In: Advances in Sociology Research. Volume 14 ISBN: 978-1-62948-375-7
Editor: Jared A. Jaworski © 2013 Nova Science Publishers, Inc.

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Chapter 3

THE BREADTH OF EUROPEANS' MUSICAL TASTES: DISENTANGLING INDIVIDUAL AND COUNTRY EFFECTS

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ABSTRACT

We offer a multilevel analysis of a sample of individuals living in European countries to model the factors that generate individuals' breadth of musical tastes. We identify two groups of genres that we label contemporary and middlebrow. Individual level indicators explain the greater part of sample variation, suggesting that country characteristics matter less than individual traits in shaping breadth of musical tastes. Nevertheless, we also find that two individuals with the same characteristics, living in more educated European countries will exhibit a greater breadth of contemporary musical tastes, and that two similar individuals living in a country that is on the average more politically inclined to the right will exhibit a lesser breadth of contemporary musical tastes. Finally, we also show that in the context of countries with a higher aggregate country educational level, individuals with highbrow musical preferences are less omnivorous in comparison with non-highbrows, and that in the context of countries with a rightist political inclination individuals with highbrow musical preferences are more omnivorous in comparison with non-highbrows.

INTRODUCTION

At least since Weber's (1978) work on status groups, sociologists have recognized that cultural lifestyles constitute an important part of the stratification in society. Social groups use

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lifestyles to manifest or realize central values and to draw symbolic boundaries of inclusion and exclusion. Within the broad definition of lifestyle (Featherstone, 1987), an important part is reserved for cultural competences that entail familiarity with and the use of cultural products and activities that are recognized as desirable in a certain context.

These competencies are termed cultural capital (Bourdieu, 1984), indicating that they are resources that can be converted into other types of capital, for example, social capital (Lizardo, 2006) or economic capital (Bennett et al., 2009; Sullivan, 2001). Cultural capital, understood as command of the legitimate culture in society, is the product of social background and a reflection of current social position (Ollivier et al. Truong, 2009).

Two major studies have influenced research on cultural stratification in the past four decades. The first is Bourdieu's (1984) theory of taste and its emphasis on the correspondence between position in the economic domain and position in the cultural domain.

The second is Peterson's (2005) work on cultural omnivorousness and its emphasis on the changing tastes of elites in western societies. While Bourdieu demonstrates how economic elites in society adopt a unified taste for western highbrow culture, Peterson argues that contemporary elites adopt an eclectic taste termed cultural omnivorousness, emphasizing familiarity with a wide range of artistic genres.

However, the extensive research on cultural stratification in general, and on the more specific issue of omnivorousness in particular, has paid relatively little attention to cross-national comparisons of the prevalence of omnivorousness and of the extent to which it is related to various axes of social stratification. Such comparisons are warranted for two reasons. First, they can reveal whether the association between cultural consumption and stratification systems converge or diverge between countries and the reasons for such relationships (Lamont and Fournier, 1992). Second, cross-national comparisons emphasize the role played by the national context in which individuals make their consumption decisions (DiMaggio and Useem, 1978). Hence, an important question that is understudied is, do particular socio-demographic characteristics have the same impact on consumption patterns in different national contexts? Put differently, does the predictive power of individual level socio-demographic characteristics vary between countries so that we can identify variations in the degree of reproduction of cultural advantages?

The significance of the research presented in this paper lies in its test of the elitist cultural omnivorousness thesis in a cross-national setting. Such a test adds to the scant comparative research on cultural stratification. Thus, our study has a bearing on the relationship between cultural consumption patterns, their symbolic properties, and structures of power and inequality in society.

To address the lack of research on cross-national comparisons of cultural stratification and to advance research on omnivorousness, we present a twofold story.

First, we use a European data set to uncover the social factors that shape the breadth of musical tastes independent of the country of the European respondent. Second, we model the breadth of musical tastes as dependent on both individual and country level variables in order to a) determine whether Europeans in general, and particularly those with highbrow taste, have a distinct breadth of tastes; and b) evaluate which country characteristics can explain differences in the mean breadth of tastes in the population. Our results show that individual level variables explain most of the variation in breadth of tastes, but at the same time two individuals with the same social characteristics living in different European countries will exhibit different breadths of musical tastes.

