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**Sounds like meritocracy to my ears: Exploring the link between inequality in popular  
music and personal culture**

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## Abstract

Extant research documents the impact of meritocratic narratives in news media that justify economic inequality. This paper inductively explores whether popular music is a source of cultural frames about inequality. We construct an original dataset combining user data from Spotify with lyrics from Genius and employ unsupervised computational text analysis to classify the content of the 3,660 most popular songs across 23 European countries. Drawing on Lizardo's enculturation framework, we analyze lyrics through the lens of *public culture* and explore their link with individual beliefs as a reflection of *personal culture*. We find that, in more unequal societies, songs that frame inequalities as a structural issue (lyrics about "Struggle" or omnipresent "Risks") are more popular than those adopting a meritocratic frame (songs we describe as "Bragging Rights" or those telling a "Rags to Riches" tale). Moreover, we find that the presence in public culture of a certain frame is associated with the expression of frame-consistent individual beliefs about inequality. We conclude by reflecting on the promise of automatic text classification for the study of lyrics, the theorized role of popular music in the study of culture, and by proposing venues for future research.

Key words: music; meritocracy; inequalities; enculturation; unsupervised text analysis; computational methods

Word count: 7988

“Started from the bottom, now we're here [...] Workin' all night, traffic on the way home [...] Say I never struggled, wasn't hungry, yeah, I doubt it” (excerpt from the song “Started from the Bottom”, by Canadian artist Drake 2013)

“Cost of livin' get so high / Rich and poor, they start to cry / Now the weak must get strong / They sayin', "Oh, what a tribulation!"” (excerpt from the song “Them Belly Full”, by Jamaican artist Bob Marley 1974)

## 1. Introduction

Economic inequality and meritocracy are two sides of the same coin. In its original formulation, Young (1958) conceived of meritocracy as an ideology serving elites to maintain power. Accordingly, those with the symbolic and material power to define the criteria for deservingness, talent, and worth are those more able to fulfill it. Today, meritocracy remains a powerful justification of economic inequalities: individuals living in more unequal societies are more likely to consider hard-work and commitment (rather than family wealth or personal connections) as crucial factors to go ahead in life (Mijs, 2019; Roex et al., 2019).

Recent scholarship has shown the crucial role that information plays in this process: being informed about actual levels of inequalities prompts individuals to hold weaker meritocratic beliefs and to be more skeptical about the existence of equal opportunities to thrive (Alesina et al. 2018; McCall et al., 2017; Mijs & Hoy 2021). Adopting an experimental design, such studies can disentangle the effect that the *availability* of information plays in the formation of meritocratic beliefs. Yet, they are not able to disentangle *how* people acquire information about inequalities in the first place.

As major sources of information acquisition and sharing, media such as newspapers and

television have been scrutinized to understand how inequalities are depicted (McArthur & Reeves, 2019; Rose & Baumgartner, 2013). A striking majority of media representations about economic inequalities adopt meritocratic frames, depicting the poor as lazy and undeserving and the wealthy as self-made risk-takers (Bullock et al., 2001; McArthur & Reeves, 2019). However, much less is known about the relationship between such representations and the context of their consumption, especially individuals' beliefs (van Eijck & Lievens, 2008). Moreover, while newspapers are arguably more likely to cover inequalities, they are less widely consumed than *entertainment media* such as music or movies, especially for younger generations (Chyi & Tenenboim, 2017; Peiser, 2000). Unfortunately, we do not know all that much about how inequalities are represented in these outlets (Stavrositu, 2014; Streib et al., 2017).

The present study aims to tackle these shortcomings to develop a perspective on the potential relationship between media contents and the social conditions of their consumption. Our focus is on popular music, one of the most widely consumed forms of entertainment (Schäfer et al., 2013) with a documented role in the development of social and personal identities (Bennett, 2000; van Bohemen et al., 2018). We draw on Lizardo's (2017) enculturation framework to understand how meritocratic frames of inequality present in music ('public culture') might resonate with individuals' beliefs about inequality ('personal culture'). To this end, we employ two unsupervised computational methods—Concept Movers' Distance (Stoltz & Taylor, 2019) and Structural Topic Modeling (Roberts et al., 2014). Drawing on these methods allows us to (1) describe the extent to which popular music addresses inequality and (2) identify the frames used by artists to portray inequality. Building on Nelson's (2021) notion that unsupervised methods can be used to inductively uncover complex patterns in data, our study asks whether these methods are able to fruitfully identify concepts of inequality and meritocracy in popular music. The use of unsupervised methods

