Personality and self-reported preference for music genres and attributes in a German-speaking sample

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ABSTRACT

Research of music preferences yielded consistent results about the relationship of music preference, biographic variables, and personality. This study replicates some of these findings in a German-speaking sample ($N = 1329$). We conducted an online study using self-report assessments. We confirmed the five-factor structure of music genre preference and the three-factor structure of music attribute preference using EFA and CFA. In addition to previous research, we showed that the three-factor structure of music attribute preference is also replicated in self-reported assessments. We examined the relationships of personality and music preferences using SEM. This study contributes to the overall picture of music preference research and provides additional insights into the little-examined field of the relationship of music attribute preference and personality.

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1. Introduction

In the last two decades, research on music preference yielded a consistent view on how music styles relate to one another, and how our liking of music relates to our personality. Most of the studies measured preference for music genres and related them to various personality constructs. For instance, Sensation Seeking was found to be linked to liking of Rock, Punk and Heavy Metal music (Litle & Zuckerman, 1986). People scoring high in Openness were likely to enjoy a variety of non-mainstream music (Dollinger, 1993), and extraverts showed preference for pop music (Dollinger, 1993; Rawlings & Ciancarelli, 1997; Rentfrow & Gosling, 2003).

Music preference is commonly assessed as either music *genre* preference or music *attribute* preference. Music genre preference measures the liking of specific musical styles (e.g. Rock, Pop, or Jazz), whereas music attribute preference measures the preference for music with certain psychological or sonic features (e.g. fast, slow, happy, or relaxing).

Assessment of music preference is usually performed via self-report or excerpt-based assessment. In the first case, the subjects report their preference for specific musical styles or attributes, usually on a Likert scale. In the latter case, the subjects listen to several audio excerpts and rate their preference for each of the excerpts. In terms of music *genre* preference, the excerpts reflect a specific genre and preference for the excerpts is used as a proxy measure for determining the preference of the concerning genre (e.g. Rentfrow, Goldberg, & Levitin, 2011; Rentfrow et al., 2012). In terms of music *attribute* preference, the excerpts are rated by experts on certain psychological and sonic features. Preference for the excerpts can then be used to calculate the preference for the corresponding attributes (e.g. Greenberg et al., 2016).

There are different models for measuring music genre preference. Most researchers assume four to five factors. The prevailing factor structure is the MUSIC model, consisting of the five factors *Mellow*, *Unpretentious*, *Sophisticated*, *Intense* and *Contemporary* (Rentfrow et al., 2011). The factor structure of music attribute preference has recently been examined by Greenberg and colleagues (Greenberg et al., 2016), who found a three factor structure consisting of the factors *Arousal*, *Depth* and *Valence*.

Both kinds of music preference have been related to biographic variables and various personality constructs. A significant amount of research has been contributed by a small set of researchers. Even though most studies are of high quality, replications of the results can confirm the findings and contribute to a more thorough understanding. Also, most studies used English-speaking samples. A comparison of results between different cultures leads to interesting insights, regarding both the similarities and the differences.

In this study, we aim to replicate some of the findings about the relationship of music preference with age, gender and personality.

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We seek to confirm the factor structure of both the self-reported music genre and the attribute preference in a German sample. Since music *attribute* preference factors have only been reported for excerpt-based assessment, we thereby examine the robustness of the factor structure across assessment methods.

1.1. Music genre preference

Before the 2000s, assessments of music preference differed greatly between researchers. In 2003, Rentfrow and colleagues therefore developed the Short Test Of Music Preference (STOMP), which assesses preference for 14 music styles on four music preference factors: *Reflective* & *Complex* (R&C), *Intense* & *Rebellious* (I&R), *Upbeat* & *Conventional* (U&C) and *Energetic* & *Rhythmic* (E&R) (Rentfrow & Gosling, 2003).

The STOMP measures preference for music using self-reported ratings of music genres. Its four-factor structure has been confirmed in various subsequent studies (e.g. Zweigenhaft, 2008). Langmeyer, Guglhör-Rudan, and Tarnai (2012) also confirmed the factor structure using excerpt-based assessment. The authors also reported a good fit of the liking of the samples and the self-reported liking of the respective music genres, indicating robustness across assessment methods (Langmeyer et al., 2012). Nevertheless, the assessment of music genre preference via self-report comes with some challenges. For instance, self-report assumes that the subjects have sufficient knowledge of musical styles and can adequately differentiate between them (Rentfrow et al., 2011). Participants of different generations might have different perceptions of musical genres and could be unfamiliar with styles enjoyed by other generations (Rentfrow et al., 2011). Use of excerpt-based assessment can overcome these issues, as the participant is not required to have any kind of knowledge of the musical genre, but only has to rate his liking of the music he currently hears.