LITERATURE REVIEW

The Omnivore Thesis

In a series of influential articles, Peterson and his colleagues (Peterson and Kern, 1996; Peterson and Simkus, 1992) reformulate the link between cultural capital and social boundaries, which was previously understood using Bourdieu's (1984) homology thesis. Peterson argues that members of the upper class in the United States, who had formerly shown a preference for a limited range of highbrow cultural tastes and were therefore described as *cultural snobs*, had shifted their cultural preferences in the direction of experiencing and appreciating a wide array of cultural tastes, and should therefore be described as *cultural omnivores.* Cultural omnivores express cultural preferences that combine highbrow culture (e.g., opera), middlebrow culture (e.g., musicals), and lowbrow culture (e.g., country music).

The snob versus omnivore depiction of consumers from the social elite is important for understanding how cultural advantage is created and reproduced, the role that cultural capital plays in social stratification, and the association between advantages in the cultural hierarchy (i.e., having the legitimate cultural capital) and advantages in other realms such as educational attainment and occupational attainment (Sullivan, 2001; Warde and Tampubolon, 2002).

A number of scholars adopt the snob versus omnivore thesis in analyses of cultural stratification, thereby evaluating its applicability in diverse cultural domains and different countries.[1] These studies operationalize omnivorousness in various ways that are based mostly on cultural tastes (particularly music genres: e.g., Bryson, 1997; Emmison, 2003; Peterson and Kern, 1996; Peterson and Simkus, 1992) or attendance at artistic events (e.g., Chan and Goldthorpe, 2007; Garcia-Álvarez, Katz-Gerro, and López-Sintas, 2007; Holbrook et al., 2002; López-Sintas and Garcia-Álvarez, 2002a; López-Sintas and Katz-Gerro, 2005), but also in other domains such as eating out (Warde, Martens and Olsen, 1999).

When analyzing the correlates of cultural omnivorousness, most research has documented a strong correlation between economic position (e.g., social class, status, socio-economic index) and patterns of cultural consumption (Bennett et al., 2009; Peterson, 2005). Additional socio-demographic characteristics also play a significant role in shaping cultural omnivorousness (Katz-Gerro, 2002, 2004, 2006; Lahire, 2008; Ollivier, 2008). Specifically, research finds that men, those who are younger, and those who have a higher income, occupational status and education are most likely to exhibit omnivorous cultural preferences (Emmison, 2003; Holbrook et al., 2002; López-Sintas and Garcia-Álvarez, 2002b; Van Eijck, 2001; Warde et al., 1999).

Comparisons of Omnivorousness over Time

Given that the research on cross-national comparisons of cultural stratification is sparse, we first draw on another body of comparative research, one that analyses cultural stratification over time. This body of research has examined change and stability over time in

[1] For a review of this literature up to 2004 see Peterson, 2005. More recent major works include Bennett et al., 2009; Chan, 2010.

patterns of cultural omnivorousness and in the correlates of omnivorousness. Most research in this area has studied omnivorousness using American data for the period 1982 to 2002 (e.g., Garcia-Álvarez et al., 2007; López-Sintas and Katz-Gerro, 2005; Peterson, 2005; Peterson and Kern, 1996), but results are also available on Danish data for the period 1964-2004 (Katz-Gerro and Jaeger, 2012), Dutch data from 1975 and 1979 (Van Eijck and Van Rees, 2000), and a sample of Norwegian students for the period 1998-2008 (Gripsrud, Hovden and Moe, 2011).

Several general conclusions emerge from a review of this literature. First, cultural omnivorousness is indeed a widespread pattern, which is manifested in both arts attendance (e.g., DiMaggio and Useem, 1978; López-Sintas and Katz-Gerro, 2005) and musical tastes (e.g., Peterson and Kern, 1996). Second, individuals with highbrow cultural capital, who are part of a privileged group (defined by their social class, education, or race) tend to have a greater breadth of musical tastes and attend a greater variety of performing-arts genres today compared with their counterparts two and three decades ago. However, non-highbrow cultural consumption patterns do not exhibit a similar pattern (Jaeger and Katz-Gerro, 2010; López-Sintas and Katz-Gerro, 2005; Peterson and Kern, 1996). Third, major stratification variables such as social class, income, age, gender, and education are important predictors of cultural omnivorousness, but their effect has been declining in recent years (Garcia-Álvarez et al., 2007; Jaeger and Katz-Gerro, 2010; Peterson, Hull and Kern, 1998; Peterson, Sherkat, Balfe, and Meyersohn, 1996).

