Entertainment Use and Political Ideology: Linking Worldviews to Media Content

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Abstract

This study integrates and builds upon research on moral psychology, entertainment media selection, and political communication that has established a link between political ideology and moral sentiments. An automated content analysis of the lyrics of 37,309 songs across 10 genres assessed the extent of appeals to five different moral domains defined by Moral Foundations Theory. The results of the content analysis are integrated with nationally-representative survey data (N = 1000) by linking lyrical content with self-reported preference for and exposure to musical genres. We then correlate the content of preferred genres with self-reported moral sentiments and political ideology. We find the moral content of music lyrics in the genres used by respondents is associated with their moral preferences and political ideology.

Keywords: morality, big data, computational social science, rap, hip-hop, LIWC, selective exposure

Entertainment Use and Political Ideology: Linking Worldviews to Media Content

As technological innovations have helped create a wider variety of media choices, entertainment has taken an increasingly prominent role in the political communication literature. Research has examined the problems of individuals tuning out from news media in favor of entertainment content, the impact of political comedy, drama, and documentaries as well as the potential for news/entertainment hybrids to play important societal roles (see Delli Carpini, 2017). The place of music in this revolution, however, has received considerably less attention.

Despite the great technological and cultural changes, music persists as a focal point of entertainment media consumption. For example, Nielsen (2015) reports 91% of Americans listen to music on a regular basis, averaging more than 24 hours each week. Popular forms of music and musicians have become flashpoints in several national social and political debates over the years, most notably over anti-police messages in rap music (e.g., Rose, 1991) and support for the second Gulf War (Wolfe & Akenson, 2005). With this in mind, the present study set out to document what kinds of values are expressed in various genres of music lyrics and how much—if at all—those expressed values relate to those of the listeners of those genres. Building on a tradition of communication research relating moral judgments to the enjoyment of entertainment media (e.g., Zillmann & Cantor, 1976; Tamborini, 2011) and more recent work suggesting exposure to moral content may alter the salience of related moral concerns (Eden et al., 2014), we apply those insights to musical preferences.

In a national survey, respondents were asked about their music genre preferences as well as their political and moral viewpoints. Lyrics of songs songs and albums that had appeared on Billboard's popular music charts for each genre over the course of five years were content analyzed for the presence of words evoking different kinds of moral sentiments. Linking these

two sets of data, the final analyses demonstrate that individual morality is related to the moral content of the lyrics of preferred musical genres. Further, we evaluate the role of political ideology as a mediator of this relationship, as it is strongly related to both individual morality and favored music genres.

Morality and Political Attitudes

Though political attitudes can emanate from self-interest or mere tribalism, there is little doubt that an important cause of the structure of political attitudes is morality. With that said, political scholars have struggled to cohere around a theory of attitude-value relations (Feldman, 2003). Not only are values an important feature of political ideology, values themselves partly reflect more dispositional personality characteristics and other stable psychological traits that vary across individuals and affect more aspects of life than just evaluations of political issues (Jost, Federico, & Napier, 2009). In other words, to understand political ideology and attitudes, one would be well-served to consider moral psychology. Moral Foundations Theory (MFT; Haidt, 2007) is among the theoretical contributions from moral psychology that have crossed over into political research. A key assumption of MFT is that moral judgments are often the result of affect-laden intuitions. This is in part due to humans' apparently innate ability to make moral assessments, which is theorized to have served an evolutionary role in governing human intraspecific relations (de Waal, 1996). In other words, in many everyday situations, it is not cognitively difficult for people to make moral judgments because the human mind is designed to do so.

MFT enumerates five moral "foundations," which are *types* of moral judgments theorized to be the result of evolutionary adaptations (see Graham et al., 2013). The implication is that although the specific priorities and contexts in which moral judgments occur will vary across

individuals and cultures, the human mind is innately prepared to perform certain kinds of moral cognitions within which we are all relatively constrained. Proponents of MFT have used the metaphor of taste buds instructively (Graham et al., 2013). Although individuals may have idiosyncratic preferences for food, and cultures vary widely in cuisine, humans remain restricted in what kinds of taste the tongue can sense. In much the same way, although value systems and ideologies will differ, moral evaluations are ultimately the product of processing that occurs in one or more of a finite set of mental modules.

Those foundations currently considered to be sufficiently justified both empirically and theoretically are known as care/harm, fairness/cheating, loyalty/betrayal, authority/subversion, and purity/degradation (Haidt, 2013). Others have also been proposed and are being investigated further (e.g., Iyer, Koleva, Graham, Ditto, & Haidt, 2012)[1]. Moral judgments that rely on the care/harm foundation are concerned with whether an act was kind, caused or prevented suffering, or protected a vulnerable entity. Fairness/cheating is related to whether parties involved stayed true to their word or received what was deserved. Loyalty/betrayal manifests when group membership and concerns are upheld or threatened. Authority/subversion refers to proper patterns of obedience and deference. A person who perceives a moral violation in the domain of purity/degradation will feel disgusted (Rubenking & Lang, 2014). Individuals differ in the extent to which they apply these different domains to everyday judgments and which situations are perceived to be relevant to any given type of moral considerations.