serves to analyze how inequalities are framed in music lyrics without letting previous classifications developed on other media outlets (e.g., newspapers, television—see Balestrini, 2015) influence the construction of such frames. As such, our study is a proof-of-concept for future studies to more systematically analyze the topic of inequalities and meritocracy in music lyrics (e.g., de Laat, 2019).<sup>1</sup>

To this end, we construct an original dataset of popular music combining user data from Spotify with lyrics from Genius, yielding a corpus of 3,660 popular songs across 23 European countries. We find that in more unequal societies, songs that frame inequalities as a structural issue (songs about “Struggle” or omnipresent “Risks”) are more popular than those adopting a meritocratic frame (songs we describe as “Bragging Rights” or those telling a “Rags to Riches” tale). Combining this dataset with survey data from the Eurobarometer, we find that the presence in public culture of a certain frame is associated with the expression of frame-consistent individual beliefs. The next section discusses the theoretical background against which we develop the empirical analyses that follow.

## **2. Music as a ‘mirror’ of social values**

Music has long been recognized as an important source for identity formation (Lonsdale & North, 2011), meaning making (Reitsamer & Prokop, 2018), and social distinction (Meuleman & Lubbers, 2014). Schäfer and colleagues (2013) recognized as many as 129 different uses of music, remarking on the ubiquity and importance of music in human experiences. Sociological research on music tends to focus on either the production of music or its consumption (DeNora, 2000; Verboord & Brandellero, 2018). On the production side, music is typically seen as a cultural object that represents and conveys social values (Marshall, 2019). These values might represent industry-specific reasons (e.g., to attract the

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<sup>1</sup> In order to support future efforts in this direction, we made our data, syntax, and appendix openly available at: [https://osf.io/5427t/?view\\_only=241036343ad546ef8364520938a953c9](https://osf.io/5427t/?view_only=241036343ad546ef8364520938a953c9).

largest audience; see Wilderom & van Venrooij, 2019) or artist-specific motivations (e.g., to tell a personal story; see Lena, 2006).

On the consumption side, listeners' reasons to listen to music expressing certain values might be guided by their worldviews (McDonnell et al., 2017). Such 'resonance' can relate to the lyrical contents of music (Oware, 2014) or to the symbolic position of music in a cultural hierarchy (Warde et al., 2008). Individuals can, for instance, identify with the lyrical narrative because of shared life experiences (Ivaldi & O'Neill, 2008). Alternatively, consumption of certain music genres is a transposition of social hierarchies into cultural hierarchies of taste (Prior, 2011; Ollivier, 2008).

Despite this common conception of music as a mirror of social values, there is a paucity of research on the relationship between music and individual beliefs (cf. van Eijck & Lievens, 2008; Chan, 2019). To address this lacuna, our paper inductively explores the presence of widespread values in music lyrics and their potential resonance with individuals' beliefs. As such, our focus is on the consumption side that considers the contents of music lyrics, disregarding artist or industry-related reasons to produce certain content. Our main objective is to understand how music's lyrical content might resonate with individual beliefs. In particular, we focus on a set of beliefs that are widely present in contemporary societies, namely belief in meritocracy. Meritocratic beliefs – according to which hard work is essential to reach success (Young, 1958) – are widely endorsed across Western societies and are strengthening (Mijs, 2018) as levels of inequality have grown (UN, 2020).

Its capacity to mirror social values makes music an important source of cultural messaging about inequality and meritocracy. Extant research describes the content of music lyrics, detecting topics related to status and conspicuous consumption and hinting at the potential presence of topics of inequality (Baksh-Mohammed & Callison, 2014). For instance, in recent years, music has increasingly depicted the possession of luxurious cars and

expensive jewels as markers of a high social status (Christenson et al., 2019). However, no research to date has explored whether and to what extent music depicts economic inequalities through a more or less meritocratic lens.