Although research on individual-level factors that shape omnivorousness and how they have changed over time has converged in finding some general patterns, almost no research has been carried out on the relative impact of those individual-level characteristics in cross-national comparisons, nor on the role that the national context in which individuals make their consumption decisions plays. The main challenge here is to unravel the different roles that individuals' socio-demographic characteristics and country characteristics play in shaping omnivorous tastes in order to identify the degree to which cultural stratification is constrained by societal context or open to individual attainment. If a change in context (i.e., different countries) affects our ability to predict the omnivorous taste of Europeans given their individual-level socio-demographic characteristics, then we should revisit our understanding of how cultural advantage is produced.

Cross-National Comparisons of Omnivorousness

Only a small number of studies on cultural stratification directly address the relevance of the societal context in a comparative fashion (Chan, 2010; Coulangeon, 2005; Coulangeon and Roharik, 2005; Katz-Gerro, 2002, 2006; Kraaykamp and Nieuwbeerta, 2000; Lizardo, 2006; Lizardo and Skiles, 2009; Virtanen, 2007). Most of these studies report systematic similarities between countries in patterns of cultural consumption, in the way these patterns cluster into highbrow, middlebrow, and lowbrow categories, and in the associations between cultural participation or tastes and education, socio-economic position, and other socio-demographic variables. Some of these studies point to the importance of simultaneously considering the individual and the aggregate levels.

For example, Coulangeon (2005) uses European data, and Peterson, Hull and Kern (1998) and Peterson, Sherkat, Balfe, and Meyersohn (1996) use American data to show that

the effect of a university degree on cultural consumption depends on the proportion of individuals with a university degree in the country.

These studies advance our knowledge about differences between countries in cultural stratification, but are sometimes limited because of weaknesses in research design or statistical procedure. For example, the cross-national comparisons are often based on national surveys drawn from different sources and using measures that are not standardized (Katz-Gerro, 2002, 2006, 2011). In addition, the analytic strategy is not always standardized across countries, such as in the case of applying a different latent class model in each country (Coulangeon and Roharik, 2005), thus limiting the comparative power of the analysis.

Finally, in some studies the original operationalization of omnivorousness that is based on a division of tastes into highbrow, middlebrow, lowbrow, and on the extent to which they mix in a person's cultural repertoire is not followed (Coulangeon, 2005; Lizardo, 2006; Lizardo and Skiles, 2009). Thus, Peterson's (2005) emphasis on the importance of separating the level of cultural clusters (highbrow, middlebrow, lowbrow) from the breadth of cultural preferences (combining the different levels) is compromised.

We build on the results of existing cross-national comparative research. We focus on three country level variables that we expect will have an effect on cultural omnivorousness: education, age, and political orientation. Education is the single most important factor in shaping cultural preferences. At the country level, we expect that the average educational level in a country will influence cultural breadth. We follow DiMaggio's (1987:447-8) discussion of arts classification systems (ACS), arguing that greater access to higher education produces arts classification systems that are less hierarchical, and thus more open. We expect that the association between highbrow taste and non-highbrow taste will be stronger in countries with higher average educational levels, indicating that individuals with highbrow preferences are omnivores rather than snobs.

Age is another central variable that affects consumption patterns. Numerous studies have reported that an individual's age is associated with different cultural consumption preferences (Coulangeon, 2003; López-Sintas and García-Álvarez, 2002a, 2002b; Purhonen et al., 2009; Tampubolon, 2008; Van Eijck, 2001). However, the direction of the effects of age shows inconsistent patterns. For example, some studies find that younger individuals, rather than inactive individuals or highbrows, are more likely to be omnivores (Chan, 2010; Van Eijck, 2001), while others report that omnivorousness is associated with older age (Katz-Gerro, 1999). At the country level, we expect that older populations will be associated with a more closed cultural system and with less omnivorousness.

Finally, we model the effect of political orientation at the country level. In addition to general reports on the importance of a country's political orientation in addressing social issues (Jackman and Muha, 1984; Taylor-Gooby, 1986), several studies have looked at political orientation specifically in relation to cultural consumption. Bermudez and Sanchez (2009) show how political orientation affects cultural consumption. Fox and Williams (1974) and later Peterson and Christenson (1987) study the association between a set of musical genres and individual political orientation. They find that musical preferences vary according to political orientation: liberal individuals like popular genres, and conservative individuals prefer middlebrow genres. Bryson (1996) also demonstrates how political tolerance is associated with taste tolerance. With our international data set we have a unique opportunity to examine the effect of this variable at the country level. We hypothesize that the more liberal a country on average, the less evidence we will find of cultural stratification.

