intermediate degree of arousal is liked best, while music with very high or very low arousal potential is disliked. It has also been proposed that mere repeated exposure to a stimulus (such as music) will increase liking (Zajonc, 1968). However, as familiarity is inversely associated with music's arousal potential, it could be expected that – once the level of optimal arousal potential has been reached – further repetitions would lead to a decline in liking. Indeed, empirical studies have provided evidence for both a positive and an inverted-U relationship between familiarity and liking (e.g., Hargreaves, 1986), showing that overexposure to a piece of music will eventually lead to a decrease in liking (Hunter & Schellenberg, 2011). This initial positive relationship between exposure and liking helps to illustrate how our musical environment shapes our music preferences. For example, when a new song gets played on the radio we may start liking it merely because of repeated exposure. However, repeated exposure might lead to a decline in liking once the peak level of preference has been reached.

North and Hargreaves (2008) have proposed distinguishing between objective and subjective complexity of music. Objective complexity can be viewed as a feature of the music itself, and is influenced by factors such as variability, predictability, and event density. However, subjective complexity refers to the degree of complexity perceived by the *listener*. Most importantly, this subjective complexity can be reduced through repeated exposure. Once a piece of music becomes familiar to a listener, it will appear more predictable and less surprising, and thus has less subjective arousal potential. According to this view, musical pieces with high objective complexity will require more repetitions in order to achieve an optimal arousal potential, while liking for pieces with low objective complexity will start to decrease already after a few repetitions (North & Hargreaves, 2008). Although there may indeed exist an interaction between music's complexity and familiarity with regard to liking and arousal potential, this relationship is probably more complex in real life. One significant feature of some of the most pleasurable experiences evoked by music (such as chills or shivers down the spine) is that they are typically elicited by familiar music. In fact, neuroimaging studies have shown that anticipation of the specific pleasure-evoking passages plays an important role in these responses (Salimpoor et

al., 2011). Interestingly, the musical passages that evoke pleasurable chills often contain a sudden or unexpected change, such as the entry of one or more instruments or voices, the return of a melody or theme, an abrupt change in tempo or rhythm, a new or unprepared harmony, abrupt modulation, or a sudden change of texture (Panksepp, 1995). In other words, pleasure-evoking musical passages are characterized by a sudden, significant change that the listener has learned to anticipate and predict through repeated listening. It has been hypothesized that – since accurate prediction is a beneficial ability from an evolutionary perspective – our brains may have developed special structures that reward accurate prediction (Huron, 2006). It may also be that familiarity and anticipation reduce the arousal potential of sudden and surprising musical events to an optimal level, leading to a pleasurable experience.

### **Factors affecting music preferences**

Although individual differences in music preferences have attracted research interest since the 1950's (e.g., Cattell & Saunders, 1954), the number of studies focused on the topic has increased rapidly during the last two decades. Understanding which factors contribute to music preferences – and how – can help us understand why different people enjoy listening to different kinds of music, and what kinds of psychological needs music helps to fulfil in people's daily lives. Music preferences are a complex phenomenon that emerges from an interaction between an individual's personality characteristics and their social and cultural environment. As described in the previous section, exposure and familiarity are important factors in determining our liking and disliking responses, and thus our musical environments and past listening experiences contribute significantly to the development of our music preferences. However, there is also an important social element to the process. Shared musical taste plays an important role in the membership of groups and subcultures, and adolescents in particular often use music as a 'badge' to communicate their values, attitudes, and opinions to others (e.g., North & Hargreaves, 2008). Individuals can also use music to reaffirm their own identity, selecting musical styles that reinforce their self-views or remind them of who they were at a certain moment in time (DeNora, 1999). Empirical work has shown that people often use their music preferences to communicate information about their personalities to strangers (Rentfrow & Gosling, 2006). Furthermore, it appears that music preferences do in fact communicate salient information about people's personalities to others, as observers

are surprisingly accurate in judging targets' personality traits based on their favourite music (Rentfrow & Gosling, 2006). But what are the overall correspondences between music preferences and personality traits, and how do they fit together with personality theory?