Our first research question concerns *whether the lyrics of popular songs across European countries mirror the reality of economic inequality* (RQ1). After exploring whether music depicts topics of inequality, we ask how inequalities are framed. Following Kluegel and Smith's (1986) typology, we conceptualize beliefs about inequality in terms of meritocratic explanations that focus on individual attributes (e.g., hard work), and structuralist beliefs that focus on extra-individual factors (e.g., family resources) and other aspects that are out of an individual's control (e.g., luck) (cf. Reynolds & Xian, 2014; McCall et al. 2017). We ask *whether meritocratic and structuralist frames are present in popular music lyrics on economic inequality across European countries* (RQ2). In answering these research questions, we pay particular attention to the relationship between lyrical representations and country-specific levels of inequality, in order to further explore the national context in which music is consumed.

Our third and final analytical step is to evaluate whether lyrical representations resonate with individuals' beliefs. Here, we draw on Lizardo's (2017) enculturation framework which distinguishes between public and personal culture. Public culture refers to declarative frames and routine behaviors that are shared and derive their meaning from the mutual understanding between members of one's group or community, whereas personal culture refers to individual beliefs and values as well as dispositions and schemata. A central issue in cultural sociology concerns how public narratives and symbols enter into individuals' cognition and belief systems. In other words, how public culture relates to personal culture (Bourdieu, 1990; Swidler 2001). Drawing on this enculturation framework, we ask *whether frames about economic inequality present in music lyrics (public culture) resonate with individual beliefs*



*about meritocracy (personal culture) (RQ3).*

We head the warning against overemphasizing music consumption, particularly the assumption that everyone values music, pays attention to lyrics, and shares an understanding of what music means (Marshall, 2019). In acknowledgement of these issues, we do not argue that individuals are directly influenced by music. Rather, we explore whether the availability of music frames about economic inequality facilitate the formation of frame-consistent beliefs. Given our data and methodological design (see next section), we do not test for causality between the consumption of meritocratic frames and individual meritocratic beliefs. Instead, we assume that such a relationship is likely self-reinforcing and that, regardless of the causal arrow, the study of music lyrics can inform the sociological study of culture in meaningful ways.

### **3. Materials and methods**

#### *3.1 Data collection*

Our study primarily builds on an original dataset containing a corpus of 3660 popular music songs we constructed from Spotify and Genius databases. Figure 1 visualizes the steps taken in the construction of this dataset. We also draw on secondary data from the Standardized World Income Inequality Database (SWIID, see Solt, 2020) to extract a standardized Gini index of all European countries, and on Eurobarometer 88.4 which provides data on individual-level beliefs about meritocracy (European Commission, 2019). We detail all measures used in the next section. In what follows we discuss our construction of the primary dataset of popular music lyrics across 23 countries in Europe.

[Figure 1 about here]

Our primary data are the lyrics of the top 200 songs in 23 European countries based on a unique dataset created for the purpose of this study by matching Spotify data on music consumption to Genius data on lyrical content. To line up musical consumption with individual beliefs about inequality as closely as possible, we focus on the most popular songs streamed in the first week of December, 2017 which is when data collection for the Eurobarometer 88.4 started.

To construct our dataset, we followed three steps. In the first step, we collected popular music consumption data from Spotify which we matched with the corresponding lyrics using data from Genius. We find a match for 80 percent of songs. The second step consisted of preparing our data for translation. We followed Reber (2019) in pre-processing the data and extracting terms from a Document-Feature Matrix: for each set of lyrics, we removed punctuation and numbers (keeping the hyphens, which are important for words such as “no-brainer”), we transformed all words to lowercase, and divided the text in single words through tokenization. We then constructed, for each country, a corpus (each country is considered as a collection of lyrics), and a Document-Feature Matrix (i.e., a matrix defining the frequency of each word in each song). Each word was assigned the language of the corresponding text, non-English words were translated with Google Translate (using the Google Translate API available in the R package *translateR*), and the translation was inserted back into the lyrics. The final step consisted of removing words with fewer than three characters, stop-words, words that do not occur in the dictionary (e.g., “la-la-la”), and lemmatization.

