Tough times, meaningful music, mature performers: popular Billboard *songs and performer preferences across social and economic conditions in the USA*

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ABSTRACT The *Billboard* number 1 songs for each year from 1955 to 2003 were investigated across changes in US social and economic conditions. Study 1 investigated song characteristics and ratings and found that when social and economic times were relatively threatening, songs that were longer in duration, more meaningful in content, more comforting, more romantic, and slower were most popular. Study 2 explored popular performer facial feature characteristics and found that performers with more mature facial features, including smaller eyes, thinner faces, and larger chins, were popular during relatively threatening social and economic conditions. These facial feature preferences were more pronounced with the onset of music television in the 1980s. Results of the two studies are explained within the context of the Environmental Security Hypothesis.

KEYWORDS: Billboard *charts, music preferences, Environmental Security Hypothesis, facial features, performer characteristics*

> Tough times demand tough talk, demand tough hearts, demand tough songs. (Neil Peart and Pye Dubois of the band Rush, 'Force Ten', 1987)

Whether driving in the car, performing household chores, shopping at the grocery store, exercising at the gym, eating dinner at a restaurant, or waiting in a doctor's office, music is present. Music is the central attraction in a wide host of social institutions, such as parties, weddings, and holiday celebrations. College students around the world walk from class to class listening to their latest music downloads on their iPods, cell phones, and other mp3 devices. According to Media Info Center (2005), adults over the age of 18 spend an average of nearly 21 hours a week listening to the radio. As culturally pervasive as music is, one aspect of music that has only recently become a focus of social psychological research explores what kind of information

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about individuals' opinions, social identities, and personalities is revealed by their music preferences (North & Hargreaves, 1999; Rentfrow & Gosling, 2003). Specifically, why are certain types of music and performers preferred at certain times? The current set of studies suggests that such preferences for different types of songs and performers may be related to the social and economic climate of the times.

Music as social identity

There is some research indicating that certain characteristics of individuals' personality can affect their music preferences. For example, individuals who are classified as sensation seekers tend to prefer rock, heavy metal, and punk music as opposed to soundtrack and religious-type music (Little & Zuckerman, 1986). Other research has indicated a relationship between the personality dimensions of extraversion and psychoticism and preferences for music with exaggerated bass, such as rap and dance music (McCown, Keiser, Mulhearn, & Williamson, 1997). Recent research (North & Hargreaves, 2007a, 2007b, 2007c) has even found relations between musical preferences of people from the UK and their interpersonal relationships, lifestyle, living arrangements, beliefs, crime, travel, education, health, and political views.

There also appears to be some evidence for a relationship between individuals' preferences for music, arousal, personality, and identity. For example, fans of heavy metal music tend to have a higher level of resting arousal than country music fans (Gowensmith & Bloom, 1997). Integrating personality and physiology research, McNamara and Ballard (1999) found that preferences for highly arousing music (heavy metal, rock, alternative, and rap) are positively related to resting arousal, sensation seeking, and antisocial personality. Adding to this expanding body of music-related research, North and Hargreaves (1999) investigated the characteristics of the typical rap and pop music fan and found evidence that people use music as a 'badge' to communicate their values, attitudes, and self-views. This music-as-identity relationship has been further supported by Knobloch and Mundorf (2003) who found that music preferences, including music television, are actually a tool for communicating and expressing one's identity.

Rentfrow and Gosling (2003) have helped to further organize and consolidate social psychology's understanding of the relation between personality and music preferences, as well as some of the utilitarian properties of listening to music. These researchers found that along with knowledge of individuals' hobbies and their bedroom environments, music preferences were believed to reveal a great deal of information about the participants' personal qualities. Peoples' preferences for music were second only to hobbies in revealing information about the personalities of others, ranking above book and magazine preferences. Beyond providing diagnostic information about characteristics of the listener, music can also play a role in self-regulatory processes. For example, individuals select music from domains consistent with their current mood (Knobloch & Zillmann, 2002; North & Hargreaves, 1996), such that an individual who is feeling cheerful might listen to jazz music that is lively, but listen to blues music when he or she feels sad. As further demonstration of how circumstances dictate musical preferences, Williams and Pettijohn (2008) found that when students think about summertime, they prefer music that is energetic and rhythmic and when students think about wintertime, they prefer music that is reflective and

complex. Collectively, this research suggests that music serves a rather utilitarian function for listeners by allowing for the expression of social identities and aiding in the regulation of emotions through these musical selections.

Media preferences and social reality

Acknowledging music's seemingly intrinsic relationship to individuals' social identity, as well as its role in the regulation of a variety of transitory affective states, it is plausible that music preferences might also be a reflection of, or reaction to, more general social and economic conditions capable of affecting longer-term feelings of security. A similar relationship has been found between socioeconomic conditions and television program viewing preferences (McIntosh, Schweigler, & Terry-Murray, 2000). Specifically, researchers rated the top 20 television shows, according to Neilson Ratings, on dimensions of meaningfulness of content, realism of characters and complexity of plot, and compared this to characteristics of societal threat, including increases in unemployment, consumer price index, prime interest rate, bombings, crime, work stoppages, suicide, homicide, and divorce (McIntosh et al., 2000). They found that during times of societal threat, individuals chose to watch television shows that were both meaningful and confronted serious issues.

Because people are regularly exposed to a variety of popular media, television may only be one of several forms of such media capable of acting as an outlet for attitudes toward current socioeconomic conditions. As such, the current research intends to determine whether this relationship is consistent when popular music is analyzed, specifically the number 1 song for each year from 1955 to 2003, according to the US *Billboard Top 100* chart system. Initial support for this relationship has been found in previous investigations of musical preferences and socioeconomic influences. Schwartz and Fouts (2003) found that adolescents prefer listening to personality congruent music as well as music that relates to the developmental issues with which they are dealing. Similarly, Stack and colleagues have conducted several studies on the relationship between suicide acceptability and musical tastes on a cultural level for opera (Stack, 2002), blues (Stack, 2000), heavy metal (Stack, Gundlach, & Reeves, 1994; Stack, 1998) and country music (Stack & Gundlach, 1992). Zullow (1991) performed a content analysis of the top 40 US songs of each year from 1955 to 1989 for rumination about bad events and pessimistic explanatory style. Measures of depressive psychological traits in popular songs were related to rumination about bad events covered in *Time* magazine, pessimism about the economy, consumer optimism and gross national product growth. Building on these prior investigations, the current study intended to explore a wider range of social and economic influences on a greater variety of song, as well as performer, preference characteristics to advance our understanding of general music preferences.

In a previous investigation, Pettijohn and Sacco (2008) found that popular *Billboard* song lyrics with more words per sentence, a focus on the future and greater mention of social processes and intergroup themes were popular during threatening social and economic conditions. This study also found non-statistically significant trends for more meaningful, comforting and romantic songs in more threatening social and economic times. This initial research focused on a lyrical analysis of songs

only. The current study will extend these previous findings by considering how the addition of the music affects ratings of popular US *Billboard* songs.

Environmental conditions and musician characteristics

Beyond the basic auditory stimulation and lyrical content of music, the pervasiveness of digital media and music television, such as MTV (Music Television) and BET (Black Entertainment Television), seems to create a strong association between the characteristics of the song and the performer. Thus, social and economic conditions may influence not just preferences for the content of songs, but preferences for performers with certain characteristics as well. There is a growing body of research that has found evidence of a relationship between social and economic threat and facial and body feature preferences. Specifically, Pettijohn and colleagues (Pettijohn & Jungeberg, 2004; Pettijohn & Tesser, 1999, 2005) have found archival and experimental evidence for the Environmental Security Hypothesis (ESH) across several investigations. When conditions are threatening and uncertain, people show a preference for others with more mature features, such as smaller eyes, larger chins, thinner cheeks and a larger body build. However, when social and economic times are prosperous, people prefer others with more neotenous characteristics, such as larger eyes, smaller chins, rounder faces, and smaller body builds. Pettijohn and his colleagues found these patterns with regard to American movie actresses (Pettijohn & Tesser, 1999), *Playboy* Playmates (Pettijohn & Jungeberg, 2004) and in the laboratory where male and female participants showed a preference to work with a female partner who had smaller eyes over a partner with larger eyes in high threat conditions (Pettijohn & Tesser, 2005). The facial feature preferences for males, however, have been more variable and less systematic (Pettijohn & Tesser, 2003).