RESEARCH DESIGN

Research Questions

The goal of this paper is to explore cultural stratification in a European data set in two respects. First, we ask whether there is cross-national similarity in individual level socio-demographic characteristics that are associated with breadth of musical tastes, controlling for individuals' highbrow musical tastes. Second, we ask whether breadth of musical tastes (controlling for highbrow taste) is associated with country characteristics.

Data

We draw our data from the Eurobarometer database collected during the autumn of 2001 (Christensen, 2002). The Eurobarometer 56.0 wave includes a special module of questions related to participation in a wide variety of cultural activities.

The Eurobarometer samples consist of separate multistage national probability samples of individuals at least 15 years of age and residing in 15 European Union countries in 2001. All interviews were conducted face-to-face at respondents' homes and in the appropriate national language. Table 1 presents the list of countries.

There are 17 sampling areas because Germany and United Kingdom are divided into two sampling areas (East and West Germany; Great Britain and Northern Ireland). In the discussion below we use the word "country" to refer to sampling area. All country sample sizes are circa 1000 individuals, except for Northern Ireland (N=305) and Luxembourg (N=609) (see Christensen, 2002 for further details).

Country samples are proportional to country size, but are not representative of countries themselves. Rather, the whole sample is representative of the EU-17 countries. From the Eurobarometer database we obtain a weighting variable that ensures that each national sample is representative with respect to basic demographic variables, and, additionally, corrects for cross-national differences in the sample versus population size. The data set has a significant weakness due to many missing values on the income variable. As the next section describes, we try to solve this limitation by conducting multiple imputations of missing data,.

Variables

Multiple Imputations

The subset of the data that excludes missing cases (mainly due to missing income data) reduces the original sample from 16,200 to 8000 individuals,[2] rendering the subset unrepresentative of the European Union. Inadequate treatment of missing values, then, could produce a bias in the parameters estimated, as well as in the generalizability of the results, two problems that have beset previous research. For instance, recently Tampubolon (2008) has shown that Bryson's (1996) findings and interpretations are biased due to her decision to exclude missing values from her analysis, creating an overrepresentation of educated

[2] See, for example, the works of Coulangeon (2005) and Coulangeon and Roharik (2005).

respondents in the sample analyzed. Therefore, we impute the missing values of the independent variables (income level being the most problematic variable) before conducting the analysis. To recover missing values we use the *transcan* function in Harrell's (2001) Hmisc package. *Transcan* automatically transforms continuous and categorical missing values to have a maximum correlation with the best linear combination of all predictors. Table A1 in the appendix shows the mean values before and after the imputations. Note that the majority of missing values are for income, political orientation, and education.

Measuring Omnivorousness: Breadth of Musical Tastes

The Eurobarometer data include a question on musical preferences that asks "what kinds of music do you listen to?" and lists the following multiple answers: classical music, opera/operetta, rock/pop, hard rock/heavy metal, easy listening, dance/house, techno, rap, jazz/blues, folk/traditional, and world music. We consider questions about listening habits a better approximation of musical tastes than questions about musical preferences, because they signal commitment rather than being simply a statement about preferences.

Highbrow taste. We examine the effect that highbrow taste has on listening preferences regarding other levels of genres, for example, lowbrow and middlebrow genres. Such an examination will indicate the extent of omnivorousness in cultural preferences as combined highbrow and middlebrow breadth, or combined highbrow and lowbrow breadth. In our operationalization of highbrow taste, we follow previous research (Peterson and Kern, 1996) and use classical music and opera as indicators of highbrow music genres.

Non-highbrow tastes. Peterson and Kern (1996) consider five music genres as lowbrow: country music, bluegrass, gospel, rock, and blues; and three genres as middlebrow: mood/easy listening music, Broadway musicals, and big band music. Peterson and Kern base this classification on previous research on musicology, and on the characterization of genres in terms of their association with marginal or elite groups and their commercial potential (Peterson and Kern, 1996:901). Given the multiplicity of genres in our data and the multi-country sample, in our analysis we choose to diverge from Peterson and Kern's classification of genres to avoid imposing the interpretations of music genres from the American context onto the European context.