In 2011, Rentfrow and colleagues compiled a pool of carefully selected songs, which covered the essentials of a previously compiled set of 26 genres. The songs met music industry production standards and were unknown to most people to avoid confounded preference ratings through idiosyncratic memories (Rentfrow et al., 2011). Analysis of the preference ratings of 706 participants revealed a five-factor structure of music preference: Mellow, Unpretentious, Sophisticated, Intense and Contemporary (*MUSIC*) (Rentfrow et al., 2011). Again, the factor structure could be confirmed in subsequent studies (Rentfrow et al., 2012).

In a large cohort study of over 250,000 participants, a factor analysis of the revised STOMP-R (now including 23 genres) revealed the same five-factor structure (Bonneville-Roussy, Rentfrow, Xu, & Potter, 2013). The five-factor model of music genre preference is thus found in both self-report and excerpt-based assessment.

The four-factor structure of the STOMP has previously been confirmed in a German sample (Langmeyer et al., 2012). To our knowledge, the five-factor structure of the STOMP-*R* has not yet been replicated in a German sample. Our study aims to fill this gap. We then try to replicate the biographic and personality correlations with music genre preference found by Bonneville-Roussy et al. (2013).

1.2. Music attribute preference

The STOMP and previous instruments measure preference for specific genres. Both self-reported and excerpt-based assessments encounter the problem that music genres are often not well-defined and distinct from each other, but rather overlapping. Also, genres can be considered in various degrees of granularity. Some music genres, such as *Pop* or *Rock*, are very broad and cover many subgenres. Pop for instance could include Beat, Disco and modern

R&B music (among others), as each of these styles has been very popular and successful at some time during the last 70 years of music history. By combining all these different styles into one broad genre, we lose a lot of information about the specific music preferences of the participants. However, increasing the granularity of the assessment and including too many subgenres bloats the assessment and requires even more specific domain knowledge for both researchers and participants (see also Rentfrow et al., 2011).

One way to overcome these constraints is to assess the preference for music attributes. Music attributes describe sonic and psychological characteristics of musical pieces. A song can thus be not only categorized by its genre, but further by its features, such as fast, slow, happy or relaxing. Since music attributes are much less dependent on conventions and definitions, preference for them can be compared between different generations and cultures.

Even though the MUSIC model emerged from the analysis of music genre preferences, it has been shown to replicate within genres (Rentfrow et al., 2012). Its dimensions can thus be thought of as musical attributes of lower granularity. By increasing the degree of granularity, we gain a more detailed picture of one's musical preferences.

Music attributes have been examined in previous research. Rentfrow and Gosling (2003) rated songs on 25 different attributes to gain insights into the composition of the music preference factors. In 2011, Rentfrow and colleagues rated music excerpts on 14 sonic and psychological attributes and showed that much of the variance of music genre preference could be attributed to the liking of musical features. In follow-up studies, the list of attributes has been enhanced, and a differentiated picture of the relationship of music attributes and music genre preference emerged (Rentfrow et al., 2012).

However, both the factor structure of music attribute preference and its relationship with personality have only been addressed in recent research. Greenberg et al. (2016) had subjects rate 102 song excerpts on 38 attributes. They found a three-factor structure, namely Arousal (e.g. *tense, strong, warm*), Depth (e.g. *sophisticated, relaxing, party music*) and Valence (e.g. *joyful, lively, sad*) (Greenberg et al., 2016). In a subsequent study, participants rated their preference for each of the excerpts. These results were then used to calculate a subject's preference for specific music attributes and relate them to the Big Five personality domains and their facets (Greenberg et al., 2016).

This study aims to confirm the three-factor structure and the relationships with the personality domains, thereby replicating the findings of Greenberg et al. (2016). By using self-reported music attribute preference, we extend these findings to another method of assessment. Even though we eliminate the need to rate the music excerpts, it should be noted that the self-reported preference for music attributes might contain similar limitations or biases as those for the self-reported genre preference.

1.3. Cultural differences

Most studies about music preference examined English-speaking samples. For instance, the genre list from which the MUSIC model was derived was constructed using data from participants who were recruited via English-speaking internet sites, such as craigslist.org (Rentfrow et al., 2011). Accordingly, the Unpretentious factor consisted mostly of different flavors of country music, such as *Country Rock*, *New Country*, *Mainstream Country* and *Bluegrass*. Although popular in the US, these genres are not commonly listened to in many European countries, such as Germany.

Rentfrow et al. (2012) showed that the five-factor structure is also found within genres. Delsing, Ter Bogt, Engels, and Meeus (2008) examined a Dutch sample of adolescents and found a sim-