### *3.2 Analytical strategy*

This paper has three main goals: to explore whether popular music lyrics mirror actual levels of economic inequality (RQ1), how songs frame inequality (RQ2), and whether popular

music frames about economic inequality at the country level resonate with individual beliefs about inequality (RQ3). In order to do so, we follow three steps: we select songs about economic inequality; evaluate the topics present in this selection; and assess the relationships between music frames and individual beliefs.

In the first step, we selected songs that are close to the concept of inequality using Concept Mover's Distance (CMD; Stoltz & Taylor, 2019), a method that builds on Word Mover's Distance (Kusner et al., 2015) to classify documents based on the closeness to a concept of interest.<sup>2</sup> In addition to classifying songs, CMD gives an overview of how popular songs in different countries treat themes related to economic inequality. Unlike Word Mover's Distance, CMD allows us to define the closeness of documents to a specific concept, rather than identifying the similarities between documents.

To validate the selection of songs, the authors—independently—coded the content of the 50 songs with the highest and lowest levels of closeness to economic inequality according to CMD. There was moderately-high agreement between the authors,  $\kappa = 0.84$  (95% CI, .69 to .99;  $p < 0.001$ ). To illustrate, both authors agreed that the lyrical content of the song *Outcast* by FOOL (DNK) is close to the concept of economic inequality, as highlighted by passages like “Money in my pocket and I got some stashed left for you ooh / I'd rather be an outcast / Livin' my life cause I'm about that / Ain't no price I never doubt that / You can't buy me I'm an outcast.” At the same time, there were occasional disagreements, such as for the song *Wonderful Dream (Holidays Are Coming)* by Melanie Thornton, where the words “A wonderful dream of love and peace for everyone / Of living our lives in perfect harmony” were interpreted by one author as having some bearing on the concept of (in)equality whereas the other author disagreed. Comparing our qualitative coding to CMD results we find that

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<sup>2</sup> In particular, we measured the presence of the theme of inequality through the closeness to the concept of “poverty”. After several iterations with different concepts (e.g., wealth, inequalities, rich) the concept of poverty emerged as the best in classifying songs that actually represent the theme of economic inequality.

most songs with high levels of CMD are close to the theme of economic inequality (~60 percent), while most of those with low levels are distant (~65 percent). In addition, precision (0.88) and recall (0.96) are both high, bolstering confidence in the CMD results. Online Appendix A shows the confusion matrix used to evaluate precision and recall.

Second, we used Structural Topic Modeling (STM; Roberts et al., 2019) to study how lyrics frame economic inequality. Topic modeling is a commonly used method to analyze media content (Maier et al., 2018), specifically for the detection of media representations (Törnberg & Törnberg, 2016; Nicholls & Culpepper, 2020). Compared to traditional algorithms for topic modelling (e.g., Latent Dirichlet Allocation; Blei et al., 2003) structural topic modeling allows for the introduction of document and topic-specific covariates that refine the process used to identify topics.

In this paper, country is used as a prevalence covariate to control for the fact that the same song can be present in different countries. To estimate STM, we adopted a data-driven approach to gauge the number of topics (K). The R package *stm* (Roberts et al., 2014, version 1.3.6) allows estimation of several models with different values of K, providing diagnostic indicators. Following previous research, we considered three measures, namely semantic similarity, exclusivity, and residuals (Reber, 2019). The relationship between semantic similarity and exclusivity suggests a value of 13 topics. This relationship helps choosing a topic based on the equilibrium between the two measures, with the goal of having the maximum value for both. Moreover, residuals are lowest at a value of  $K = 14$ , indicating a lower dispersion at that value. Considering these metrics, we opted for  $K = 13$ .

To establish the validity of the STM output, we randomly selected a sample of 10 songs for each topic ( $10 * 13 =$  total of 130 songs), read the lyrics of the selected songs, and qualitatively assessed the common theme in each topic. Based on our qualitative reading, we identified four topics using a meritocratic or structuralist frame and established inter-coder

reliability ( $\kappa = .78$  (95% CI, .63 to .93;  $p < 0.001$ ). To illustrate, both authors agreed that the song *Montpellier* by Miami Yacine represents a meritocratic frame because of verses such as “It's all hard work because I've never needed luck / Too many nights without a cent / Pay cash today for Stone to the Island”. On a few occasions, authors disagreed on the interpretation of the lyrical frame, as in the case of *Walk on Water* by Thirty Seconds to Mars: “Can you even see what you're fighting for? / Bloodlust and a holy war / Listen up, hear the patriots shout / "Times are changing".” Whereas one author interpreted these words as having some bearing on the concept of meritocracy, the other author disagreed. These results provide a first assessment of the validity of our choices: the songs we selected through STM depict, to various extents, two ways in which an individualist and structuralist frame discuss economic inequality in music. In addition, precision and recall are both high, further strengthening confidence in the STM results (for details see Appendix A).