Those probing the implications of the theory discovered that ideological liberals rely principally on the care/harm and fairness/cheating foundations whereas conservatives value all

[1] A foundation focused on individual liberty has been proposed (Iyer et al., 2012), but was not integrated into our study due to the lack of follow-up work, detailed information about the questionnaire, and content analysis dictionary for that proposed sixth foundation.

five nearly equally, though very conservative people tend to place care/harm and fairness/cheating slightly lower in priority than loyalty/betrayal, authority/subversion, and purity/degradation (Graham, Haidt, & Nosek, 2009; Haidt, 2007). Collectively, the two foundations preferred by liberals—care/harm and fairness/cheating—are referred to as the "individualizing" foundations because they generally concern the rights and welfare of single persons, such as when one person is hurt by another or if someone failed to live up to an agreement. The three foundations important to conservatives but much less so to liberals—loyalty/betrayal, authority/subversion, and purity/degradation—are described as the "binding" foundations because they are typically rooted in group-level concerns. Therefore, the most concise way to describe how moral sentiments of liberals differ from conservatives is the extent to which the individualizing foundations are prioritized over and above the binding ones (Graham, Haidt & Nosek, 2009), which we will refer to in this article as "moral progressivism."

In addition to evidence that liberals and conservatives differ in their endorsement of individualizing and binding foundations, the moral differences between liberals and conservatives are evident in the words they use. Using a coding scheme known as the *Moral Foundations Dictionary*, differences in the moral words employed by liberals and conservatives have been observed in domains such as church sermons (Graham et al., 2009), elite debates over controversial political issues (Clifford & Jerit, 2013), and online political blogs (Dehghani, Sagae, Sachdeva, & Gratch, 2013). In the present study, we extend this work by applying this dictionary to music lyrics.

The creators of MFT (Haidt, Graham, & Joseph, 2009) have argued that morality fits at the second level of the McAdams (1995) three-level model of personality, between personality traits like the "Big Five" (level one) and political ideology (level three). This implies a causal

ordering in which personality causally influences morality and morality causally influences ideology. Indeed, research has suggested that the connection between personality and ideology (see Carney, Jost, Gosling, & Potter, 2008) is mediated by endorsement of moral foundations (Lewis & Bates, 2011). Findings from large convenience samples have confirmed a link between ideology and moral foundations, but this has rarely been tested[2] in representative survey data of the United States such as ours. Therefore, our first hypothesis (H1) predicts *there will be a positive association between progressive moral foundations and liberal political ideology.*

Moral Foundations and Media Enjoyment

What causes someone to enjoy the entertainment media that they do? One approach to understanding this process is Affective Disposition Theory (Zillmann, 1996), which argues that moral judgments about stories and characters are a driving force behind enjoyment of those narratives. Put simply, people are more likely to enjoy content that is morally agreeable. Recent refinements to this approach to entertainment enjoyment have integrated insights from MFT to understand how the type of moral content may predict media enjoyment and appreciation (Tamborini, 2011). Much of this approach has been organized under the umbrella of the Model of Intuitive Morality and Exemplars (MIME; Tamborini, 2011, 2013). MIME's chief contribution is its enumeration of a cognitive process linking moral judgments as conceptualized in MFT and media enjoyment in a way consistent with past work on how moral judgments affect entertainment experiences (e.g., Oliver & Bartsch, 2010; Zillmann, 2002).

[2] Graham, Nosek, and Haidt (2012) reported descriptive statistics on a subset of the items on the 20-item questionnaire in a representative sample that was not the primary data source for the study. Miles and Vaisey (2015) do not provide a straightforward illustration of the moral foundations' connection to ideology absent other moral measures, though the findings are apparently consistent to the extent that the reported information permits comparison. That study used a different measure of moral foundations, however, which the authors ultimately used to do an imputation procedure to try to infer its relation to the 20-item questionnaire.

Lewis and colleagues (2014) speculated that this approach could explain partisan audience fragmentation in non-political media because different sources of entertainment may emphasize different sets of moral foundations. Experimental work in this area has indeed shown moral foundations to be predictors of entertainment enjoyment (e.g, Tamborini, Eden, Bowman, Grizzard, Weber, & Lewis, 2013). Some research on MIME has even demonstrated changes in the salience of moral foundations, typically conceptualized as stable traits, after exposure to media content (Eden et al., 2014). While more tentative, an extension of the MIME approach (Tamborini, 2013) has borrowed from the Reinforcing Spirals logic (Slater, 2007, 2014) to argue for a theoretically consistent explanation for how audiences may fragment over time. Individual morality may drive selection of morality-consistent media, which may in turn reinforce the individual's endorsement of those moral foundations. This line of research establishes a causal logic for associations found in survey research like the present study.

Music, Morality, and Politics

Given the strong link between moral judgment and entertainment media enjoyment, as well as the link between morality and political ideology, it is logical to explore these patterns in an art form as pervasive and expressive as music. Viewing music consumption through the lens of moral content may shed new light on why people choose the music that they do or, alternatively, how favored genres of music may affect listeners in the political domain without explicitly addressing politics.

Considerable scholarship has sought to understand the contexts and motivations behind music consumption (e.g., Sun & Lull, 1986; Londsale & North, 2011; North, Hargreaves & Hargreaves, 2004; Schäfer, Sedlmeier, Städtler, & Huron, 2013). Evidence suggests that among the functions of music—though not necessarily most prominent in self-reports—are

understanding of the self and identity expression (Lonsdale & North, 2011; Schäfer et al., 2013). Compared to other media forms, the identity function is most prominent for music (Lonsdale & North, 2011). Nonetheless, as some scholars have noted, "the majority of work on the uses and gratifications of music has unfortunately produced extremely inconsistent results" (North et al., 2004, p. 44). But the potential role of music as a form of identity exploration, maintenance, and expression is buttressed by evidence that does not rely on one of the questionable assumptions of uses and gratifications—that media users are able and willing to report the reasons for their use of media (Katz, Blumler, & Gurevitch, 1974).