### *Personality*

Individuals differ from each other in terms of their characteristic patterns of thought, emotions, and behaviour. Personality traits – understood as dispositions to behave in a particular way in a range of situations – are one way of describing, conceptualizing, and measuring individual differences in human functioning. In everyday language, hundreds of trait descriptors such as shy, friendly, or assertive are used to describe an individual's personality. Based on the premise that the most salient individual differences will become encoded as single words in language, these types of everyday trait words have been used as the basis for constructing broader personality factors (e.g., McCrae & Costa, 1987). Different types of traits and trait structures have been suggested throughout the 20th century, but during the recent decades a consensus has emerged regarding the Five-Factor Model of personality (McCrae & Costa, 1987; also known as the 'Big Five', see e.g., John & Srivastava, 1999). The five broad personality factors included in the model are Extraversion, Neuroticism, Agreeableness, Conscientiousness, and Openness to Experience. Although not unreservedly accepted in the field of personality psychology, the five-factor structure of personality has been validated across cultures (e.g., McCrae & Costa, 1997a), and it has been estimated that 51% to 58% of the variation in the five traits is of genetic origin (Loehlin et al., 1998). However, the model's atheoretical, lexical origins may be seen as a weakness.

Extraversion can be defined as a tendency to be outgoing, sociable, assertive, energetic, and enthusiastic (John & Srivastava, 1999). In more biological approaches to personality traits (e.g., Eysenck, 1967), Extraversion is also associated with sensitivity to arousal and stimulation. Those scoring low in Extraversion (i.e., introverts) are thought to have a lower threshold for arousal than those scoring high, and to react with greater responsiveness to external stimulation (Eysenck, 1967). This also means that extraverts require a higher degree of stimulation in order to reach an optimal arousal level, while introverts perform better under lower stimulation. Indeed, empirical studies have reported findings that are consistent with this view,

demonstrating that compared to extraverts, introverts' performance on a reading comprehension task is more adversely affected by the presence of background music (Furnham & Strbac, 2002).

While Extraversion is commonly associated with positive emotionality, Neuroticism, on the other hand, is understood as the tendency to experience negative emotions such as anxiety, worry, and tension, and to be moody and emotionally unstable (John & Srivastava, 1999; Reizenzein & Weber, 2009). Extraversion and Neuroticism have also been associated with individual differences in emotion-related brain function: Neuroticism has been connected with heightened brain activity (at rest and in response to negative stimuli) in brain regions associated with negative affect, whereas Extraversion has been associated with brain activity (at rest and in response to positive stimuli) in brain regions that are important for reward and approach behavior (for a review, see DeYoung and Gray, 2009). In other words, people scoring high in Extraversion tend to experience positive emotions more often and more intensely, while people scoring high in Neuroticism are more prone to experience negative emotions.

Some of the other traits in the five-factor model have also been associated with certain emotion-related dispositions. Agreeableness, for example, is viewed as a prosocial trait related to kindness, tender-mindedness, trust, and modesty (John & Srivastava, 1999). Agreeableness has previously been associated with the motivation to control negative emotions in communication situations (Tobin et al., 2000), and a tendency to be less anger-prone (Kuppens, 2005). Conscientiousness is associated with task- and goal-directed behaviour such as planning and organizing, and highly conscientious people can be characterized as dependable, thorough, and efficient. However, no links have been established between Conscientiousness and emotional dispositions (e.g., Reizenzein & Weber, 2009). Finally, Openness to Experience can be defined as the tendency to be imaginative and curious, to have wide interests, and to appreciate arts and aesthetic experiences (John & Srivastava, 1999). Indeed, people scoring high on Openness to Experience tend to be more sensitive to aesthetic emotions, and they experience more "chills" or "shivers down the spine" in response to aesthetic stimuli such as music (McCrae, 2007; Nusbaum & Silvia, 2011).