In the third step, we employed multilevel analysis to assess the relationship between public frames about inequality as present in music and personal beliefs about meritocracy expressed by individuals. Given the nested nature of our data (respondents nested within countries) and our theoretical interest in understanding the relationship between country-specific patterns of music consumption and individuals' beliefs, multilevel modelling is appropriate for our purpose. In order to produce unbiased estimates due to the small number of countries, we use restricted maximum likelihood (REML) as estimation method (Elff et al., 2021). Furthermore, we employed population size weights available in the Eurobarometer 88.4 to correct for differences in population size.

### 3.3 Measures

In the multilevel analyses, our dependent variables are individuals' structuralist and meritocratic beliefs based on the Eurobarometer 88.4 question “How important do you think

each of the following are for getting ahead in life?”. Items include (a) Coming from a wealthy family, (b) Having a good education, (c) Working hard, (d) Knowing the right people, (e) Having good health, (f) Being lucky, (g) Being of a specific ethnic origin, (h) Being born a man or a woman, (i) Having political connections. For each, respondents are asked to indicate the perceived importance on a 5-point scale ranging from “Essential” to “Not important at all.” Following previous research, we recoded the answers on a scale from 0 (“Not important at all”) to 100 (“Essential”) and considered the answers to item c (“Working hard”) as indicating meritocratic beliefs (Reynolds & Xian, 2014). To measure structuralist beliefs, we follow Mijs (2019) in selecting the highest score among two items typically used to indicate such beliefs, namely items a (“Coming from a wealthy family”) and d (“Knowing the right people”).

Our focal independent variables are the country-share of songs representing inequality, of songs using a meritocratic frame, and of songs using a structuralist frame. These variables are taken from the results of the CMD and STM analyses discussed above. The share of songs about economic inequality is measured by averaging the scaled values of CMD across each country, which produces an estimate of the prevalence of inequality in the lyrics listened in each country (range = 10.43 – 19.59, mean = 15.23, sd = 2.04). The share of songs with a meritocratic or structuralist frame is measured by employing the theta values from STM, which produces an estimate of the average number of songs about inequality in each country that use a meritocratic (range = 0.02 – 24.7, mean = 7.7, sd = 7.2) or structuralist (range = 0.03 – 51.5, mean = 7.1, sd = 11.5) frame.

Control variables are taken from the Eurobarometer data. Sex is measured as a binary variable (1 = male, 2 = female). Social class is a categorical variable based on the question "Do you see yourself and your household belonging to...?" (working class, lower middle class, middle class, upper middle class, higher class). Age is a numerical variable. Education

is a categorical variable (not completed primary, completed primary, completed secondary, completer undergraduate, completed postgraduate) reporting the highest level of education. Employment status is a categorical variable (recoded following ISCO-08 as unemployed, retired, unable to work, student, unskilled manual worker, skilled manual worker, agricultural worker, craft and trade worker, service worker, technician, professional, manager).

To account for the potential of publicly available frames to enter personal culture, we estimate models with digital capital as a moderator of the relationship between music frames and personal beliefs. Considering streaming platforms as the prevailing modality of music consumption (IFPI, 2019a, b), this accounts for susceptibilities in being exposed to music frames looking at the material possession of devices that are generally used to listen to music digitally. We constructed a scale by summing items from the question "Which of the following do you have?" (television, DVD player, music CD player, desk computer, laptop, tablet, smartphone, Internet connection at home). Higher values indicate higher digital capital and, consequently, a higher probability of being exposed to music frames (range = 0 – 8, mean = 4.73, sd = 2.17). Table 1 gives descriptive statistics.