First, there is strong and consistent evidence of shared collective perceptions of the users of different musical genres (Rentfrow & Gosling, 2007; Rentfrow, McDonald, & Oldmeadow, 2009; Shevy, 2008), and these perceptions in many ways are accurate reflections of the actual users or fans of those genres (Rentfrow & Gosling, 2007). There are considerable and predictable differences between the characteristics of those who listen to different music genres (Bryson, 1996; Grabe, 1997; North, 2010; Peterson & DiMaggio, 1975), and many of these characteristics of genre audiences have remained relatively consistent for nearly half a century.

Second, there are clear clues to the use of musical genre preferences as markers of cultural or social similarity or identification. For instance, Lonsdale and North (2009) argued that "musical taste is a social 'badge' of group membership" (p. 324) by demonstrating that participants rewarded musical ingroup members moreso than outgroup members. Bakagiannis and Tarrant (2006) demonstrated that telling people that members of their outgroup shared their musical preferences caused meta-stereotypes of the outgroup to be more positive. And, Bryson (1996) found that more educated individuals demonstrated the greatest aversion to musical genres associated with lower SES levels: rap, heavy metal, country, and gospel. Indeed, based on

related evidence she argues that “it is no longer valid to assume that class (or race or gender) is the most important group identity. We must, instead, determine the categories that people enact in their everyday lives to highlight differences between social groups or identities” (Bryson, 1997, p. 149). A recent review (Harwood, 2017) explored the potential of music as a form of communication that both expresses one’s social identity and facilitates a kind of intergroup contact.

In addition to this evidence, many studies have argued for the role of specific musical genres as forms of cultural expression. As such, country music and rap have been viewed as genres that function to express unique sets of values tied to the characteristics of their stereotypical audiences and artists (Ryan, Calhoun, & Wentworth, 1996; Shevy, 2008). Buckley (1979), Smith (1980), Cobb (1982), and Lewis (1984) examined the values expressed in country music lyrics and how they connect with those of their audience. Rose (1991), Martinez (1997), and Kurbin (2005) considered the political function of rap music. Both country music and rap music are widely considered to carry at least vaguely political content, or content that deals with pressing sociopolitical issues or ideological value orientations. For instance, rap originated in urban environments as a Black art form, and by the late 1980s rap lyrics had become an outlet for expressions of frustration with the urban Black experience, including issues such as police brutality (Martinez, 1997; Rose, 1991). Over time, country music has carried themes related to working class struggles, individualism, traditional values, and (during times of American polarization regarding foreign conflict such as the Vietnam War and post-9/11) strong arguments supporting soldiers and hawkish attitudes (Buckley, 1979; Van Sickel, 2005). However, a study of #1 country song lyrics found less ideological content than most would have supposed (Van Sickel, 2005). In some ways, lyrics in rap and country music convey similar themes with regards

to violence (Armstrong, 1993) and both genres are a target of exclusion among those with high levels of education and otherwise generally omnivorous musical preferences (Bryson, 1996).

The existence of an association between the lyrical emphasis of some music and the political and other characteristics of its audience raises questions of cause and effect. Are people with certain characteristics drawn to certain musical genres, perhaps in part due to that genre's lyrics speaking to their own socio-political values, experiences, lifestyle, and other factors? Or, are individuals influenced by the lyrical content of music they prefer for other reasons, and thus alter their political attitudes and beliefs in response to music exposure? It is likely that there are reciprocal effects (Slater, 2007). In addition to evidence of selectivity, there is certainly evidence of causal effects of music (or music video) exposure on beliefs, attitudes, and behaviors that are politically relevant, even in short term experimental studies (e.g., Johnson, Trawalter, & Dovidio, 2000; Zillmann, Aust, et al., 1995). LaMarre, Knobloch-Westerwick, and Hoplamazian (2012) found that exposure to "White power rock" music playing softly in the laboratory waiting area was associated with more discriminatory resource allocation in a subsequent task than exposure to mainstream rock and pop music. This finding was present even though many participants failed to identify the White power music as such, and almost none could recall any specific lyrics. Experimental work in other research areas has shown music to be impactful as well. A particularly well-designed study which manipulated lyrical content while holding vocalist and melody constant across conditions found that violent lyrics caused more aggressive cognitions and state anger than non-violent lyrics (Pieschl & Fegers, 2016).

Thus, there is evidence consistent with both selective exposure and media effects explanations of relationships between individual attitudes, values, and beliefs and music lyrics. We suspect that the moral content of lyrics is a part of a mutually reinforcing process of music

selection and effects on listeners. We expect that the moral content of the music a person prefers will align with their own morality. Given that: (a) theory suggests that moral values precede political ideology (Haidt, Graham, & Joseph, 2009); (b) there is a relative absence of explicitly political statements in popular song lyrics (Sickel, 2005); and (c) despite this, there is clear partisan sorting observed among fan bases of certain genres (e.g., Bryson, 1996); it may be most appropriate to imagine political ideology as at least a partial mediator of the link between moral progressivism and the lyrical progressivism of the music chosen by individuals. That is, moral progressivism over time shapes political ideologies and musical preferences simultaneously. Moreover, political ideology, informed by morality, serves as a more visible marker of the distinctions between the audiences of musical genres and therefore some of the influence of moral progressivism on genre selectivity passes through its impact on political ideology. Therefore, we predict (H2) that *there will be a positive association between a respondent's moral progressivism and the moral progressivism of the lyrics in their preferred music genres* and that (H3) *the relationship between moral progressivism and the lyrical progressivism of preferred musical genres will be at least partially mediated by political ideology*.