Song and performer preferences: the Environmental Security Hypothesis

The current studies argue that preferences for certain songs and musicians can be best understood in the context of the ESH. The ESH is represented by a combination of evolutionary and ecological theory (Buss, 1994; Cunningham, 1986; McArthur & Baron, 1983). The ESH uses the foundation of evolutionary theory and then adjusts its predictions based on historical and cultural variations, providing a context-dependent theory of social preferences. Our perceptions of environmental security influence our social preferences and what we find most desirable during different social and economic conditions. Uncertain and threatening times cause people to consider their safety and security, leading them to adjust their preferences and make decisions that are more adaptive. More meaningful, mature themes and items should be preferred during these difficult situations to help mitigate the threat and uncertainty. When times are more certain and less threatening, themes and items related to meaning and maturity should be less necessary; therefore themes and items related to fun, celebration and expression of carefree attitudes should be preferred. This general pattern of preferences may help explain the popularity of music and artists across changing social and economic conditions.

The ESH has been used to explain appearance-related preferences in past investigations, and may be useful in examining appearance-based preferences for musical artists. According to evolutionary theory, preferences for specific facial and body features are signals of reproductive success (Buss, 1994). Past studies have found evidence of the importance of neonatal features in determining female attractiveness and because such evidence has been found cross-culturally, this preference is most likely rooted in our evolutionary past (Cunningham, Roberts, Barbee, Druen, & Wu, 1995; Jones, 1995; Zebrowitz, 1997). The ESH posits that within these evolutionary preference findings, the specifics of attractiveness may depend, at least partially, on how secure or insecure individuals feel about their surroundings and variability on this dimension may help to explain the variability within such evolutionary criterion across time. Mature facial features, such as smaller eye size, thinner cheeks and larger chins elicit greater attributions of strength, independence and control (Keating, Mazur, & Segall, 1981) and such characteristics should be considered more desirable when social and economic times are uncertain and unstable, compared to when times are more secure. When social and economic conditions are good, individuals prefer others whose facial features are less characteristically mature, such as individuals with larger eyes and smaller chins (e.g., Pettijohn & Tesser, 1999). Neonatal features are associated with a greater sense of playfulness and there is less emphasis on a need for mature characteristics during good times. However, physical appearance dimensions tend to be weighed more heavily when evaluating women compared to when men are evaluated (e.g., Berscheid & Reis, 1998). These differences are also consistent with evolutionary mate selection theories (Buss, 1994), and may explain why the most evidence for the ESH comes from ratings of female physical attributes (e.g., Pettijohn & Tesser, 2003).

Ecological theory also explains the context variability of preferences for baby-faced and mature facial features. When socioeconomic conditions are threatening, individuals should become aware of a heightened need for security and should then be motivated to select others whose mature features convey an ability to satisfy those needs. Threatening situations, such as war and terrorism, cause people to feel scared, stressed and uncertain, which may make it functionally beneficial to prefer another individual whose facial and body characteristics communicate qualities that can possibly alleviate such negative emotions. Furthermore, individuals with mature facial characteristics are also considered to possess a higher level of social status and are seen as more important, more influential, to have more control and to be stronger (e.g., Berry & McArthur, 1985; Keating et al., 1981), which makes them more appealing during times of insecurity.

The physical appearances of musical artists are of increasing importance because research shows that cultural values, standards, and forms of media are intertwined. For example, researchers who examined nine US magazines found a great deal of evidence that the US value of 'rugged individualism' has a significant influence on the content of advertisements in order to perpetuate personal power, warriorhood, and heroic endeavors in US culture (Hirschman, 2003). Furthermore, research has found that popular music media is both a reflection of, and an exacerbating influence upon, the attitudes, values and behaviors of individuals within society (Bushong, 2002). Within such a context, it does not seem far-fetched that beyond the music itself,

popular music preferences may also be influenced by performer characteristics. With the explosion of music television, the internet, and mobile media, younger generations are developing an unprecedented familiarity with the attitudes and behaviors of musicians and their physical appearances, and such information may have a noticeable influence on their perceptions of the music performed by these musicians.

The current research

The current research explores aspects of popular music that have been largely untapped in the area of social psychology. Past research has found music preferences to be linked with personality characteristics and social identity, attitudes, values and current mood states. The music people prefer, as indicated by *Billboard* charts of popular music, is a socially viable tool for understanding the relationship between the current level of functioning of society, its effect on individuals and how individuals express this effect through their music preferences. The current research attempts to test predictions of the ESH, a preference for more meaningful song content and more mature performer characteristics during social and economic hard times compared to prosperous times, within popular US music.

Study 1 investigates the relationship between assessments of music and indices of socioeconomic threat. More meaningful music is expected to be preferred in more threatening social and economic conditions. Study 2 investigates the relations between performer facial feature characteristics and socioeconomic conditions. Since the musicians themselves are perceived to embody the values, attitudes and aspirations of the listening group, performers with greater facial maturity are expected to be increasingly popular during threatening times.

Study 1

Study 1 was an exploration of the relations between *Billboard* number 1 songs for each year (1955–2003) and measures of social and economic threat in the USA. Based on the ESH and previous research, it was hypothesized that during times of economic hardship and threat, songs with more meaningful themes would be popular, and during times of economic certainty, songs with less meaningful themes would be popular. More specifically, popular music was predicted to be rated as more meaningful and more comforting during social and economic hard times, and popular music was predicted to be rated as less meaningful and less comforting during social and economic good times. Meaningful music includes exploration of more complex, serious issues that are of elevated social significance, whereas less meaningful music includes more simplistic, fun music with few meaningful social ramifications. In addition to meaningfulness and comforting themes, we also predicted the popularity of songs with romantic themes, including both positive and negative elements of relationships, would vary with social and economic conditions. Love is a popular theme chronicled throughout music, books, movies, and other forms of media (Ackerman, 1994) and expressions of love, sex, and hurt in songs have been explored in previous investigations (Dukes, Bisel, Borega, Lobato, & Owens, 2003). Consistent with our predictions, other researchers have found love-lamenting music

to be preferred by unhappy lovers (Knobloch, Weisbach, & Zillmann, 2004). Therefore, romantic themes including elements of close relationships and love were considered to be meaningful topics predicted to be expressed more often when times were troubling. We also reasoned that the pace of music may be judged to be faster during social and economic good times and slower during times of social and economic concern as a reflection of environmental circumstances. Slower music is generally more reflective and may deliver a more meaningful message that is thoughtful and indicative of issues of elevated gravity. Furthermore, research indicates that slow tempo music results in greater satisfaction and relaxation compared to fast-tempo music (Oakes, 2003) and such characteristics of slow tempo music may help individuals deal with the chaotic atmosphere of more threatening and uncertain environmental conditions.

METHOD

Data collection

Although we considered investigating a larger collection of top US *Billboard* songs for each year (top 10, top 5, top 3), we ultimately decided to investigate the single top song from each year for logistic and theoretical reasons. First of all, having raters listen to nearly 500 songs for more than 24 hours did not seem reasonable and may not have resulted in high-quality ratings. Second, and more importantly, using a combination or average of multiple song ratings to represent each year would assume that each song is preferred to the same extent, which is clearly not the case. In addition, by using only the top song from each year we can provide a tangible example of music listeners' preferences to illustrate our findings.

A list of the US *Billboard* number 1 songs for each year from 1955 to 2000 was obtained from the book *Billboard Top 1,000 singles 1955–2000* (Whitburn, 2001). The number 1 songs for the years 2001–03 were obtained by contacting *Billboard* directly and purchasing the yearly reports. Song titles and the year each song was number 1 are provided in the Appendix. Since *Billboard* songs are ranked based on sales and radio air play success, *Billboard* was determined to be the most appropriate source for obtaining songs that were most representative of general cultural preferences across time in the USA. Based on the list of *Billboard* number 1 songs for each year from 1955 to 2003, the songs themselves were gathered from the researchers' personal collections of music and transferred into mp3 format. The duration of each song (in seconds) was also determined. All 49 songs were then copied onto a data CD for use during rating sessions.

In order to evaluate changes in the social and economic climate of the USA from 1955 to 2003, the current research made use of the General Hard Times Measure (GHTM) used in previous research (see Pettijohn & Jungeberg, 2004; Pettijohn & Tesser, 1999, 2003), updated for the current sample years. This measure is a standardized, global measure consisting of the US unemployment rate, change in disposable personal income, change in consumer price index, death rate, birth rate, marriage rate, divorce rate, suicide rate, and homicide rate. Individual measures were adjusted and combined into a single factor where larger GHTM values represent relatively harder times, while smaller GHTM values represent relatively better times.