[Table 1 about here]

## **4. Results**

### *4.1 Songs about inequality*

Our CMD identifies 554 songs out of the 3660 songs included in our dataset that express a high level of closeness to the concept of inequality ( $CMD > 1$ ). The proportion of songs about inequality is fairly evenly distributed across countries: the percentage of songs that feature inequality averages 15 percent across Europe and is highest in France (20 percent) and lowest in Italy (10 percent).

Figure 2 visualizes the country-level relationship between actual levels of inequality and the level of consumption of popular music about inequality. We find that country-level inequality is weakly negatively correlated with the percentage of songs representing inequality ( $r = -0.15$ ;  $p = .48$ ): songs about inequality feature less prominently among popular music in countries where levels of inequality are higher. Such relationship is partly driven by Italy as an outlier. As shown in online Appendix A, removing Italy renders the relationship null ( $r = -0.05$ ;  $p = .81$ ). Looking at the loess estimate, the relationship seems to be non-linear, where countries with average levels of inequalities (such as France and Ireland) have the highest share of songs about inequality. Splitting countries by the median Gini value, reveals a positive relationship between income inequality and inequality representations for countries below the median and a negative relationship in the above-median cases.

[Figure 2 about here]

A quartile grouping of countries by Gini index best approximates the loess estimation: comparing countries in the first quartile (lowest levels of inequality) and fourth quartile (highest), we find a negative and positive relationship between actual levels of inequality and its portrayal in popular music, respectively. In low-inequality countries, actual inequality goes together with a lower prevalence of inequality in popular music lyrics, whereas in high-inequality countries, economic inequality is accompanied with a higher prevalence of inequality in popular music. Among countries in the first quartile, we mostly find those belonging to a Social Democratic welfare state (e.g., the Netherlands, Finland, Denmark, Sweden), while those in the fourth quartile are mostly Mediterranean and post-Soviet countries (e.g., Italy, Spain, Portugal, Latvia, Lithuania). Whereas previous scholarship describes a relationship between welfare state and cultural consumption patterns (Katz-Gerro,



2002; Lindell & Hovden, 2018), for instance as pertaining to the amount and quality of leisure time (Hallin & Mancini, 2004), we are agnostic as to the link with music consumption.

In sum, for our first research question we find that economic inequality is substantially present in popular music in Europe. However, we do not see a clear mirroring of actual levels of inequality and prevalence of inequality in popular music.

#### *4.2. Lyrical frames about inequality*

Next, we draw on STM to investigate how economic inequality is framed in popular music based on the subset of 554 songs identified in the previous step. Following the procedures and criteria discussed in our methods section, we identified 13 topics. To understand the themes underlying the top words for each topic, we analyzed the most representative sets of lyrics for each topic. We first read the ten lyrics most associated with each topic to establish a label for each topic. Subsequently, we independently coded the same ten songs for each topic ( $10 * 13 = 130$  songs) in order to identify those topics that most closely resemble an individualist and structuralist frame. Following Kluegel & Smith (1986), we considered topics 4 and 12 as representing a meritocratic frame, and topics 6 and 13 as reflective of a structuralist frame. Meritocratic topics focus on an individuals' financial and popular success as driven by their hard work, talents and decisions, while structuralist topics present situations that are not within individuals' control such as conditions and circumstances that constrain a person's life or threaten it. Table 2 shows information related to the four topics of interest.

[Table 2 about here]

Our qualitative assessment provides insight into how each frame describes economic inequality. The two meritocratic frames tell tales of the artist's material and symbolic success and their overcoming of hardship by virtue of extraordinary efforts and/or talents. The former frame, which we label "Bragging rights" is presented in 4 percent of songs which typically flaunt the artists' riches by reference to adulation and conspicuous consumption (e.g., "Pay up pay up / I got cash / Money in my pocket and I got some stashed left for you" – *Outcast* by FOOL (DNK)). The latter frame, which we call "Rags-to-riches" is present in 7 percent of songs and typically gives a narrative account of the artists' rise to fame, against-the-odds (e.g., "Grew up West Vienna in the nineties / Between Serbian signs of war on the house facades [...] All the teachers gave me therapy back then nothing will come of me / But now I stand here and have more money than you" – *Alles probiert* by RAF Camora).