Again, to be clear, we do believe that all of these relationships—between moral progressivism and ideology and between those two factors and the moral progressivism of the lyrics in preferred genres—are likely to be part of reciprocal and mutually reinforcing systems that we cannot easily disentangle with cross-sectional survey data. The lyrics of preferred songs should reinforce one's moral values as they are seen to be reflected through esteemed artists. Co-identification with fellow fans of a genre that has clear ideological or partisan inclinations can also help to reinforce ideological beliefs. However, since the choices of music are likely to be most variable over time and moral foundations are theorized to be developed prior to the

formation of stable political ideologies, we believe our proposed variable ordering is defensible in a preliminary examination such as the present effort.

Method

Survey Data

Survey data were gathered from a nationally representative sample of U. S. adults by YouGov between April 29 and May 7, 2015. In addition to 800 respondents in our general population survey, we also gathered data on an additional 200 respondents as part of a Black oversample given our desire to understand some music genres, such as rap and hip hop, that include Blacks as a major portion of its audience and performers (see Bialik, 2005 for a discussion on myths about hip hop audience demographics). Sampling weights were used in analyses and in reported descriptive statistics to adjust for the oversample and other demographic and social factors employed by YouGov to create a more representative sample (Rivers, 2007). Before analyses were run, 30 participants were dropped for either failing to answer all of the relevant items in the survey (n = 5) or failing to indicate that they liked any of the given genres of music (n = 25), leaving 970 respondents for analysis.

The sample was 54% female, with dummy coding such that the higher value signifies male in the analysis. 70.3% identified as White, 12.5% as Black, 13.7% as Latino/a, and 6.6% as some other race in a measure that allowed for multiple selections. In later analyses, a dummy variable for whether the respondent identifies as Black (including partial Black identification for a multi-racial person) was used. Age was measured as year of birth, then subtracted from 2015 to arrive at age (M = 48.03, SD = 17.37). Education was measured as an ordinal variable with six categories ranging from not graduating from high school to holding a degree higher than the bachelor's degree (Median = 3.00, M = 3.18, SD = 1.46). Religion was measured by offering 12

alternatives, including Protestant, Roman Catholic, Jewish, Muslim, and "nothing in particular." For purposes of control, a dummy variable was used for whether or not the respondent chose one of the Christian denominations (56%). Respondents were also asked to indicate the relative size of the community they live in with response choices ranging from "rural area," "small town," "suburb," "small city," to "large city" with responses coded 1 (rural area) through 5 (large city) (M = 3.14, SD = 1.20).

Political ideology was measured on a 5-point scale[3] from 1 (very conservative) to 5 (very liberal) (M = 2.90, SD = 0.94). Those who responded "not sure" (n = 118) to the item assessing political ideology were coded as 3 (moderate)[4]. In total, 31% described themselves as conservative or very conservative while 20% were liberal or very liberal.

Respondents were asked to report their *liking towards* and *listening frequency* for each of 13 music genres chosen by including all of the major U.S. chart categories maintained by Billboard (2016) as of April 2015. The following genres were thus presented to respondents (in randomized order) for these two questions: Latin, new age, jazz, pop, rap, R&B/hip hop, rock, country, dance/electronic, reggae, classical, blues, and Christian/gospel. The preference question asked, "Please indicate whether you dislike it very much, dislike it, have mixed feelings (survey response was labeled "neither dislike nor like"), like it, or like it very much – or if you don't know very much about this type of music." The responses were coded from 1 ("dislike it very much") to 5 ("like it very much") with those who didn't know much about the genre coded as missing. For frequency of exposure, we asked, "People don't always get to listen to the music

[3] The question wording is as follows: "In general, how would you describe your own political viewpoint?"

[4] Previous research (e.g., Treier & Hillygus, 2009) has found that self-described moderates and those who respond "don't know" are relatively indistinct in terms of their ideology as measured by policy preferences.

they prefer, and sometimes must listen to music they dislike. People also differ in how frequently they listen to music. For each music type, please indicate how often you typically listen to it." The response options were never (coded as 1), less than once per month (2), less than once per week (3), one to three days per week (4), and most days of the week (5). Respondents were not asked about listening frequency for genres they said they did not know much about in the previous item. Table 1 reports the means and standard deviations for musical preference and exposure along with the portions of respondents who reported liking or liking very much and who responded that they did not know much about them.

[INSERT TABLE 1 HERE]

We also administered the Moral Foundations Questionnaire (MFQ), a 20-item version of the scale most commonly used to assess endorsement of all five moral foundations (Graham et al., 2011). To measure moral foundations, respondents were presented with two series of statements. The first series of statements were Likert items relating to morality with 5 response options. One example of was "some acts are wrong on the grounds that they are unnatural," which is one of four items to measure the purity foundation. The second series of statements were considerations the respondent used when deciding whether something is right or wrong, with 6 response options ranging from "not at all relevant" to "extremely relevant." Responses were scaled to range from 0 to 5 in analyses. One example was "whether some people were treated differently than others," which is one of four items to assess the fairness foundation. For analysis, we constructed a variable for "moral progressivism" across the two sets of items by subtracting the average response for the binding foundations (care and fairness; M = 3.63, SD = 0.78) from the average response on individualizing foundations (loyalty, authority, and purity; M = 3.10, SD = 0.92), yielding the difference (M = 0.52, SD = 0.93).