Therefore, we base the middlebrow and lowbrow measures on individuals' interdependent tastes, and use a statistical tool based on the association among musical indicators to produce a classification of genres. As the indicators of listening to music genres are categorical, we use a multiple correspondence analysis.[3]

Figure 1 plots musical genres into two classes.[4] One class comprises rap, dance/house, techno, metal, and rock, and explains 81% of the variation. Another class comprises world music, folk, easy listening, and jazz, and explains 4% of the variation. Attempting to accurately label these classes of genres is not an easy task, not only because there is no clear underlying artistic tradition that connects several genres clustered together, but also because similar groupings have been labeled in different ways in previous studies (e.g., popular, folk, pop, lowbrow). At the same time, the labels are required for the convenience of the discussion, and we therefore think of them as very general names for each class of genres.

[3] We also conducted an exploratory factor analysis, and the results converged.
[4] Note that these are classes of music genres, not groups of individuals.

Our method of analysis produces a classification that indicates "brow levels." This terminology follows a strategy adopted in research on cultural consumption and stratification (e.g., Roose and Vander Stichele, 2010), but differs from Peterson and Kern's (1996) analysis in the specific list of music genres included in each level. We identify clusters of cultural expressions that are the manifestation of cultural schemes, rhetoric, and discourses (Sonnett, 2004).

This method also emphasizes a hierarchy among brow levels, which is a result of their association with privileged social classes and a judgment of their social value.

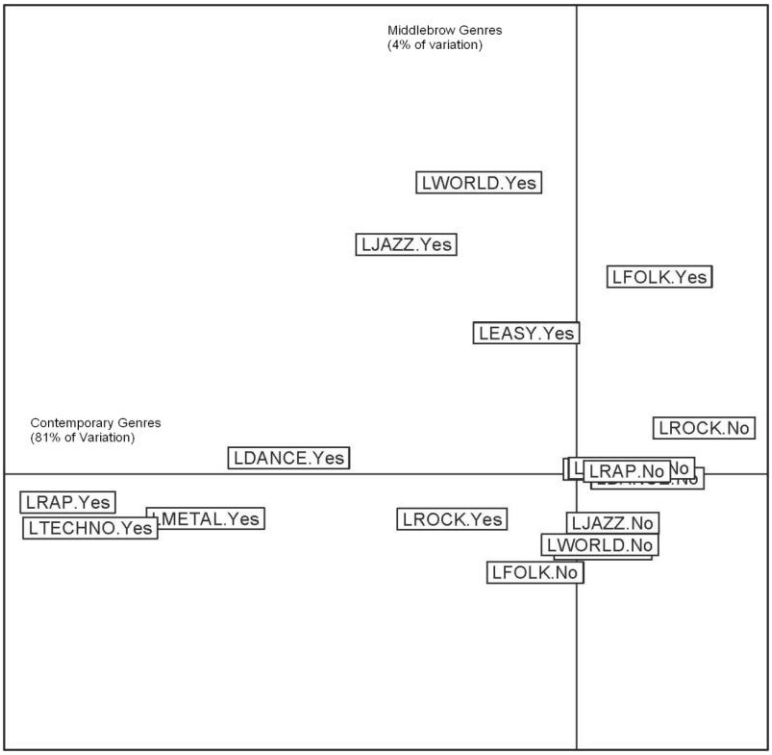

Figure 1. Classification of music genres.

Our strategy should not be confused with an approach that emphasizes the clustering of the individuals themselves and the meaning of the content of the cultural schemes to them (e.g., Bellavance, 2008; Bennett et al., 2009; Savage, 2006; Savage and Gayo, 2011; Van Eijck and Lievens, 2008; Warde, Wright, and Gayo, 2008). The two classes we find are clearly different from a highbrow music category, but it is not clear whether one group can be dubbed as middlebrow and the other as lowbrow. We label the first class as *contemporary* genres (rap, dance/house, techno, metal, and rock) and the second class as *middlebrow* genres (world music, folk, easy listening, and jazz).[5]

[5] We estimated an additional multiple correspondence analysis including the indicators of listening to classical music and opera to determine whether including these two indicators could change the interpretation that we suggested. The general pattern does not change: listening to classical music and opera are simply located on the top of the second, middlebrow axis. The first axis explains 60% of the variation and the second axis 21%.