Song ratings

In order to conduct our content analysis of the songs, we created a questionnaire based on the current set of predications and content assessments used in previous archival investigations (i.e., McIntosh et al., 2000). The questionnaire asked raters to consider to what extent the songs explored real, meaningful issues and whether the songs were comforting and romantic. In addition, raters were asked whether they believed the pace of the song was slow. Each of these domains was rated using a seven-point Likert scale ranging from 1 = 'strongly disagree' to 7 = 'strongly agree'. The questionnaire also had a demographic section, which included information regarding rater gender, race, age, and music listening habits and preferences.

Forty-nine mainly Caucasian (91.7%) participants (79.2% female) with ages ranging from 17–27 years ($M = 19.57$, $SD = 1.81$) served as music raters in this study.[1] Raters included mostly introductory psychology college students who received partial course credit for their participation. This sample also included volunteer participants from the greater community in order to make the sample more representative. Raters as a group indicated that they often listened to music ($M = 4.64$, $SD = .64$, on a five-point Likert scale ranging from 1 = 'never' to 5 = 'all the time') and their musical interests were wide and varied.

As listening to all 49 songs at one time was considered to be too taxing on the raters, each rater participated in three 75-minute sessions (225 minutes total) across a two- to three-week time span. Upon obtaining informed consent, the raters were told that the purpose of the study was to assess the content of popular music. In a controlled laboratory setting, the experimenter randomly played the songs through an LCD projector with an integrated sound system at an equal volume level using Microsoft® Windows Media® Player 10 software. Raters were instructed to listen to each song in its entirety prior to answering the content questions. Raters were not made aware of the true nature of the research until the debriefing session, which followed all of the rating procedures.

RESULTS

The raters were consistent in their ratings of each of the musical dimensions (alphas > .90). Correlational results yielded significant relationships between song duration, song ratings, and the GHTM.[2] Specifically, when US social and economic conditions were relatively poor, songs that were longer in duration and music that was more meaningful in content, more comforting, more romantic and slower, was popular.[3] All of these relationships were in the predicted direction and support the ESH predictions that popular song characteristics vary systematically with socioeconomic conditions. The moderate correlations between song content ratings and social and economic conditions are summarized in Table 1.[4,5] Visual demonstrations of how the duration, meaningfulness of content, and comfort ratings of songs have changed with social and economic conditions over time are presented in Figures 1, 2, and 3, respectively.

DISCUSSION

Consistent with the ESH, the predicted relationships between musical ratings and social and economic conditions were found. We predicted that songs with more meaningful content would be popular during threatening conditions. Not only was this relationship significant, but we also found that poor socioeconomic conditions were correlated with songs that were longer, more comforting, and slower. Rather than light or distracting

TABLE 1 *Correlational relationships between the GHTM with US* Billboard *no. 1 song music ratings (1955–2003)*

|	*r*
Duration	.27
Meaningful	.29
Comforting	.32
Romantic	.25
Slow	.28

Notes: $N = 49$ years. All tests were 1-tailed and all were significant at the .05 level. Larger values on the GHTM indicate relatively harder social and economic times.
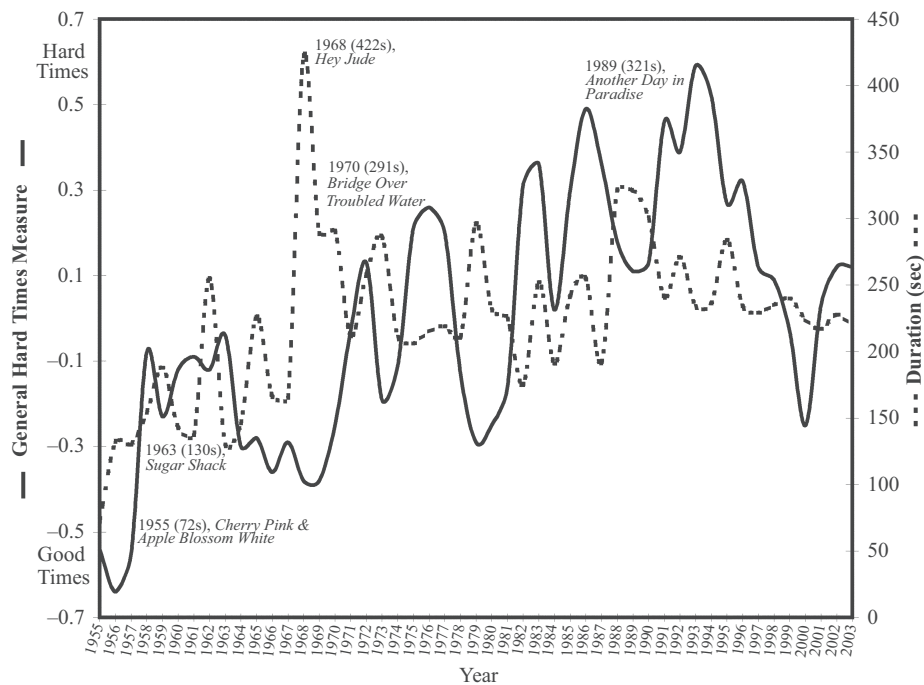
Notes: The solid line represents the GHTM. Along the left vertical axis, larger GHTM values indicate relatively hard times and smaller values indicate relatively good times. The dashed line represents song duration in seconds. Selected song examples are included.

FIGURE 1 *GHTM and mean US* Billboard *no. 1 song duration change across time.*

music, music that explores important issues, as well as music that is more comforting and romantic is preferred during threatening social and economic conditions. Although our predictions were supported and the obtained correlations were statistically significant, it is important to note that the strength of these relationships was moderate (between .25 and .32). However, these findings strengthen and extend Pettijohn and Sacco's (2008) previous lyrical analysis of popular *Billboard* songs and suggest that music and lyrics together provide the necessary media experience to obtain the predicted relationships between content ratings and social and economic factors.
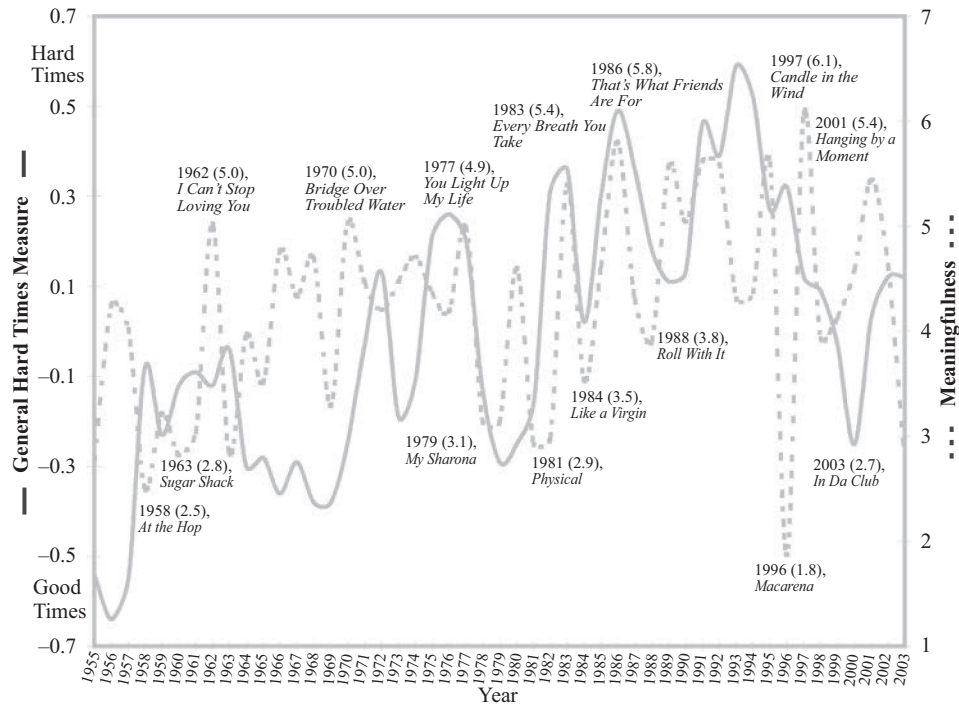
Notes: The solid line represents the GHTM. Along the left vertical axis, larger GHTM values indicate relatively hard times and smaller values indicate relatively good times. The dashed line represents song meaningfulness of content ratings, where larger values would indicate the song content was more meaningful and smaller values would indicate the song content was less meaningful. Selected song examples are included.