Music Content Analysis

To collect data for the content analysis, the first author wrote a software tool[5] to scrape weekly chart data from Billboard.com for each genre that was included in the survey. Complete listings of the top songs and albums for each week from January 2010 to September 2015 were stored in a database, organized by genre. Billboard maintains only a singles chart for pop music and only album charts for blues, jazz, and reggae; for all others, both single and album charts were scraped. Following other research linking media and MFT (e.g., Clifford & Jerit, 2013), the *Moral Foundations Dictionary* (Graham et al., 2009) was used to generate quantities, via word counts, of the relevant words for each of the five moral foundations as well as general moral words like "good" and "evil" (see examples in Appendix Table 1). To check the validity of using the Moral Foundations Dictionary and the word counting method, we had two research assistants code a subset of the lyrics to ensure words were being used in a way that conveys the meaning implied by the dictionary. Full details on the automated analysis of song lyrics and the human coding validation are available in the online appendix.

Ultimately, content analysis was performed on the lyrics of 37,309 songs across 10 genres. Songs were not always mutually exclusively applied to a given genre.[6] Individual songs were only included once per genre, meaning a given set of lyrics would only occur once in the corpus for pop music even if the song spent many weeks on the pop charts. In total,

[5] The command line program along with documentation can be found at https://github.com/jacob-long/Song-and-Lyric-Data-Scraper. Users can collect chart positions and lyrics for any publicly available Billboard chart and use the Spotify API to collect further metadata. The application is permanently archived with DOI: 10.5281/zenodo.1203368.

[6] A song or album may chart on more than one genre's chart at one time. This is particularly true of pop music, which draws liberally from rock, country, dance, R&B/hip hop, and others. This was not seen as a problem since the end goal was to attain an idea of what people who listen to each genre hear in the lyrics within that genre.

approximately 12.7 million words were analyzed. Lyrics were analyzed in 100-word chunks to avoid confounding the number of words in a song with the number of moral words in the songs. Moral words—at least those included in the dictionary—made up between 0.85% (jazz) and 1.28% (Christian, reggae) of all words across different genres. As expected, genres differed from one another across each foundation category, although the occurrence of words in the fairness/cheating category were exceedingly rare overall (0.03%).

Plan for Analysis

We begin by providing a description of the extent to which references to moral foundations terms in song lyrics vary across genres. When comparing content analysis results between genres, measures are calculated as a portion of all moral words. That is, the operationalization is such that we are measuring the *balance* of moral considerations within each genre rather than the quantity. Put differently, the analyses address how each foundation is prioritized against the others, just as in our individual-level measure of respondent moral progressivism. The goal is to generate an assessment of the moral hierarchy within the genres rather than simultaneously include the overall moral intensity, which may be too confounded by the topic domains discussed within.[7]

Next, we integrate individual-level data regarding music use and preferences on the one hand and the lyrics of those genres on the other as well as how that is related to respondent ideology and moral foundations. To do so, an average of standardized scores for liked genres on moral progressivism in lyrics was used. The final outputs are interpreted as a z-score of the

[7] If a single genre had the highest raw frequency of words for each foundation, it would be difficult to say whether that was evidence that the genre prioritized each one of those kinds of moral considerations more than every other genre or if the genre simply discussed moral topics more often, which is a separate research question. Our operationalization makes that question—whether intensity of moral content or one foundation's endorsement is being measured—moot.

moral content of the lyrics in respondents' preferred genres. Any genre that respondents claimed to "like" or "really like" was included in the creation of the average. On average, those participants who met these criteria for at least one genre—saying they either liked or really liked the genre—did so for 4.53 (SD = 2.18) genres in total.

Results

Content Analysis

As a preliminary step before delving into the quantitative results of the content analysis, we looked through the corpus to get a subjective sense of the way the words in the dictionary were being used in the lyrics. After all, most popular music is not primarily about making unambiguous, moralizing statements, so it is important to investigate the extent to which it is reasonable to believe the dictionary words are being used in a moral way. With that in mind, we share some examples of uses of dictionary words in songs included in the study.

One of the most common words in the corpus that putatively taps the care/harm dimension is "fight." The word comes up in the song "Elastic Heart" by Sia, which reached Billboard's pop and dance charts. It first appears in the line, "I might have thought that we were one/Wanted to fight this war without weapons." This line also contains another care/harm dictionary word, "war." While the full context cannot be printed here, the limited context shows that while the word fight is not meant in the physical sense, it reflects a struggle against emotional harm and the subsequent part of the line indicates the speaker's disfavor for inflicting harm in return ("fight this war without weapons"). The song as a whole, which also includes lines like "You did not break me/I'm still fighting for peace" that ends with another care/harm dictionary word ("peace"), can be read as a statement of the speaker's resilience against the harm

inflicted upon her by a romance gone bad, making liberal use of physical metaphors such as those already mentioned.

For another example, we take the use of the word "father," which is among the most common words in the corpus from the authority/subversion dictionary. In the Meek Mill song, "The Trillest"—which was on his Billboard rap and R&B/hip hop chart-topping album, *Dreams Worth More Than Money*— the artist remarks, "too many kids with no fathers, doing too many bids," the latter part of the phrase referring to mass incarceration. This passage seems to rather clearly support the moral value of father figures. Other parts of this song go on to show endorsement of the loyalty/betrayal foundation, with the chorus line, "if your friends say you're loyal, throw your rollies in the sky," meaning to put one's hands in the air. This use of the dictionary word "loyal" also seems to fit the underlying assumption of the word counting approach in this case. For the purity/degradation foundation, some of the most common uses of the dictionary words revolve around cleanliness, literal and otherwise, in line with how the foundation is conceptualized. The rock song "All I Want" by Kodaline reflects on the redemptive quality of love with the line "you took my soul and wiped it clean." Another invocation of cleanliness consistent with the purity/degradation foundation is in another rock song, "Gluttony," by Buckcherry. The song alternates between stating the singer's desire for drugs and alcohol and the singer's self-loathing for his inability to resist, including the chorus line "I wanna die and kill my dirty mind," making clear his moral disapproval of the substance abuse.