Table 1. Musical tastes and omnivorousness in contemporary and middlebrow scale (in %, except for means)

Country	Sample size	Average weight	Rap/ Hip Hop	Dance/ House music	Techno	Heavy Metal	Rock	Mean contemporary omnivorous scale	World music	Folk/ Traditional music	Easy listening	Jazz Blues	Mean middlebrow omnivorous scale
Austria	1093	0.34	10.7	12.7	11.3	11.8	44.9	0.92	33.3	41.0	8.2	19.4	1.02
Belgium	1031	0.43	8.9	16.3	12.5	7.4	60.9	1.06	20.8	21.2	37.2	14.0	0.93
Denmark	1001	0.22	8.2	20.3	9.4	10.4	70.6	1.19	16.8	32.8	48.5	31.1	1.29
Finland	1023	0.21	9.0	39.7	13.3	12.7	41.4	1.16	20.9	27.9	69.6	18.7	1.37
France	1002	2.42	13.2	17.3	19.5	8.6	65.6	1.24	24.7	16.1	30.6	23.0	0.94
E. Germany	1024	0.67	8.4	19.8	13.6	10.6	48.1	1.01	33.0	44.4	23.1	10.6	1.11
W. Germany	1023	2.87	9.8	18.3	11.6	10.1	50.7	1.01	25.8	36.9	20.1	12.6	0.95
G. Britain	1041	2.37	10.9	23.0	6.3	11.3	58.9	1.10	8.6	15.5	53.4	16.5	0.94
Greece	1001	0.45	3.6	16.7	4.2	4.7	25.8	0.55	11.6	59.2	19.4	12.9	1.03
Ireland	1002	0.22	3.9	12.5	2.5	9.2	44.7	0.74	7.2	34.9	40.3	11.4	0.94
Italy	998	0.15	8.4	21.0	5.9	5.6	40.7	0.82	12.4	16.2	24.1	18.0	0.71
Spain	1000	1.70	4.9	12.4	10	7.6	52.4	0.87	8.4	34.8	28.5	11.5	0.83
Luxemburg	609	0.03	13.3	23.8	18.9	17.7	60.9	1.37	29.9	22	39.2	29.2	1.20
Netherlands	1047	0.65	13.3	26	9.5	12.7	55.5	1.17	20.2	23.1	42.4	22.5	1.08
Portugal	1000	0.42	7.2	11.1	7.5	7.7	33.9	0.67	26.7	59.5	23.4	7.2	1.17
Sweden	1000	0.37	10.3	27.1	12.2	17	60.5	1.27	17.6	42.7	45.9	29.5	1.36
N. Ireland	305	0.22	3.9	21.3	3.9	6.6	48.2	0.84	8.2	31.5	44.6	8.2	0.93
			9	20	10	10	51	0.99	19	33	35	18	1.05

Note: All columns are percentages except sample size and contemporary and middlebrow means.

Again, we emphasize that we do not imply that the contemporary genres are not middlebrow or that the middlebrow genres are not contemporary; rather we use the general labels for the benefit of an orderly discussion.

Table 1 shows the distribution of musical tastes by country. It also includes the middlebrow and contemporary scales by country formed by summing up tastes according to the classification shown in Figure 1. Note that countries seem to cluster together in two groups, whereby central and northern European countries have a greater percentage of people who like contemporary music genres and a lower percentage that prefer middlebrow music than do southern European countries.

Our model explores the correlates of Europeans' breadth of contemporary and middlebrow musical tastes when controlling for highbrow taste by using predictors at the individual level and at the country level. This approach allows us to determine the factors that shape the omnivorousness that combines highbrow and middlebrow preferences and the omnivorousness that combines highbrow and contemporary preferences. We apply a hierarchical modeling technique to account for the multilevel structure of the data. We organize the effects at the individual and country levels hierarchically because we posit that the country context affects the taste patterns above and beyond individuals' socio-demographic characteristics. We next describe the individual level and country level variables.