FIGURE 2   *GHTM and mean US* Billboard *no. 1 song meaningfulness of content rating change across time.*

When reviewing the figures, the examples of songs provided show the clear division between preferences during varying social and economic threat situations. As displayed in Figure 1, shorter songs such as 'Cherry Pink & Apple Blossom White' and 'Sugar Shack' were popular during less threatening periods of the 1950s and 60s, whereas longer songs such as 'Bridge Over Troubled Water' and 'Another Day in Paradise' were popular during the more threatening periods of the 1970s and 1980s. In Figure 2, 'At the Hop', 'My Sharona', 'Physical', 'Like a Virgin', and 'In Da Club' were rated low in meaningfulness and were popular during relatively good social and economic years. Songs such as 'You Light Up My Life', 'Candle in the Wind (1997)', and 'Hanging By a Moment' were rated high in meaningfulness and were popular during relatively poor social and economic years. In Figure 3, 'Every Breath You Take', 'That's What Friends Are For', and '(Everything I Do) I Do It For You' were popular during more difficult times and were rated high on the dimension of comforting. 'Mack the Knife', 'Physical', and 'Like a Virgin' were rated as less comforting and were popular in more secure years.
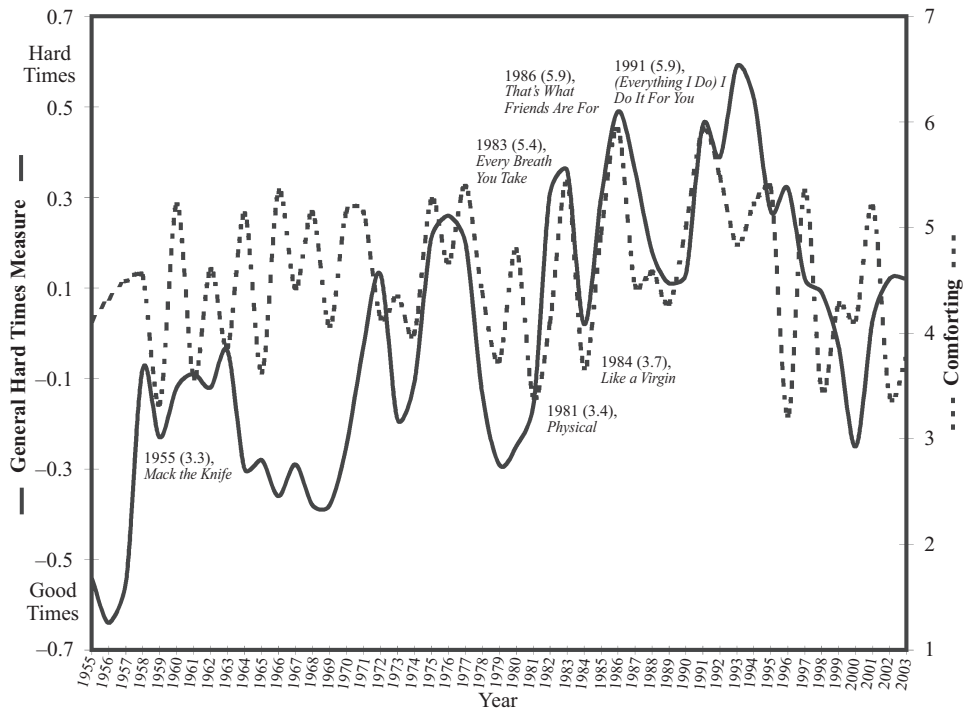
Notes: The solid line represents the GHTM. Along the left vertical axis, larger GHTM values indicate relatively hard times and smaller values indicate relatively good times. The dashed line represents song comforting ratings, where larger values would indicate the song was more comforting and smaller values would indicate the song was less comforting. Selected song examples are included.

FIGURE 3 *GHTM and mean US* Billboard *no. 1 song comforting rating change across time.*

The results of this first study suggest that popular music preferences are related to the social and economic times in which they were created. Specifically, music preferences may be a reflection of the particular needs of society during specific periods of time. Although Study 1 indicates that meaningful and comforting songs may be preferred in tough times, Study 2 extends these findings by exploring whether physical characteristics of the musical performers themselves might also be related to social and economic conditions.

Study 2

Study 2 explored the relationship between facial feature characteristics of the US *Billboard* number 1 song performers and socioeconomic conditions in the context of the ESH. During times of social and economic insecurity, the performers of the number 1 song for each year with a relatively greater degree of facial maturity, such as smaller eyes, a thinner face and a larger chin, were predicted to be preferred. Mature features convey attributes of independence and maturity, which should be considered more desirable qualities when individuals feel threatened. Conversely, when social and economic times are less threatening and judged to be more secure, performers with a relatively greater degree of neotenous facial features, specifically larger eyes,

a rounder face, and a smaller chin, were predicted to be popular. As mentioned previously, the physical appearance of women may be weighted more heavily than the physical appearance of men in our society. Because of this discrepancy, the appearance of female performers may follow our predictions to a greater extent than the appearance of male performers (Pettijohn & Tesser, 2003).

We also predicted that the relationship between popular performer facial features and socioeconomic conditions may be stronger in more recent years because of the broad inception of visual media in the 1980s. Prior to 1981, musical performances on television were limited to such formats as variety shows and late night television. It was not until August of 1981 that the first television station devoted entirely to music, MTV, was established (Kronke, 2001). For the first time, individuals had 24-hour exposure to pop culture music and news (Gunderson, 2001). Not long after the establishment of MTV, Viacom established VH1 (Video Hits 1) in 1985. The music television industry has grown and at the present time, MTV networks own and operate MTV, VH1, CMT (Country Music Television), MTV2, mtvU, and the Digital Suite, all of which are music television stations. MTV alone reaches nearly 480 million subscribers in 179 countries and territories, while VH1 has the highest concentration of adult viewers (ages 18–49 years) of any network. Furthermore, music television also includes BET, which reaches more than 80 million US subscribers (Viacom, 2005). In sum, the development and pervasiveness of music video television since the onset of MTV led us to explore its impact on the value placed on the physical features of popular music performers. Previous research has shown that the physical appearance of hypothetical pop performers (North & Hargreaves, 1997) and the appearance of real vocal performers (Wapnick, Darrow, Kovacs, & Dalrymple, 1997) are directly related to the popularity of their performances and music. Audiovisual ratings were also higher than audio-alone ratings, demonstrating the importance of the visual presence of artists in determining music preferences (Wapnick et al., 1997). We proposed that the increasingly strong association between performers and their music, because of music video television, could make mature facial features of the performer even more salient and preferred during more threatening social and economic times.

METHOD

Data collection

High-quality photographs were obtained for the US *Billboard* number 1 song performers from each year (1955–2003). The photographs that were chosen captured the complete, front, facial view of each of the performers and were downloaded from the internet (various sources). Based on Cunningham's method of facial measurement (see Cunningham et al., 1995, for exact measurement schema), two trained raters, both unaware of the study's predictions, provided independent facial measurements of each performer. These raters used the computer program PhotoMagic® 1.0 (from Micrografx, Inc.) to measure facial features. Measurements were made by placing the mouse cursor at a beginning point, moving the cursor to an end point, and then reporting the change in coordinates for each measurement. Facial measurements included the eyes (eye height, eye width, and eye area), chin (chin length, chin width, and chin area) and facial thinness (cheek thinness). All such measurements were then standardized as ratios to the appropriate vertical or horizontal axis.[6]

The same GHTM used for Study 1 was also used for Study 2.

RESULTS

The reliability of the facial feature measurements was calculated using the correlation between the unique component measurements of each rater and adjusting this value by using the Spearman-Brown prophecy formula. All reliabilities were satisfactory (ranging from .97 to .99). Using the facial-metric assessments made by each rater, the mean for each facial feature was computed for each song performer.[7]

To determine the relationship between facial feature preference of popular performers and social and economic conditions across time, we correlated the GHTM with performer facial features for the years 1955–2003. Initially, we conducted two general facial feature preference analyses, one investigating the entire musical group and one investigating the lead vocalist(s). For the group analysis, the facial features of all group members for that particular year were averaged. For the lead vocalist analysis, only the facial features of the lead singer(s) of the songs were used. We identified the lead singer(s) for each song and if there was more than one vocalist for the song, we averaged the singers' facial features together.[8] Results for both analyses were very similar. Eye width was moderately smaller during relatively poor social and economic conditions, $r(46) = -.21$, $p = .08$ for the group analysis, $r(46) = -.22$, $p = .06$ for the lead singer analysis.[9] Although in poor socioeconomic times smaller eye area was found in facial features of lead singers and groups, these results were not statistically significant. There was also a trend for larger chin area preferences in popular lead singers, but not groups, in poor social and economic times, but this result was also not significant. Eye height, cheek thinness, chin width, and chin height measurements of musical groups and lead singers were not related to changes in social and economic conditions.[10]

Since past ESH research has indicated a relationship between social and economic conditions and eye size preferences for females rather than males, correlations were performed for female and male performers independently for the years 1955–2003.[11] Historically, there have been more male performers ($n = 34$) than female performers ($n = 13$) with US *Billboard* number 1 songs. However, when conditions were relatively unfavorable, female performers with smaller eye height, $r(11) = -.40$, $p = .09$, were popular, although these results were only marginally significant because of the extremely small sample size. Female performers with smaller eye area were also preferred in relatively poor socioeconomic conditions, although this result was not statistically significant. Interestingly, there was a non-significant trend for smaller chin width, chin length, and chin area for popular female performers in poor socioeconomic conditions. Female performer eye width and cheek thinness were not related to the GHTM.