Our subjective assessment of the lyrics in context left us confident in the appropriateness of proceeding with the content analysis, but the online appendix provides detail regarding our subsequent human coding validation to quantify the extent to which the dictionary words appear in contexts in which they invoke the foundation assumed by the dictionary.

The content analysis yields clear evidence of variation in moral progressivism across genres (see Appendix Figure 1), often but not always in a manner we might expect based on evidence regarding ideological variation in music genre preferences and listenership. For instance, Christian music favored binding foundation lyrics over individualizing by the largest margin of all genres; that is, Christian music was the least morally progressive in its lyrics. This is just as we would expect. For country music, on the other hand, the difference score was just above the mean of the 10 genres ($z = 0.223$), which is somewhat of a surprise given the association between country music and conservative ideology.

Pop and rock music provide a useful contrast to Christian and country music. These genres are generally considered the most widely consumed (and were based on our data, see Table 1), with pop music being definitionally bound to this perception. Pop music was most morally progressive in its lyrics; rock music was third by this measure. Rap lyrics had the third lowest moral progressivism among the ten genres, contrary to what one would expect if it is true that the genre's listeners are disproportionately left-liberal ideologically. R&B/hip hop is fifth out of the ten genres by the same measure, almost exactly equal to the mean. The finding of similarity in lyrical morality between rap and Christian music could be explained by the difficulty in assessing the lyrics' endorsement of the foundations discussed. Rap, in particular, is known for explicit rejections of authority. And both rap and R&B/hip hop, in being perceived as by and for Black people in the United States, may have functional rather than moral incentives to appeal to ingroup loyalty concerns. Of course, on the other hand, prior content analyses finding similar themes of violence in rap and country music (Armstrong, 1993), combined with their similarly marginalized audiences, hint that in some fundamental ways these musical forms may not be so different in their underlying moral themes.

Combined Data Analysis

A series of zero-order correlations[8] were estimated to provide an initial assessment of the hypotheses. The correlation of moral progressivism—the difference between individualizing and binding foundations—with political ideology was positive ($r = .48$, $p < .001$, one-tailed[9]), in line with expectations (H1). The correlation between self-reported moral progressivism of respondents and the lyrical progressivism of their preferred genres was also positive a ($r = .18$, $p < .001$) in support of H2. Endorsement of liberal ideology is also positively correlated with lyrical moral progressivism in liked genres of music ($r = .22$, $p < .001$), suggesting the possibility of mediation in line with H3.

Next, multivariate models were estimated with weighted least squares (WLS) regression in which each error term was weighted by that observation's inverse sampling selection probability. Standard errors were derived from White's (1980) robust estimators to properly account for the imprecision and heteroskedasticity added by weighting the sample (Lumley, 2010). Demographic controls included in all models were age, gender, education, size of respondent's community, and dummy variables for whether the respondent identifies as Black and Christian. H1 was retested with the addition of the control variables mentioned above (not shown in tables). Self-reported moral progressivism remained a strong predictor of liberal political ideology ($B = 0.41$, $SE = 0.03$, $p < .001$) with statistical controls included in the model. The addition of moral progressivism to the controls-only model accounted for an additional 14.4% of variance ($R^2 = .265$ with progressivism included, $R^2 = .121$ with controls only), which

[8] To account for the survey sampling weights, the correlations and associated p-values reported are estimated via bootstrap (with 10,000 resamples) in which the probability of resampling selection is determined by the sampling weight.

[9] All reported p-values are one-tailed. Although we report exact p-values where possible, we do not go beyond 3 digits of precision when the values are very close to zero.

is a statistically significant model improvement, $F(1, 962) = 189.02$, $p < .001$ and more than doubles the variance accounted for in political ideology.

To address H2, two models were estimated with the self-reported moral progressivism measure as the focal predictor and the moral progressivism of the lyrics of preferred genres as the outcome variable (see Table 2). Two additional controls beyond those listed above were incorporated into these models. First, a measure of the total number of moral words in the lyrics (both those that map onto moral foundations and those that are neutral) was added. This was done to ensure that the intensity of moral invocations in preferred genres is not significantly related to the other predictors. Second, the number of genres liked by the respondent was included as a covariate to adjust for the possibility that musical omnivores are exposed to systematically different types of moral lyrics than those who are more selective. Additionally, the number of genres liked predictor serves to help control for ceiling effects for the most extreme omnivores.

[INSERT TABLE 2 HERE]

In the first model, the relationship between self-reported moral progressivism and lyrical progressivism was positive and statistically significant, supporting H2. The addition of moral progressivism to a model with controls only (not shown in tables) accounted for an added 1% of variance (model improvement $F(1, 960) = 16.96$, $p < .001$). The second model added self-reported ideology to provide a more rigorous test of the relationship between music lyric exposure and moral progressivism. This model revealed the expected significant positive relationship between liberal political ideology and the moral progressivism of preferred music lyrics. However, the *t* statistic associated with the estimate for self-reported moral progressivism in this model dropped from 2.64 in Model 1 to 1.73 in Model 2, suggesting statistical mediation

via political ideology. Comparing the two models, the addition of ideology results in an R^2 change of .5% of variance, a rather modest improvement, $F(1,959) = 8.23$ ($p = .004$), likely due in part to the shared variance between moral progressivism and ideology.