*Other traits*

In addition to the more ‘global’ approach to individual differences represented by the five-factor model of personality, other, more specific traits such as Empathy and Absorption have also been investigated in the context of music preferences. Trait Empathy is often characterized as a multidimensional construct comprising both affective and cognitive components. In its broadest sense, Trait Empathy can be described as an individual’s general responsiveness to the observed experiences of others, involving both perspective-taking capabilities/tendencies and emotional reactivity (see e.g., Davis, 1980). A specific component of trait empathy – *Fantasy* (one of the four subscales in the *Interpersonal Reactivity Index*; Davis, 1980) – reflects empathic engagement in fictional contexts, and may also be associated with sensitivity to certain music-induced emotions (Vuoskoski et al., 2012). Another trait that has been associated with more intense emotional responses to music (Kreutz et al., 2008) is Absorption; a trait characterized by the tendency to fantasize, become absorbed in one’s mental imagery, and – like those scoring high in Openness to Experience – appreciate aesthetic experiences (Tellegen & Atkinson, 1974). Due to their aesthetic, emotional, and sensory relevance, the aforementioned traits have also been of significant interest to researchers seeking to understand and explain individual differences in music preferences.

### **Explaining individual differences in music preferences**

The following section will outline findings from studies that have investigated the contribution of personality dispositions – the *Big Five* traits as well as Trait Empathy and Absorption – to music preferences. These studies are grouped in terms of their approach to music preferences: 1. Genre-based approaches; 2. Emotion-focused approaches; and 3. Functional approaches. Genre-based approaches refer to studies that have characterized and measured people’s music preferences in terms of liking for specific genre categories. Emotion-focused approaches, on the other hand, comprise studies that have categorized musical examples with regard to the emotional tone conveyed by the music. Finally, Functional approaches concern studies where music preferences have been examined with regard to the function that the music is used for.

#### *Genre-based approaches*

Musical genres seem like practical units of analysis when studying music preferences, since people often define and describe their musical taste in terms of preference for specific genres. Studies investigating the connection between genre preferences and personality traits have typically adopted one of two main approaches to measuring genre preferences: Asking people to rate their liking for a selection of music excerpts representing different genres, or simply asking people to indicate their liking for a list of musical genres. The former approach has the limitation that a limited number of musical examples chosen by researchers are considered representative of entire genres or musical styles, whereas the latter approach is constrained by the fact that the definition of genres is subjective and changes over time. Furthermore, it may be difficult to determine the extent to which self-reported music genre preferences are related to the intrinsic properties of particular styles of music, or whether these types of ratings are more strongly affected by the social connotations that are attached to specific genres (cf. Rentfrow & Gosling, 2007). However, both types of studies have yielded converging evidence, indicating that people are drawn to musical styles that are congruent with their personality traits.

Using a questionnaire-based measure of music genre preferences, the Short Test of Music Preferences, Rentfrow and Gosling (2003) carried out one of the first large-scale investigations (3000+ participants across several studies) on the associations between personality traits and genre preferences. They found that the structure of music preferences (for 14 genres) could be described in terms of four underlying factors: Reflective & Complex (including blues, jazz, and classical), Intense & Rebellious (rock, heavy metal, and alternative), Upbeat & Conventional (e.g., pop, soundtrack, and country), and Energetic & Rhythmic (rap/hip-hop, soul/funk, and electronica/dance). Across two different samples, several statistically significant correlations emerged between the Big Five personality traits and the four music preference factors. Extraversion was positively associated with preference for Upbeat & Conventional and Energetic & Rhythmic music styles, while Openness to Experience was positively associated with preference for Reflective & Complex and Intense & Rebellious music styles. Both Conscientiousness and Agreeableness were positively correlated with liking for Upbeat & Conventional music styles, but no consistent correlations emerged with regard to Neuroticism. This pattern of correlations is in line with the idea that people tend to prefer and select music that reflects their personalities. For example, extraverts – who are active, outgoing, and



tend to experience positive emotions – are drawn to music that reflects and reinforces these characteristics (i.e., Energetic & Rhythmic and Upbeat & Conventional musical styles). Similarly, those scoring high in Openness to Experience – who are curious and value arts and new experiences – tend to appreciate music that satisfies their curiosity and appetite for novelty and strong aesthetic experiences (i.e., Reflective & Complex and Intense & Rebellious music styles).

