The complexity of music: An examination of the relationship between personality and music preference

Chris Buchholz, Lauren Mutispaugh, Julie Recher, & Matthew Sullivan
Roanoke College

Abstract

Pop songs tend to have fairly simple melodic structures, rhythms, and lyrics. While there is a broad appeal to simple songs, many individuals prefer more complex music such as jazz and classical. The following study examines the relationship between music preference and several measures of cognitive ability (e.g., need for cognition & working memory span). The preference for complex music was hypothesized to be significantly correlated with openness, need for cognition, and working memory span.

Hypotheses

Pop songs tend to have fairly simple melodic structures, rhythms, and lyrics. While there is a broad appeal to simple songs, many individuals prefer more complex music such as jazz and classical. The following study examined the relationship between music preference and several measures of cognitive ability (e.g., need for cognition & working memory span). The preference for complex music was hypothesized to be significantly correlated with measures of cognitive complexity (e.g., openness, need for cognition, and working memory span).

Introduction

There can be an almost formulaic approach to songwriting that can result in an immediately catchy pop song. Arguably, many pop songs are simple songs. Pop songs tend to have fairly simple melodic structures, rhythms, and lyrics. These components of music are often repetitive, allowing the listener to quickly and easily synchronize to the music. In other words, simple songs are easy to follow and repetitive, allowing the listener to quickly and easily synchronize to the music. In other words, simple songs are easy to follow and provided that they are, typically, no longer appealing to most adults. As we grow older, we tend to prefer songs that are a bit richer in complexity. While there is a broad appeal to simple songs, there seems to be an optimal level of complexity that creates interest in a song. Furthermore, this optimal level of complexity appears to vary across individuals. In other words, some of us prefer more complex music such as jazz and classical, while others prefer popular music (e.g., Britney Spears and Justin Timberlake). There are several personality factors that may be able to predict this individual variation in music preference.

Previous research has demonstrated that there is a link between cognitive ability and preference for aesthetically complex or simple stimuli (Barron, 1955; Frances, 1976; Kammann, 1966; as cited in Rentfrow & Gosling, 2003). Therefore, it is possible that measures of cognitive ability, such as need for cognition and working memory span, are predictive of an individual’s preference for complex or simple music.

Methods

In order to examine the relationship between personality and music complexity, the following study employed Rentfrow and Gosling’s (2003) Short Test of Music Preference (STOMP), in addition to several standard personality and cognitive measures. These included a short version of the Big Five Inventory (Gosling, Rentfrow, & Swann, 2003), need for cognition (Cacioppo, Petty, Feinstein, & Jarvis, 1996), and a working memory span test adapted from the work of Whitney, Ritchie, and Clark (1901).

In order to assess an individual’s desired level of music complexity, we developed a 10-item Likert-type scale that included questions such as “I prefer music that is more complex in nature”. “Most of the music I listen to has many different instruments and parts”, and “I prefer music that is rhythmic and uncomplicated.” In our sample of 124 college students attending a small liberal arts college, there was a clear preference for complex music (Mcomplex = 4.69, SD = 0.36). After reverse coding the complex music preference items, nine of the ten original items were found to have high intercorrelations, therefore, we created a composite score of complex music preference (alpha = .80).

Results

In our sample of college students attending a small liberal arts college, there was a clear preference for complex music (Mcomplex = 4.69, SD = 0.30; Msimple = 3.35, SD = 0.79). After reverse coding the simple music preference items, nine of the ten original items were found to have high intercorrelations, therefore, we created a composite score of simple music preference (alpha = .80).

As hypothesized, complex music preference was positively correlated with the global STOMP categories of reflective complex (r = 0.67, p < .001) as well as openness and extraversion (r = .30, p < .01). Also, complex music preference was positively correlated with several specific STOMP categories (classical r = .41, p < .01. R&B & Rap r = .28, p < .01, Alternative r = .25, p < .01), rock (r = .20, p < .02), and heavy metal (r = .29, p < .01).

Discussion

Overall, the results of this study indicate a strong relationship between a preference for complex music and cognitive ability (working memory span) as well as a need to exercise that cognitive ability (need for cognition & working memory span). Not only does this research add to our understanding of music preference and cognition, but it also opens the way for future research that may unlock the complex interactions between the human cognitive system and various complex stimuli. Research in complex systems suggests that the human world is a dance between our own complex system (the mind) and stimuli that exhibit complex patterns (other individuals, music, literature, theatre, etc.). Ultimately, this “dance” is regulated and reinforced through emotional feedback. Research examining emotions suggests that emotions are created by change or uncertainty. Furthermore, personality research indicates that there are individual differences in the level of uncertainty one is willing to endure (i.e., need for cognition and openness to experience). Thus, the emotions we experience are directly tied to the level of predictability we seek in stimuli. In terms of complex systems theory, our complex system (the mind) seeks to interact with stimuli that exhibit complex patterns that are optimal for our need for predictability complexity. It is possible that what draws us to certain music is the right mix of predictability and novelty. Songs with simple catchy patterns are easy to like, but we just as easily fall out of love with the pop song of the week. The songs that tend to stand the test of time often include some level of complexity that keeps surprising us.

We believe that future research will show that this theory can be used to explain our emotional experience of other complex stimuli such as our appreciation of literature, comedy, theatre, cinema, and a good friend.

References