The magnitude of the correlations between male performers' facial features and the GHTM were not as large as the correlations between the GHTM and female performers' facial features. This is consistent with past research indicating that fluctuating preferences for facial maturity are associated more with female, rather than male, targets (i.e., Pettijohn & Tesser, 2003). Specifically, when conditions were poor, we found marginally significant preferences for male performers with smaller eye width, $r(32) = -.26$, $p = .08$, larger chin width, $r(32) = .23$, $p = .09$, and larger chin area, $r(32) = .27$, $p = .06$. Although in the predicted direction, the relationship between relatively poor socioeconomic conditions and increased chin length and cheek thinness in male performers was not statistically significant. Male performer eye height and eye area were not related to the GHTM. Correlations between the GHTM and lead singer facial features are summarized in Table 2.

Recognizing the advent of MTV in August of 1981, the first MTV Video Music Awards in 1984, as well as the creation of VH1 in 1985, we conducted an additional analysis between socioeconomic conditions and performer group and lead singer facial features from 1984 to 2003. We chose to start the correlations in 1984, the year of the first MTV Video Music Awards. This year seems to be a logical starting point for analysis because the awards could be construed as mainstream acceptance of, and exposure to, music video television. We were also hesitant to use the first couple of years of music television (1981–83) because there would be a lag between the onset of music television, the availability of the programming to the public and its effects on popular culture. We found significant relationships in the predicted directions between poor socioeconomic conditions and smaller popular performer eye width, eye height, and eye area.[12] A summary of these findings is provided in Table 3.[13] Although larger performer chin measurements were preferred in relatively difficult socioeconomic conditions, these results were not statistically significant. Cheek thinness of performers was not significantly related to the GHTM. A graphic representation depicting how eye area of popular lead singers has changed with social and economic threat across time is presented in Figure 4. Further exploration of male and female singer facial feature differences would have been conducted, but the sample size was too small to yield meaningful results.

TABLE 2 *Correlational relationships between the GHTM with US* Billboard *no. 1 song lead singer facial features (1955–2003)*

Feature	All lead singers	Male lead singers	Female lead singers
	r	r	r
Eye width	−.22a	−.26a	−.04
Eye height	−.03	−.14	−.40a
Eye area	−.12	−.09	−.30
Cheek thinness	−.05	.14	−.02
Chin width	.12	.23a	−.18
Chin length	.08	.21	−.23
Chin area	.12	.27a	−.23

Notes: $N = 47$ total lead singers (34 male and 13 female). a = $p < .10$. All tests were one-tailed. Larger values on the GHTM indicate relatively harder social and economic times.

TABLE 3 *Correlational relationships between the GHTM with US* Billboard *no. 1 song group average and lead singer facial features (1984–2003)*

Feature	Group average	Lead singer
	r	r
Eye width	−.34a	−.38*
Eye height	−.31a	−.26
Eye area	−.43*	−.45*
Chin area	.11	.19

Notes: $N = 20$ years. a = $p < .10$, * = $p < .05$. All tests were one-tailed. Larger values on the GHTM indicate relatively harder social and economic times.

DISCUSSION

Study 2 investigated ESH predictions via the measured facial features of popular *Billboard* music performers in the context of changes in the social and economic climate of US society. Correlating the GHTM with measurements of popular performer facial features from 1955 to 2003 yielded partial support for our predictions. We found a preference for smaller eyes in group and lead singers during relatively poor social and economic conditions as well as a trend in the predicted directions for larger chin area in lead singers when times were hard. The eye and chin measurement preferences were encouraging, but we recognize these results are limited. To explain these limited findings, we considered that male and female performers were grouped together for these analyses and the physical appearance of performers may not have been as important in the past as it is within our mass media culture today. The recent increase in visual media in music (MTV) may have been responsible for strengthening the relationships between facial maturity in popular performers and threatening environmental conditions.

When male and female performers were analyzed separately, we again found partial support for the ESH and some interesting sex differences. Even though the current study was confined by an extremely small female performer sample, a pattern in the predicted directions, consistent with previous results, was found. When times
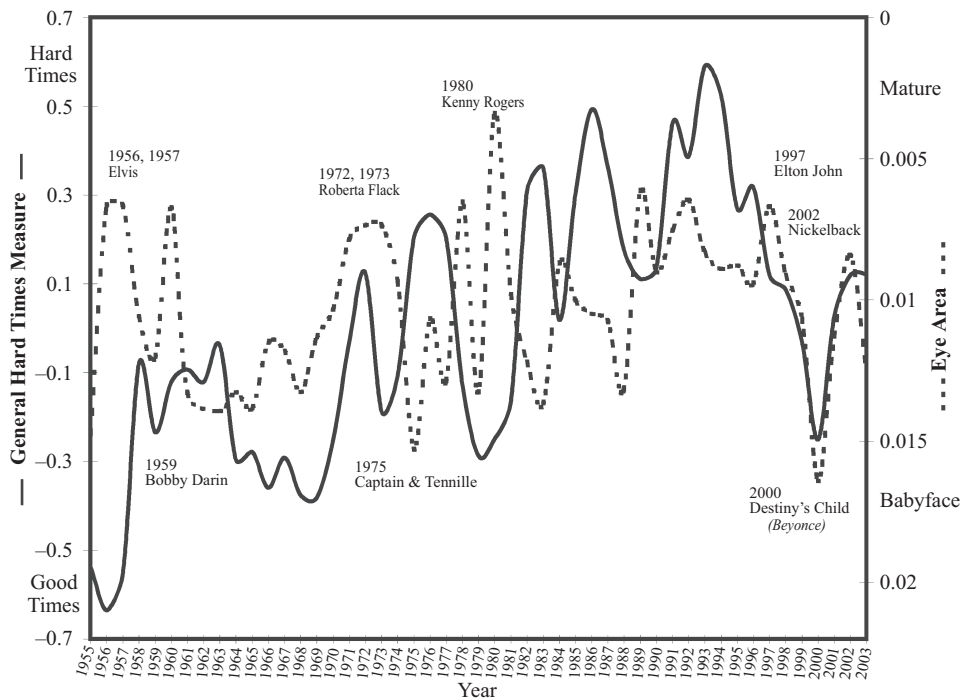
Notes: The solid line represents the GHTM. Along the left vertical axis, larger GHTM values indicate relatively hard times and smaller values indicate relatively good times. The dashed line represents measured lead singer eye area. Along the right vertical axis, smaller eye area values are considered more mature and larger eye area values are considered more neotenous. Selected performer examples are included.

FIGURE 4   *GHTM and US* Billboard *no. 1 song lead singer eye area change across time.*

were tough, female performers with smaller eyes were popular. When investigating the popular male performers, results were similar to the females, although eye size correlations were somewhat weaker. When times were threatening, male performers with moderately smaller eyes and larger chins were popular.

As female artists become more accepted, recognized, and popular in the future, it will be interesting to see if the current pattern of findings will continue. The increasing success of female artists in the future, based on trends within the existing US *Billboard* chart history, may be a distinct reality. Although only 24 percent of the performers of the number 1 songs were female up until 1984, 30 percent of the performers were female between 1984 and 2003. Although this is only an increase of 6 percent, it does appear that female performers are becoming more recognized in current popular charts. This success coincides with the advent and increased popularity of music video television, which may be a vehicle for female musical recognition. The greater availability and presence of performers in television (including the popular *American Idol*), the internet, magazines and mass media in general may enhance the importance of facial features of the performer with popularity within the culture.