The broader factor structure underlying music genre preferences suggests that individual differences in music preferences may be better explained by more fundamental features of music – such as its acoustic and emotional characteristics – rather than the rather fuzzy and variable genre categories. Indeed, Rentfrow and Gosling (2003) touch upon this possibility, and explore it in more detail in their later work (Rentfrow, Goldberg, & Levitin, 2011; Greenberg et al., 2015). In a 2011 study, Rentfrow, Goldberg, and Levitin asked participants to rate their liking for 146 unfamiliar music excerpts (using different subsets in different experiments) representing 26 different genres and subgenres. The authors also asked a group of musically untrained judges to rate the 146 music examples in terms of music-specific (e.g., distorted, fast, and percussive) and psychologically/emotionally oriented (e.g., aggressive, inspiring, and sad) attributes. Across three different experiments, the underlying structure of music preferences was best represented by five factors: Mellow/relaxing, Urban/danceable, Sophisticated/aesthetic, Intense/aggressive, and Campestral/sincere (forming the acronym ‘MUSIC’). Using multiple hierarchical regression analyses, the authors tested whether a musical piece’s loadings on the five MUSIC factors were more strongly related to its genre, or its attributes (as rated by the judges). They found that both genres and attributes contributed significantly to the MUSIC factor loadings, suggesting that music preferences are influenced by specific auditory and emotional features as well as the social connotations of music.

### *Emotion-focused approaches*

Since emotional dispositions are so central to many of the Big Five traits as well as trait empathy, approaching individual differences in music preferences from an emotion-focused angle may shed more light on the associations between personality traits and music genre preferences. Using 50 short film music excerpts representing different discrete emotions (happiness, sadness, fear, anger, and tenderness) Vuoskoski and Eerola (2011) investigated whether listeners’ personality traits were

associated with their preference for excerpts expressing particular emotions. They found that the pattern of correlations between preference ratings and personality traits reflected the emotion-related dispositions inherent in the different traits: Extraversion was positively associated with liking for happy-sounding music, while Openness to Experience was positively correlated with preference for sad- and fearful-sounding music. Furthermore, Agreeableness was positively associated with liking for happy- and tender-sounding music, and negatively with liking for angry- and fearful-sounding music. Similar findings have also been obtained in studies using musical stimuli from different genres, suggesting that there may indeed be an association between Extraversion and liking for happy-sounding music (e.g., Chamorro-Premuzic, Fagan, & Furnham, 2010) as well as between Openness to Experience and liking for sad-sounding music (Ladinig & Schellenberg, 2011; Vuoskoski, Thompson, McIlwain, & Eerola, 2012).

Other traits that have consistently been associated with liking for sad-sounding music include Absorption (Garrido & Schubert, 2011, 2013) and Trait Empathy (Garrido & Schubert, 2011; Vuoskoski et al., 2012). Using excerpts of film music as stimuli, Vuoskoski and colleagues (2012) discovered that trait empathy (especially the Fantasy and Empathic Concern –subscales of the Interpersonal Reactivity Index; Davis, 1980) was positively correlated with liking for sad- and tender-sounding excerpts (but not with liking for happy- or scary-sounding excerpts). Later work has provided support for these findings using more diverse musical material: Building on the work of Rentfrow, Goldberg and Levitin (2011), Greenberg and colleagues (2015) investigated the extent to which Trait Empathy was associated with preference scores for the five broad MUSIC factors. They discovered that Trait Empathy was positively associated with preference for Mellow/relaxing music, and negatively with preference for Intense/aggressive music. These findings were replicated across three different samples using different musical materials (mixed genres and rock music). When they explored the underlying emotional attributes in more detail, they found that those with high Trait Empathy particularly liked music that was tender, reflective, and sad. This pattern of correlations suggests that - as empathic people have a stronger tendency to empathize with those undergoing negative emotions and to experience sympathy and concern (e.g., Davis, 1980) - empathic people may be more open to engage and empathize with sad-sounding music, and more likely to resonate with music expressing warm, compassionate feelings such as tenderness. Furthermore, since

Openness to Experience and Absorption have also been consistently associated with liking for sad-sounding music, it appears that enjoyment of sad music may be related to aesthetic appreciation as well as emotional engagement.

### *Functional approaches*

Music listening occurs in many different situations and contexts, and several studies have shown that music has the ability to fulfill a wide variety of functions in everyday life (e.g., North et al., 2004; Sloboda, O'Neill, & Ivaldi, 2001). As different personality traits are associated with different psychological needs to varying degrees, it is not surprising that people with different personalities also tend to use music for different functions and in different situations (Chamorro-Premuzic & Furnham, 2007; Chamorro-Premuzic et al., 2009, 2010; Johansson, Vuoskoski, & Eerola, submitted). Moreover, certain types of music are more suited than others for particular uses. Thus, one potentially fruitful method to tackle individual differences in music preferences is to approach the phenomenon from the perspective of the different uses and functions afforded by different types of music.