Using the bootstrap estimation procedure described in Imai, Keele, and Tingley (2010) and its associated software tool,[10] we tested H3 regarding the statistical mediation of the relationship between self-reported moral progressivism and lyrical music progressivism via political ideology. We found an indirect effect, also known as average causal mediation effect (ACME), that was greater than zero (ACME = .03, $p = .01$, 90% CI [0.011, 0.066]). The average direct effect (ADE) of moral progressivism was also distinct from zero in the expected direction (ADE = .08, $p = .04$, 90% CI [0.004, 0.144]). The total effect, then, is estimated to be 0.11, the sum of the indirect and direct effects ($p = .004$, 90% CI [0.039, 0.173]), and consistent with the non-bootstrapped estimates from the OLS models.

Discussion

Our findings regarding the strength of association between the moral progressivism of preferred music lyrics and respondent moral progressivism are, in general, modest. The zero-order correlations between lyric progressivism and both ideology and self-reported progressivism are both roughly .20, which lies exactly in the middle of the range between "small" and "medium" according to effect size rules of thumb (Cohen, 1992). The standardized regression coefficients for moral progressivism (.11 in Model 1, .08 in Model 2) and ideology (.08), if interpreted as partial correlations, correspond to a small effect in that same framework. These

[10] The software provided by Imai, Keele, & Tingley (2010) performs a computationally equivalent procedure to Hayes's (2013) PROCESS macro for simple mediation analyses. The Imai, Keele, & Tingley implementation is used here because it, unlike PROCESS, can take into account survey weights.

two estimates provide a rough sense of the bounds of the probable effect size. The strength of the observed relationships should be considered in light of a number of limitations of the current effort relating to the measurement of music lyrics and linking music lyrics to individuals.

To begin, the strength of our automated content analysis of music lyrics—the ability to capture lyrics of a vast array of songs and genres over time—has drawbacks. The inherent crudeness of word-counting methodology cannot distinguish between endorsement and rejection of the moral foundations that appear in the lyrics. However, our human coding procedure ensured that the word count analysis was not mere noise-mining. Instead, the dictionary does indeed pick up moral uses of the dictionary words in context and does not miss a great deal of moral words that are not included in the dictionary. Still, our content analysis measures are not a perfect representation of the underlying moral beliefs expressed in the music lyrics, and the result may be to produce some anomalous findings and to attenuate some relationships. Future attempts to analyze music content will do well to employ other analytical methods, perhaps using modern machine learning approaches, or possibly even holistic assessments of naïve listeners, given the difficulty of discerning some lyrics and variations in interpretations of the same lyrics across respondents. We hope to facilitate such advances by making the software used to collect our lyric data publicly available (see footnote 6). It is also the case that genres may differ in the extent to which the lyrics are heard and understood by listeners for reasons both musical and linguistic, but our analysis essentially treats them as equivalent in this regard.

On the other hand, our approach offers many improvements over case studies of a single (Buckley, 1979; Grabe, 1997; Rose, 1991) or limited range (Armstrong, 1993) of music genres using idiosyncratic and ad hoc approaches that fail to permit cross-genre comparisons and that emphasize only a small sample of the most popular songs within a genre (Van Sickel, 2005).

Some more computationally complex analyses of moral content (e.g., Dehghani et al., 2013) may be better equipped to pick up on nuance but come short of deriving sentiment and do not lend themselves to pairing with individual-level data. Distributed dictionary representations (Garten, Hoover, Johnson, Boghrati, Iskiwitch, & Dehghani, 2017) may be an improvement on word-counting that does not suffer some of the drawbacks some other computational approaches would have for study designs like the present one. And, of course, there is more going on in the meaning of the lyrics than morality. Genres will vary in the extent to which issues of morality may be drowned out or selectively emphasized based on particular cultural and genre-specific concerns.

Second, there is some ambiguity in how to connect the lyric content to individuals. Without a doubt, our approach—excluding lyrics in the case of those not indicating a preference for the genre—are justified, but only by a general logic. A problem with our approach is that the operationalization implies that exposure to songs that reach Billboard's charts within a given genre is random, yet surely individuals do not randomly listen to music within a genre. This too could attenuate our observed relationship between lyric exposure and moral foundations. More granular measures of listening behavior, perhaps made possible by the increasingly digital means people use to listen to music, would be ideal and could be implemented in different types of research designs. All options at our disposal with these data have limits in the extent to which the breadth and variance in musical taste could be represented empirically. Data that reflects more of the natural variance across individuals, which would by extension mean variance within genres, would likely clarify the results of this study.

Nonetheless, our results provide some valuable insights into the role of morality in both music preference and political ideology. At the level of correlation, we found an expected

relationship between moral sentiments and the lyrical content of preferred music. In a regression model with a number of meaningful controls that could serve as alternate explanations for the observed correlation, individual morality still proved to be predictive of morality in the lyrics of preferred genres. Although the overall variance accounted for was not dramatic, the pattern of results suggests rather strongly these associations are not mere coincidence. Furthermore, there are limitations in cross-sectional, observational data in the extent to which variation among correlated predictors can be attributed to one or the other. It is likely the case that there are interrelationships with the controls that may make the apparent effects of moral progressivism and ideology smaller than the true effects.