Indeed, when the creation of music television was accounted for, we found a significant relationship between social and economic threat and popular performer group and lead singer eye size preferences from 1984 to 2003. When conditions were relatively poor, group and lead singers with smaller eyes were preferred and there was a preference trend for larger chins in both the group and lead singer samples. These findings are consistent with the ESH, as these mature facial features convey a sense of maturity and independence that are considered valuable during threatening conditions. Eye area values of popular lead singers from 1955 to 2003, and their changes with the GHTM, are displayed in Figure 4. As an example of predicted findings, the large, babyface eyes of Bobby Darin and Destiny's Child (Beyoncé) were popular during relatively good socioeconomic years and the small, more mature eyes of Roberta Flack, Kenny Rogers, Elton John, and Nickelback were popular during relatively poor socioeconomic years.

General discussion

Although the results of the current studies are correlational, they appear to suggest that environmental security may influence perceptions and preferences for certain songs and musical performers. Study 1 indicated that when experiencing threatening social and economic conditions, songs that are longer in duration and slower paced are preferred, as well as music that is more comforting, more romantic, and that deals with meaningful issues. Correspondingly, Study 2 indicated that a substantial proportion of music listeners appear to prefer performers who have mature facial features under conditions of environmental uncertainty. These findings are consistent with previous research (i.e., Stack, 1998, 2000, 2002; Stack & Gundlach, 1992; Stack et al., 1994; Zullow, 1991) linking music selection and socioeconomic variables. The results also support the ESH, which states that individuals prefer mature characteristics, content, and themes during periods of social and economic threat. Specifically, music may provide an environment, or outlet, in which individuals can explore aspects of their fear and uncertainty. As

such, this research provides additional evidence that popular music preferences may not only reflect the attitudes and values of individuals within society (Bushong, 2002), but that music may also reflect the needs of society as a whole.

Our studies also provide possible indirect evidence of the powerful influence that the mass media has on people's attitudes and perceptions. Although the relationship between social and economic conditions and eye size preferences was limited from 1955 to 2003, the advent of music-based television in the early 1980s seems to have strengthened this relationship. Specifically, a significant relationship between relatively poor conditions and a preference for smaller-eyed performers emerged within the period 1984–2003. Taking another look at our Study 1 data, we also found that the connection between the GHTM and comforting, romantic, and slow ratings has strengthened since the introduction of MTV. Although there was a variety of musical performances by musicians on television prior to this time, it was not until this period that entire channels were devoted to music videos and music television. Such pervasiveness of visual imagery regarding musicians has likely led to an increased association between songs and their performers. The current research appears to be a reflection of this relationship, as it seems that popular music preferences are influenced by facial feature preferences capable of conveying attributes that are valued depending on the current social and economic context. The results of this research contribute new insight into media preferences and their reflection of the condition of a culture.

Furthermore, it may also be the case that different mature characteristics of performers are preferred depending on the sex of the performer. The current study found that eye features seemed to be more important regarding female performers, while chin features seem to be more important regarding male performer preferences. When female performers were analyzed independently, the small available sample indicated that threatening social and economic conditions were related to a preference for female performers with smaller eyes. Although these results were only marginally significant, they were noticeable even with a sample of only 13 female performers. It would be interesting to see how this relationship is affected by the trend towards an increasing percentage of female performers that has taken place since the 1980s in the context of the growing music television and video industry. The relationship between social and economic threat and preferences for mature facial features may be different between the sexes. Specifically, analysis of male performer characteristics and social and economic conditions seems to indicate a preference for male performers with pronounced chin features. Although this differs from female performer preferences, pronounced chin features are a mature feature and preferring such features during threatening conditions is consistent with the predictions of the ESH. More research needs to be conducted, however, to see if this is a consistent relationship.

Future directions and limitations

The current results also generate additional questions for future exploration. For example, do mature-faced performers perform as well as write mature-themed songs and create more meaningful music? Tying the results from the two studies together suggests the answer to this question may be yes. Additional analyses revealed that performers' smaller eye size – a mature facial feature – was correlated with songs having

significantly higher ratings of meaningfulness and romance, as well as songs rated as having a slower pace. This consistency between performer appearance and ratings of their songs is quite exciting. However, a review of the songs and their writers finds that less than half of the 49 US *Billboard* number 1 songs we considered were written by the artists who performed the songs. Although the artists have a choice in the music they sing, and writers and agents are also involved in the matching process of artists with songs, song content and musical arrangements are not always direct representations of the views and opinions of the actual performers. Future research should investigate the connections between artist appearance, artist age, and the type of music they create or choose to perform.

The music industry itself also contributes to the popularity of songs and artists through a variety of marketing and promotion practices (Rothenbuhler & McCourt, 2004). Radio networks set the programming agendas of radio stations and influence talent selection policies of record labels (Ahlkvist & Fisher, 2000; Negus, 1993; Rossman, 2004). While the music industry and radio stations may be responsible for the songs and artists available to the public, we would argue that the industry must be in touch with the preferences of the listening public, and the social and economic conditions of society in general, in order to be successful. Specifically, programming and marketing strategists may be selecting certain artists and songs to promote under varying social and economic conditions within a culture. For example, the post 9/11 market in the USA seemed reluctant to buy music by overly sexed artists with party-themed song and dance routines and appeared to be more satisfied with meaningful song lyrics with more subtle forms of sexuality expressed (Girard & Skinner, 2004). The interaction between the music industry, radio station programming, artist promotion, and audience likes and dislikes is a complicated interplay that appears to be influenced, at least in part, by current social and economic conditions. Future studies may try to disentangle the specific contribution of each of these overlapping influences.

Although promising, this research must be viewed with some caution. The relationships found within this investigation may not be applicable to all ethnic groups, as the majority of raters utilized in this study, as well as the performers who were rated, were Caucasian. The music represented on US *Billboard* charts may not be representative of the music preferences of the entire population. Over the 49 years of *Billboard* charts we investigated, the majority of musicians have been Caucasian. Specifically, 32 of the years featured a number 1 song performed by a Caucasian artist, 15 by African American artists, and only two by Hispanic artists. However, from 1984 to 2003, half of the performers have been African American (50%), followed by Caucasian (45%) and Hispanic (5%). Therefore, the results of this study may be more ethnically representative than previously thought. The pattern of results found in the current set of studies could be reinforced by research that utilizes other popular music charts as well as a more diverse rater population. *Billboard* has charts for the top R&B/hip-hop albums, top rap albums, top Latin albums, and even an international chart (see *Billboard*, 2008). It would be beneficial for future research to conduct music ratings and performer analysis within these alternative charts, and in other countries, to test the robustness of the relationship between social and economic conditions and popular music preferences. We would expect that our pattern of results within the USA

would also be found in similar investigations in Europe and other countries, but further research is needed to replicate and extend our findings.

It must also be noted that a segment of Study 1 relied on individual raters to judge song characteristics. We recognize that these raters may have been influenced by perceptions of their own social and economic threat as well as the current societal influences when rating the songs in this study. Despite instructions to rate each original song as raters listened to the song, we recognize that some of the songs used in our study have also been remixed or covered by other artists, which may have influenced these subjective ratings. For example, The Police's hit 'Every Breath You Take' was heavily sampled in Puff Daddy's 'I'll Be Missing You', a popular collaborative tribute to murdered rapper The Notorious B.I.G. Greater diversity within the age, gender, and ethnic makeup of raters would minimize these social influence concerns. Although we included the opinions of non-college students, the majority of participants were under the age of 21. Ideally, we would like to have had ratings from the past done at the time when the *Billboard* songs were popular. Since this was not possible, our method provides a conservative test of our hypotheses. Temporal assessments may have resulted in stronger rating correlations with social and economic conditions. If people who were not part of the situation in which the music was written and performed are implicitly sensitive to its reflection of social and economic conditions at the time, getting ratings from those who grew up with the music would likely bolster the current results. Further work may also pursue greater specificity of music ratings to capture political themes, economic themes and romantic victimization or fantasy themes within songs to determine the particular forms of threat capable of impacting song and performer preferences.

We also recognize that the GHTM is not a perfect measure of social and economic conditions across time. For example, notice that the Beatles' 'Hey Jude' in Figure 1 was the longest song in our sample and it was popular in 1968, a year which was not particularly threatening according to our measure of social and economic threat. The GHTM may not have completely captured the true uncertainty of the social and economic atmosphere in the late 1960s in the USA, although the GHTM has been used in previous investigations and has an overall high degree of face validity. We also understand that music preferences are related to factors besides social and economic conditions, which accounts for a portion of the variance in song and performer popularity. While we investigated the single most popular song from each year, future research may consider a variety of methods to analyze how aggregated sets of songs (i.e., top 5 from each year, top 10 from each year, all number 1 hits from the entire year, etc.) vary with social and economic factors across time. Replications of this nature could also explore the similarity of these selections within each year and thereby verify the reliability of annual music preferences and increase the validity of our current results. Finally, we understand that the current relationships are global assessments of social and economic circumstances and global assessments of music and artist popularity. Future investigations of individual threat and individual music and performers preferences are necessary to truly understand how threat and environmental influences impact upon our individual musical preferences.