Songs that feature a structuralist frame describe a "Struggle" (3 percent of songs) for self-actualization in the face of barriers and/or limited opportunities (e.g., "Helpless, I must have seen you struggling / Trafficking and crime, I immediately joined / I will sell cocaine to Marine" – *Ghetto* by Benash). Another structuralist frame highlights "Risks" and dangers (7 percent of songs) that may, at any time, derail one's hopes and dreams (e.g., "Homie, there's no love in this business / We kill each other for respect or for a cessation deal" – *Les gens parlent d'amour* by Guizmo).

Other themes generally depict regrets, setbacks and heartbreak but do not feature a clear meritocratic or structuralist frame through which such troubles are presented. Because of their heterogeneity, we did not include them in the analysis and focused instead on those frames that more directly map onto the meritocratic vs. structuralist depiction of inequality.

[Figure 3 about here]

Figure 3 shows the mean usage of each frame across countries. “Bragging rights” lyrics feature at about the same level across European countries. There is more variation in songs with a “Rags-to-riches” frame of inequality which, interestingly, are generally more popular in countries with lower levels of inequality. In relatively egalitarian countries such as the Netherlands and Germany, almost a third of all popular songs with some bearing of inequality feature this meritocratic frame, whereas very few songs do in countries with a higher level of inequality, such as Bulgaria and Italy.

The reverse is true for songs featuring a “Risks” frame, which seems to be most popular in more unequal countries such as France (half of all songs), Italy (30 percent), Spain, and Portugal (both roughly 20 percent). We do not find a clear pattern with regard to songs characterized by the “Struggle” frame.

To answer our second research question, we find two meritocratic and two structuralist frames in songs about inequalities. As visualized in Figure 3, residents of countries with higher levels of inequality are less likely to listen to songs that frame economic inequality in a meritocratic manner and more likely to listen to songs presenting a structuralist frame (as illustrated by France, Italy, Spain, and Portugal). As discussed in online Appendix B, these patterns are robust for alternative indicators of inequality, such as the country-level poverty rate (World Bank, 2020) or the country-specific income ratio between the top 10 percent and the bottom 40 percent (UNU-WIDER, 2020).

#### *4.3 Multilevel analysis*

Having classified popular music frames about inequality, we now examine the statistical relationships between country-level popular music frames and individual beliefs. To this end, Table 3 shows six models.<sup>3</sup> While models 1a – 1c regress each music frame on meritocratic

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<sup>3</sup> Results for table 3 remain unchanged also when removing Gini as control variable (see online Appendix C).

beliefs, models 2a – 2c regress each music frame on structuralist beliefs. In every model, interactions between music frames and digital capital are included to account for the likelihood of exposure to popular music. Interestingly, digital capital is positively associated with meritocratic beliefs (at the 99% CI) but not associated with structuralist beliefs.

[Table 3 about here]

Models 1a and 2a show that country-specific proportions of songs about inequality are not associated with either type of beliefs. An association emerges in model 2a when considering the moderating role of digital capital. As visualized in Figure 4 (Model 2a), individuals with low levels of digital capital living in countries where inequality frames in music are prevalent are more likely to express structuralist beliefs compared to those with high levels of digital capital.

[Figure 4 about here]

Models b and c describe associations between public and personal culture to more directly address Lizardo's (2017) enculturation thesis. In support of this perspective, Model 1b shows that individuals living in countries with prevalent meritocratic frames in music are more likely to believe in meritocracy, regardless of their level of digital capital. This means that the presence of a meritocratic public culture, as expressed in popular music, is associated with stronger meritocratic beliefs in personal culture. Model 1c shows that structuralist music frames are not associated with meritocratic beliefs.

Turning to structuralist beliefs, we find further support for the association between public and personal forms of culture. Model 2b shows that individuals living in countries

where meritocratic frames are prevalent hold less structuralist beliefs, especially among those with high levels of digital capital. Conversely, Model 2c indicates that individuals with high levels of digital capital, living in countries with more prevalent structuralist frames, are more likely to hold structuralist beliefs compared to those with lower levels of digital capital. Figure 4 (Models 2b, 2c) displays these statistical relationships. These associations between public and personal culture are weaker than we found for meritocratic frames in music, but consistent with the correspondence principle. All in all, we find that individuals living in countries where certain cultural frames are more available are more likely to hold frame-consistent personal beliefs (RQ3).