Chamorro-Premuzic and colleagues (2009) investigated the potential connections between personality traits and different uses of music. They assessed music use in terms of three broad factors – Emotional, Cognitive and Background – which were determined using the ‘Uses of Music Inventory’ (UMI), a 15-item self-report measure specifically designed for a previous study (Chamorro-Premuzic & Furnham, 2007). Their questionnaire data from 245 respondents showed that Cognitive (i.e., intellectual and rational) use of music was related to Openness to Experience, while Emotional use of music was positively associated with Neuroticism and Extraversion. Extraversion was also associated with Background/social uses of music. Although these findings are in line with predictions arising from personality theory, it should be noted that many of the items in the UMI appear to measure music-related attitudes and reactions rather than actual music use.

In a later follow-up study, Chamorro-Premuzic and colleagues (2010) replicated their earlier findings, and extended them to encompass music preferences. They found that Background use of music was positively associated with preference for ‘social’ and happy music, while Emotional use was positively associated with liking for sad music. Furthermore, they discovered that while personality traits such as Extraversion and Openness to Experience were directly associated with liking for

happy and complex music (respectively), the relationship between personality and music preferences was also mediated by the different music uses. Similar findings were also obtained by Johansson and colleagues (submitted), who explored the relationships between personality traits, music genre preferences, and the use of music for different functions and in different situations. They found that Extraversion was associated with a variety of different uses, but most notably with background uses and mood enhancement. Moreover, Openness to Experience was strongly associated with the use of music for aesthetic experiences and self-expression. Similarly to Chamorro-Premuzic and colleagues (2010), they also found that music uses were associated with music preferences, and that personality contributed to music preferences both directly and via music uses. For example, the relationship between Openness to Experience and preference for intense music styles (e.g., heavy, alternative, and soundtrack) was modulated by the use of music for aesthetic experiences and self-expression.

The finding that Extraversion appears to be associated with background use of music is in line with theoretical notions that people with high Extraversion should prefer environments with a higher degree of sensory stimulation (see e.g. Eysenck, 1967), as well as with empirical findings showing that extraverts perform well in tasks such as reading comprehension in the presence background music (Daoussis & McKelvie, 1986; Furham & Strbac, 2002). Considering that music is rarely the primary focus of listeners' attention, it seems likely that extroverts – who have been shown to prefer states of greater sensory stimulation – might use music to maintain an optimal level of arousal while carrying out other activities.

Finally, there is experimental evidence suggesting that the relationship between familiarity/exposure and liking might depend on certain personality traits. Previous work has shown that there typically exists an inverted U-relationship between music's arousal potential and liking, and that this arousal potential is influenced by music's familiarity/novelty and complexity (see e.g., North & Hargreaves, 2008). Interestingly, those scoring high in Openness to Experience tend to appreciate novelty, and are more tolerant of ambiguity (McCrae & Costa, 1997b; McCrae, 2007). Thus, it may be that this trait may modulate the relationship between novelty, arousal potential, and liking also in the context of music listening. Indeed, Hunter and Schellenberg (2011) obtained support for this notion, demonstrating that Openness to Experience moderated the effect of exposure on liking ratings. High Openness to Experience was associated with higher liking ratings for novel music,

while low Openness to Experience was associated with higher liking ratings for over-exposed music. These findings may also explain why high Openness to Experience has been consistently associated with preference for diverse and complex music styles (i.e., music characterized by higher novelty and arousal potential).

## **Conclusion**

The body of research reviewed in this chapter shows that people's personality traits are consistently reflected in their music preferences – regardless whether they are characterised in terms of genres or emotional attributes. However, it seems that – beyond the associations between specific personality traits and music genre preferences – lies a pattern of correspondences between particular psychological needs and the types of uses afforded by different kinds of music. Nevertheless, it should be emphasized that our personality traits do not directly determine the types of music that we like; rather, our music preferences are the product of a complex interaction between our individual characteristics, musical experiences, and cultural and social environments.

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