Limitations aside, the results of this research contribute new insight into media preferences and their reflection of the socioeconomic conditions of a culture.

Specifically, there is fairly strong evidence that social and economic conditions and music preferences are intimately related. Evidence shows that during relatively poor conditions, music listeners prefer music that contains meaningful content. Furthermore, this research also shows a relationship between threatening economic and social conditions and a preference for performers with mature facial features. Thus, it appears that social conditions, song content, and performer characteristics all influence popular song preferences and future research should attempt to identify and understand the complexities of such relationships. Building on previous research connecting musical tastes to personality (i.e., Rentfrow & Gosling, 2003), the current research suggests that preferences for music can also be partially explained by systematic environmental influences. Collectively, there does seem to be evidence that tough times lead to preferences for tough songs (e.g., that deal with meaningful issues) and tough artists (facial maturity).

NOTES

1. Eight additional raters were excluded from our sample because they failed to attend all three listening sessions.
2. Although music audiences comprise both males and females, we wanted to determine whether our male and female raters provided different song and performer assessments. Separating out the ratings for the male and female raters and rerunning the analyses did not lead to a significantly different change in our overall results for either Study 1 or Study 2.
3. There were some statistically significant relations between rating dimensions. Songs that were longer in duration were rated as more meaningful and slower. Music rated as more meaningful was rated as more romantic, more comforting and slower. Music rated as more romantic was rated as more comforting and slower. Music rated as more comforting was rated as slower.
4. We also considered how music has changed over time by correlating song duration and music ratings with time (year). Over time, songs have become longer in duration, $r(47) = .26$, $p = .07$, more romantic, $r(47) = .33$, $p = .02$, and slower, $r(47) = .31$, $p = .03$. No other statistically significant relationships were observed when considering time. In addition, changes in time alone do not explain our findings. When time was controlled for, partial correlations between the GHTM and song ratings yielded the same pattern of results.
5. In addition, the GHTM was lagged for one and two years and the relationship between these delayed statistics and song/performer measures were assessed in Study 1 and Study 2. Results were not stronger than the original outcomes in either case.
6. Eye height was the distance from the top to bottom of the visible eye at pupil center divided by the length of the face. Eye width was the distance between corners of the visible eye divided by the width of the face at the cheekbones. Eye area was calculated as the product of the eye-height ratio and the eye-width ratio. Chin length was the distance from the top of the lower lip to the bottom of the chin divided by the length of the face. Chin width was the width of the face at the jaw measured at the middle of the chin height, divided by the length of the face. Chin area was calculated as the product of the chin length ratio and the chin width ratio. Cheek thinness was the inner corner where the lips meet to the

outer edge of the cheek divided by the length of the face. Cunningham et al. (1995) provide for additional facial measurements, but these other areas of the face were not the focus of the current investigation.

7. $n = 91$ since we measured each member of performer groups and some performers had popular songs in multiple years.

8. There was one lead singer of a group for the years 1958, 1963, 1965, 1966, 1970, 1971, 1979, 1982, 1983, 1986, 1999, 2001, and 2002. During 1964, 1968, 1975, 1978, 1996, and 1998, two individuals sang the song and their faces were averaged for lead singer analysis. The songs for 1969 and 2000 were sung by three individuals and their faces were averaged for lead singer analysis. The song from 1994 was sung by four individuals and all of their faces were averaged for lead singer analysis. The song for 1995 was performed by five singers and an average of their faces was used for lead singer analysis.

9. No eye measurements were completed for Ray Charles since he is blind and wearing sunglasses in his photo. Thus, the degrees of freedom for eye width, eye height and eye area were one less than the other facial measurements.

10. Although beyond the scope of the current investigation, popular lead singers had greater eyebrow height measurements, an expressive feature, during poor social and economic conditions, $t(47) = .26$, $p = .04$.

11. Prior to analysis, two years (1975, 1995) were excluded from analysis because the songs were performed by both female and male lead singers.

12. Popular performer personality characteristic ratings were also conducted by a sample of 103 participants. Performers were rated as less agreeable during poor socioeconomic conditions, $r(47) = -.28$, $p = .02$. Agreeableness may reflect an aspect of independence, which would be consistent with ESH predictions. There were no significant relationships between social and economic conditions and ratings of performer naivety, maturity, independence, sexiness, or physical attractiveness. However, mature personality ratings of lead singers were related to significantly smaller eye measurements and larger chin measurements. Independent personality ratings of lead singers were related to significantly smaller eye measurements as well.

13. As we investigated how the visual features of the performers have changed since the introduction of music television in Study 2, we also went back to examine how the non-visual characteristics of the songs changed post MTV (1984–2003) in Study 1. Based on the reduced sample size, we found the advent of music television did not strengthen the relationship between social and economic conditions and song duration or meaningful ratings. However, the relationships between the GHTM and comforting, romantic, and slow ratings were strengthened since MTV.

REFERENCES

Ackerman, D. (1994). *A natural history of love*. New York: Random House.

Ahlkvist, J. A., & Fisher, G. (2000). And the hits just keep on coming: Music programming standardization in commercial radio. *Poetics, 27*, 301–325.

Berry, D. S., & McArthur, L. Z. (1985). Some components and consequences of a babyface. *Journal of Personality and Social Psychology, 48*, 312–323.

Berscheid, E., & Reis, H. T. (1998). Attraction and close relationships. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology, Volume* II (4th ed., pp. 193–281). Boston, MA: McGraw-Hill.

Billboard (2008). Website. Retrieved 12 June 2008 from: http://www.Billboard.com

Bushong, D. J. (2002). Good music/bad music: Extant literature on popular music media and antisocial behavior. *Music Therapy Perspectives, 20*(2), 69–79.

Buss, D. M. (1994). *The evolution of desire: Strategies of human mating*. New York: Basic Books.

Cunningham, M. R. (1986). Measuring the physical in physical attractiveness: Quasi-experiments on the sociobiology of female facial beauty. *Journal of Personality and Social Psychology*, *50*, 925–935.

Cunningham, M. R., Roberts, A. R., Barbee, A. P., Druen, P. B., & Wu, C. (1995). 'Their ideas of beauty are, on the whole, the same as ours': Consistency and variability in the cross-cultural perception of female physical attractiveness. *Journal of Personality and Social Psychology*, *68*, 261–279.

Dukes, R. L., Bisel, T. M., Borega, K. N., Lobato, E. A., & Owens, M. D. (2003). Expressions of love, sex, and hurt in popular songs: A content analysis of all-time greatest hits. *The Social Science Journal*, *40*, 643–650.

Girard, K., & Skinner, L. (2004, 24 January). Sexual overload: Angst-ridden public's mood for raunch sours. *Billboard*, pp. 1, 63.

Gowensmith, N. W., & Bloom, L. J. (1997). The effects of heavy metal music on arousal and anger. *Journal of Music Therapy*, *1*, 33–45.

Gunderson, E. (2001, 1 August). MTV, at 20, rocks on its own. *USA Today*. Retrieved April 2006 from: http://www.usatoday.com/life/television/2001–08–01-mtv-at-20.htm#more

Hirschman, E. C. (2003). Men, dogs, guns, and cars. *Journal of Advertising*, *32*(1), 9–22.

Jones, D. (1995). Sexual selection, physical attractiveness, and facial neoteny: Cross-cultural evidence and implications. *Current Anthropology*, *36*, 723–748.

Keating, C. F., Mazur, A., & Segall, M. H. (1981). A cross-cultural exploration of physiognomic traits of dominance and happiness. *Ethology and Sociobiology*, *2*, 41–48.

Knobloch, S., & Mundorf, N. (2003). Communication and emotion in the context of music and music television. In J. Bryant, J. R. Roskos-Ewoldsen, & J. Cantor (Eds.), *Communication and emotion: Essays in honor of Dolf Zillmann* (pp. 491–509). Mahwah, NJ: Lawrence Erlbaum.

Knobloch, S., Weisbach, K., & Zillmann, D. (2004). Love lamentation in pop songs: Music for unhappy lovers? *Zeitschrift für Medienpsychologie*, *16*, 116–124.

Knobloch, S., & Zillmann, D. (2002). Mood management via the digital jukebox. *Journal of Communication*, *52*, 351–366.