## 5. Discussion

Previous research on music has focused on the depiction of wealth and luxury as markers of a high social status (Burkhalter & Thornton, 2014). To the best of our knowledge, no research to date has systematically explored how music depicts not just status but broader issues related to economic inequality. Using unsupervised methods, we inductively find that the topic of economic inequality is present in music lyrics across European countries, ranging from 20 percent of all popular songs analyzed in France to 10 percent in Italy. In a first set of exploratory analyses, we find considerable variation among European countries and document the complex relationship between country levels of inequality and music representations of inequality.

In the next step, we analyzed the popular music frames used in representations of inequality. Relying on the established distinction between meritocratic and structuralist motivations, we identify two meritocratic frames (labeled “Rags-to-riches” and “Bragging rights”) and two structuralist (“Struggle” and “Risk”). Looking at the prevalence of these frames across Europe, we find that individuals in more unequal countries listen to fewer meritocratic and more structuralist songs about inequality.

Building from these results, we tested whether a discursive form of public culture – as in the consumption of popular music – contributes to the formation of a discursive form of personal culture – as in the expression of beliefs. To do so, we employed multilevel analysis to take into account country-specific differences in the availability of cultural frames. From our analyses, we found support for the idea that the availability of cultural frames influences frame-specific types of beliefs. In countries where a meritocratic frame is widely available, individuals have more meritocratic beliefs, while in those where a structuralist frame is more prevalent, individuals hold more structuralist beliefs. It should be noticed that we are not implying any causal relationship between public and personal forms of culture. It is an open question how public forms of culture might influence personal beliefs, one that requires particular attention to *how* culture, in this case music, is consumed and *how* its message might resonate with individuals' worldviews.

This study is a first step in this direction and, as such, is not without its limitations. We employed unsupervised methods to understand how much and in what ways songs talk about inequality, motivated by the lack of previous research on this topic and by the intention of letting the data speak for themselves. We found several ways in which the topic of economic inequality is discussed in popular music, which is a promising result for more structural and supervised research. However, unsupervised approaches come at the cost of potential inaccuracies in the contextual interpretation of lyrics. Songs often use a figurative language (e.g., metaphors) that might require more in-depth and systematic methods to better understand the meaning of lyrics. It is no surprise that from our qualitative validation we only find an accuracy of roughly 60% in the number of songs that have been correctly classified as being about inequality. Future content analytical studies might build on these findings to further explore through qualitative and mixed methods how economic inequality and meritocracy are portrayed in music.

Second, we have implicitly assumed that cultural representations of inequality in popular music are related to individuals' beliefs. This link may in fact be more complex as individuals might not process the lyrics of the music they consume, or they might consume music regardless of the lyrical content (Marshall, 2019). In other words, whereas we have assumed that popular songs portray narratives about inequality that resonate with the individuals that listen to them, future studies should further explore the reasons why individuals listen to music that becomes popular, with a specific focus on the awareness of the narratives that are portrayed.

Third, our findings describe the potential gains of directly measuring individuals' preferences for music, not only the genre (as done in most of the cultural sociological literature, see Roy & Dowd, 2010; van Venrooij & Schmutz, 2018), but favorite songs and artists. This would allow scholars to connect the analysis of individuals' beliefs with the narratives present in their favorite songs.

Finally, we focused on the consumption side of music, not considering the production side. This means that we do not know about musicians' or cultural industries' intentions and beliefs about the narratives portrayed in their music. Lyrics might represent a meritocratic narrative as a condemnation of its consequences. Moreover, songs are often meant to be contextualized into broader narratives that unfold in entire albums rather than single sets of lyrics. A stronger focus on the production side might benefit the cultural sociological literature on inequality, as much literature has been produced about the inequality of the cultural sector (e.g., O'Brien et al., 2020). In order to better disentangle the potential effects of cultural narratives about inequality, future studies might ask respondents' opinions about the intentions present in certain music narratives, while qualitative studies might be conducted among popular artists and cultural industries in order to better understand their intentions and beliefs.

To conclude, this study showed that cultural narratives about economic inequality are also present in music and they have some bearing on individual beliefs. More research should be conducted to better understand how music depicts the topics of inequality and meritocracy and to further theorize the role of culture in influencing individual beliefs.

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