The results of the second regression model, which added political ideology, are intriguing. The addition of political ideology improved the model only modestly, and ideology itself was a significant predictor. Further, ideology reduced the impact of moral progressivism on the morality of lyrics in preferred genres. Does this mean that the content analysis measures are in fact measuring ideological invocations rather than moral ones? Not necessarily. With some notable exceptions, music lyrics do little to explicitly state affiliation with a political ideology, despite the fact that fan bases of genres are often ideologically sorted. And the usefulness of music preference for social signaling may be the reason for the significance of ideology as a predictor in the final model. Prior work has anticipated ideological sorting in entertainment audiences as a byproduct of moral media content (e.g., Lewis et al., 2014), consistent with the results of this study of a representative sample of Americans.

Our mediation analysis suggests another viable explanation for the pattern of results, and one that is consistent with prior work (Graham et al., 2009) and our first hypothesis. Although quite difficult to study, there are theoretical reasons to believe that morality tends to form before

political ideology and is in fact a key factor in the formation of political ideology. A growing body of research has demonstrated personality differences between liberals and conservatives (e.g., Jost et al., 2009) and some have argued that morality mediates the connection between personality and ideology, with the influence of personality being indirect through moral sentiments (Lewis & Bates, 2011). Further, Haidt, Graham, and Craig (2009) encourage fellow researchers to understand ideology not just as the product of more fundamental traits and experiences—like personality and social environment—but through the "ideological narratives" that people find most appealing. While it would be foolish to assert that a person endorses the narrative embedded within each song they like, we do suggest that music is likely to serve as an outlet for reinforcement of the social, moral, and political values one holds dear. In this light, the mediation process outlined is theoretically plausible; morality is quite likely to influence ideology and individual choices about entertainment media content may be more directly related to—or more closely relatable to—political ideology than moral concerns.

Taken as a whole, this study suggests that music deserves greater attention in communication science, especially as it may relate to political and moral attitudes. With the growing literature on the role of fictional entertainment in politics (Delli Carpini, 2017), and the particular focus on the role of comedy in its various forms (Young, 2017), social scientific research on the link between music and politics has been conspicuous in its absence. Our particular approach to music here – viewing it as linked to politics through moral values – is only one of many possible approaches. Future research could examine the role of music in motivating political action, such as protest. Scholars could examine the role not just of the music itself, but the artists who create the music and may highlight the political and social meaning of their music in interviews or public statements. Finally, the question of motivations for the use of music is

important in understanding its effects, both political and otherwise. Those most motivated to use music as a means of identity development, enhancement, or reinforcement are most likely to be influenced by the lyrics of the music and the entertainers who make it. In short, the domain of research on the uses and communicative effects of music is ripe for further study.

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Table 1. Music genre preferences, exposure, and fan characteristics.

Genre	**Don't Know**	**Preference M (SD), % like**	**Exposure M (SD)**	**Ideology M (SD)**	**% liked (White/Black)**
Blues	4.7%	3.39 (1.04), 51%	2.17 (1.12)	2.94 (0.94)	50% / 65%
Christian/gospel	3.3%	3.15 (1.33), 43%	2.29 (1.38)	2.64 (0.87)	38% / 74%
Country	1.4%	3.31 (1.34), 51%	2.73 (1.41)	2.76 (0.94)	58% / 36%
Dance/electronic	4.6%	3.02 (1.17), 38%	2.07 (1.20)	3.06 (0.95)	37% / 47%
Jazz	2.5%	3.28 (1.10), 46%	2.08 (1.12)	2.90 (0.93)	43% / 66%
Pop	2.0%	3.64 (1.05), 64%	3.09 (1.35)	2.99 (0.91)	65% / 60%
Rap	1.5%	2.38 (1.36), 25%	2.07 (1.35)	3.14 (0.94)	19% / 60%
R&B/hip hop	1.9%	2.99 (1.34), 39%	2.43 (1.45)	3.12 (0.91)	33% / 86%
Reggae	5.4%	3.00 (1.18), 36%	1.89 (1.03)	2.97 (0.90)	37% / 55%
Rock	1.1%	3.89 (1.07), 71%	3.34 (1.43)	2.95 (0.97)	79% / 39%

Preference represents the mean on a 5-point measure ranging from "dislike very much" to "like very much," where 3 means "neither like nor dislike." The portion who "like" a genre refers to those who responded with a 4 or 5 to the preference survey item. Responses of "don't know much about it" are treated as missing and reported as a percentage of all respondents in the "don't know" column. The ideology column reports the mean (where 1 is "very conservative" and 5 is "very liberal") and the standard deviation of ideology for fans of the genre. The two quantities in the % liked by race column are the proportion of non-Hispanic Whites and non-Hispanic Blacks who like the genre, respectively. All means and proportions reported are survey-weighted.

Table 2. Regression models predicting moral progressivism in music lyrics.

	Liked Genre Lyrics	
	Model 1	Model 2
Controls		
Gender (Female)	-.12 (.08)	-.13 (.08)
Age	-.15 (.04)*	-.14 (.04)*
Education	-.04 (.04)	-.04 (.04)
Race (Black)	-.57 (.07)*	-.59 (.07)*
Religion (Christian)	-.35 (.09)*	-.33 (.09)*
City size	-.13 (.04)*	-.13 (.04)*
Genres liked	-.16 (.04)*	-.16 (.04)*
Total moral lyrics	-.52 (.06)*	-.51 (.06)*
Political beliefs		
Ideology (Liberal)	—	.08 (.04)*
Morality		
Moral progressivism	.11 (.04)*	.08 (.04)*
Constant	1.71 (.19)*	1.47 (.22)*
Model R^2	.42*	.43*
N	970	970

Coefficients are standardized coefficients with standard errors in parentheses. Note that lyrics are on a z-score scale rather than raw percentages.
* = $p < .05$, one-tailed