Kronke, D. (2001, 26 July). MTV through the years. *Milwaukee Journal Sentinel*. Retrieved December 2005 from: http://www.jsonline.com/enter/tvradio/jul01/mtvtime26072501.asp

Little, P., & Zuckerman, M. (1986). Sensation seeking and music preferences. *Personality and Individual Differences*, *7*, 575–577.

McArthur, L. Z., & Baron, R. M. (1983). Toward an ecological theory of social perception. *Psychological Review*, *90*, 215–238.

McCown, W., Keiser, R., Mulhearn, S., & Williamson, D. (1997). The role of personality and gender in preferences for exaggerated bass in music. *Personality and Individual Differences* *23*, 543–547.

McIntosh, W. D., Schwegler, A. F., & Terry-Murray, R. M. (2000). Threat and television viewing in the United States, 1960–1990. *Media Psychology*, *2*, 35–46.

McNamara, L., & Ballard, M. E. (1999). Resting arousal, sensation seeking, and music preference. *Genetic, Social, and General Psychology Monographs*, *125*, 229–250.

Media Info Center (2005). Hours spent listening to the radio per week. Retrieved March 2005 from: http://www.mediainfocenter.org/music/radio_audience/hours_perweek.asp

Negus, K. (1993). Plugging and programming: Pop radio and record promotion in Britain and the United States. *Popular Music*, *12*, 57–68.

North, A. C., & Hargreaves, D. J. (1996). Situational influences on reported musical preference. *Psychomusicology*, *15*(1), 30–45.

North, A. C., & Hargreaves, D. J. (1997). The effects of physical attractiveness on responses to pop music performers and their music. *Empirical Studies of the Arts*, *15*, 75–89.

North, A. C., & Hargreaves, D. J. (1999). Music and adolescent identity. *Music Education Research*, *1*, 75–92.

North, A. C., & Hargreaves, D. J. (2007a). Lifestyle correlates of musical preference: 1. Relationships, living arrangements, beliefs, and crime. *Psychology of Music*, *35*, 58–87.

North, A. C., & Hargreaves, D. J. (2007b). Lifestyle correlates of musical preference: 2. Media, leisure time, and music. *Psychology of Music*, *35*, 179–200.

North, A. C., & Hargreaves, D. J. (2007c). Lifestyle correlates of musical preference: 3. Travel, money, education, employment, and health. *Psychology of Music*, *35*, 473–97.

Oakes, S. (2003). Musical tempo and waiting perceptions. *Psychology and Marketing*, *20*, 685–705.

Peart, N., & Dubois, P. (1987). Force ten. On *Hold Your Fire* [audio disc]. London: Mercury Records.

Pettijohn, T. F. II, & Jungeberg, B. (2004). *Playboy* Playmate curves: Changes in facial and body feature preferences across US social and economic conditions. *Personality and Social Psychology Bulletin*, *30*, 1186–1197.

Pettijohn, T. F. II, & Sacco, D. F., Jr. (in press). The language of lyrics: An analysis of popular *Billboard* songs across conditions of social and economic threat. *Journal of Language and Social Psychology*.

Pettijohn, T. F. II., & Tesser, A. (1999). Popularity in environmental context: Facial feature assessment of American movie actresses. *Media Psychology*, *1*, 229–247.

Pettijohn, T. F. II., & Tesser, A. (2003). History and facial features: The eyes have it for actresses but not for actors. *North American Journal of Psychology*, *5*, 335–344.

Pettijohn, T. F. II, & Tesser, A. (2005). Threat and social choice: When eye size matters. *Journal of Social Psychology*, *145*, 547–570.

Rentfrow, P. J., & Gosling, S. D. (2003). The do re mis of everyday life: The structure and personality correlates of music preferences. *Journal of Personality and Social Psychology*, *84*, 1236–1256.

Rossman, G. (2004). Elites, masses, and media blacklists: The Dixie Chicks controversy. *Social Forces*, *83*, 61–79.

Rothenbuhler, E. W., & McCourt, T. (2004). The economics of the recording industry. In A. Alexander, J. Owers, R. Carveth, C. A. Hollifield, & A. N. Greco (Eds.), *Media economics: Theory and practice* (3rd ed., pp. 221–248). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Schwartz, K. D., & Fouts, G. T. (2003). Music preferences, personality style, and developmental issues of adolescents. *Journal of Youth and Adolescence*, *32*(3), 205–213.

Stack, S. (1998). Heavy metal, religiosity, and suicide acceptability. *Suicide and Life-Threatening Behavior*, *28*, 388–394.

Stack, S. (2000). Blues fans and suicide acceptability. *Death Studies*, *24*, 223–231.

Stack, S. (2002). Opera subculture and suicide for honor. *Death Studies*, *26*, 431–437.

Stack, S., & Gundlach, J. H. (1992). The effect of country music on suicide. *Social Forces*, *71*, 211–218.

Stack, S., Gundlach, J., & Reeves, J. L. (1994). The heavy metal subculture and suicide. *Suicide and Life-Threatening Behavior*, *24*, 15–23.

Viacom (2005). *Viacom fact sheet*. New York: Viacom International.

Wapnick, J., Darrow, A. A., Kovacs, J., & Dalrymple, L. (1997). Effects of physical attractiveness on evaluation of vocal performance. *Journal of Research in Music Education, 45*, 470–9.

Whitburn, J. (2001). Billboard *top 1,000 singles 1955–2000*. Milwaukee, WI: Hal Leonard Corporation.

Williams, G., & Pettijohn, T. F. II (2008). Music for the seasons: Seasonal music preferences in college students. manuscript in preparation.

Zebrowitz, L. A. (1997). *Reading faces: A window to the soul?* Boulder, CO: Westview.

Zullow, H. M. (1991). Pessimistic rumination in popular songs and newsmagazines predict economic recession via decreased consumer optimism and spending. *Journal of Economic Psychology*, *12*, 501–526.

Appendix: *US* Billboard *no. 1 songs, 1955–2003*

Year	Song Title	Artist
1955	Cherry Pink and Apple Blossom White	Perez Prado
1956	Don't Be Cruel	Elvis Presley
1957	All Shook Up	Elvis Presley
1958	At The Hop	Danny & The Juniors
1959	Mack The Knife	Bobby Darin
1960	The Theme From 'A Summer Place'	Percy Faith
1961	Tossin' And Turnin'	Bobby Lewis
1962	I Can't Stop Loving You	Ray Charles
1963	Sugar Shack	Jimmy Glimer & The Fireballs
1964	I Want To Hold Your Hand	The Beatles
1965	(I Can't Get No) Satisfaction	The Rolling Stones
1966	I'm A Believer	The Monkees
1967	To Sir With Love	Lulu
1968	Hey Jude	The Beatles
1969	Aquarius/Let The Sunshine In (The Flesh Failures)	The 5th Dimension
1970	Bridge Over Troubled Water	Simon and Garfunkel
1971	Joy To The World	Three Dog Night
1972	The First Time Ever I Saw Your Face	Roberta Flack
1973	Killing Me Softly With His Song	Roberta Flack
1974	The Way We Were	Barbra Streisand
1975	Love Will Keep Us Together	The Captain and Tennille
1976	Tonight's The Night (Gonna Be Alright)	Rod Stewart
1977	You Light Up My Life	Debby Boone
1978	Night Fever	Bee Gees
1979	My Sharona	The Knack
1980	Lady	Kenny Rogers
1981	Physical	Olivia Newton-John
1982	I Love Rock 'N Roll	Joan Jett and The Blackhearts
1983	Every Breath You Take	The Police
1984	Like A Virgin	Madonna
1985	Say You, Say Me	Lionel Richie
1986	That's What Friends Are For	Dionne & Friends
1987	Faith	George Michael
1988	Roll With It	Steve Winwood
1989	Another Day In Paradise	Phil Collins
1990	Because I Love You (The Postman Song)	Stevie B
1991	(Everything I Do) I Do It For You	Bryan Adams

1992	I Will Always Love You	Whitney Houston
1993	Dreamlover	Mariah Carey
1994	I'll Make Love To You	Boyz II Men
1995	One Sweet Day	Mariah Carey & Boyz II Men
1996	Macarena	Los Del Rio
1997	Candle In The Wind (1997)	Elton John
1998	The Boy Is Mine	Brandy & Monica
1999	Smooth	Santana featuring Rob Thomas
2000	Independent Women Part 1	Destiny's Child
2001	Hanging By A Moment	Lifehouse
2002	How You Remind Me	Nickelback
2003	In Da Club	50 Cent

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