Individual Level Socio-Demographic Variables

The variable for gender is coded 1 for female, and male is the reference category. Educational level is measured as the difference from the country's mean years of education. If the individual was still studying when interviewed, we set years of education equal to the respondent's age at the time of the completion of education.[1] Marital status is coded 1 for respondents who do not live with a partner, and 0 for those who live with a partner. Household income, measured in quartiles, is a self-assignment into the national distribution of income. For occupation we use the same occupation scale as in the Eurobarometer: 1) self-employed (reference category), 2) managers, 3) other white collar jobs, 4) manual workers, 5) housewives, 6) unemployed, 7) retired, 8) students. Urban status is coded 1 for respondents who live in a large town and 0 for those who do not (the reference category). Political orientation is measured on a continuous scale that runs from leftist opinions (1) to rightist opinions (10) and is centered on the country's mean (see Table A1 in the appendix).

Country Level Variables

At the country level, we explore the role that the main axes of social stratification play in shaping the breadth of Europeans' musical tastes. It is possible to obtain country level data from national statistics sources, but this option does not consider possible discrepancies between an indicator drawn from an external source and the characteristics of the sample as they are represented by the specific indicator. Our strategy is to use information from the data set to aggregate individual indicators in order to obtain country indicators. We measure a country's educational level, age, and political orientation by the degree to which they differ from the overall European mean. Such approach is customary in the literature (Aitkin and Longford, 1986; Hox, 2002; Paccagnella, 2006; Raudenbush and Bryk, 2002). An additional

[1] We do so because the question is phrased: How old were you when you completed your education?

country level variable that would have been relevant is economic capital. However, we measure income in the survey as a subjective self-classification within the distribution of income in the respondent's country. This indicator does not provide a proper measure of level of income to use in a comparative analysis.

Analyses

We are interested in distinguishing between the effects of individual characteristics and country characteristics on individuals' breadth of contemporary and middlebrow musical tastes, while controlling for individual highbrow taste. We seek to separate within-country differences from between-country differences. For instance, if the educational level of an individual is a proxy for cultural resources, we expect that it will be a less significant proxy in countries with higher levels of education. Therefore, individual observations are not independent, so conventional regression analysis is inappropriate in this case. This situation requires a multivariate analytical technique capable of accounting for the multilevel structure of the data in determining regression coefficients and standard errors (Hox, 2002; Raudenbush and Bryk, 2002).

A multilevel model adjusts for varying country-level characteristics by separating out within-country variance from between-country variance. By doing so, we can use two sets of variables to explain the effects of both levels of variation on individuals' breadth of musical tastes. In building the multilevel model we follow a bottom up approach (Luke, 2004: 23). Specifically, the first stage of the analysis estimates within-country parameters (level-1 predictors). These parameters can be random (allowed to vary randomly across units) or fixed (set as controls with no parameter variance across countries). Once we identify the structural model with the best statistical fit, we analyze only between-country variations in the random parameters, examining the explanatory power of between-country variables on within-country random parameters (intercepts and slopes) produced as part of the first stage analysis. Table 1 shows that country samples are not proportional to actual population sizes. In order to make inferences regarding the entire European population, re-weighting is necessary to ensure the pooled sample represents the population (Bijmolt, Paas and Vermunt, 2004; Steenkamp and Hofstede, 2002). With that goal in mind, we weight each observation by sample size relative to population size per country with the weights in the Eurobarometer (see Table 1).

Model Selection

We follow a sequential process for selecting the model that best describes the factors behind the music genres to which respondents listen. Our premise is that a linear model generates breadth of musical tastes so that $f(y|x,\beta)=\mathbf{X}'\beta+e_{ij}$, where denotes the vector of individual level predictors (income, educational level, occupation, age, gender, marital status, urban status, political orientation, and highbrow taste), and denotes the vector of the model's coefficients.

First, we estimate a random intercepts model (M0 in Table 2, with no predictors but allowing the intercept β_{oj} to vary randomly between countries, u_{0j}, around a mean value

α_{00}, so that $\beta_{0j} = \alpha_{00} + u_{0j}$).[2] We have two models, one for contemporary breadth and the other for middlebrow breadth. Recall that we enter highbrow taste as an individual level predictor.

Next, we add individual-level main effect predictors as fixed parameters: income, educational level, occupation, age, gender, marital status, urban status, political orientation, and highbrow taste. Country effects are modeled as random effects (M1). We then compare alternative models by computing the difference in the deviance between models.

This difference approximates a chi-square variate with the difference in the number of parameters of both models as degrees of freedom (see M1 row in Table 2).

Finally, we add some complexity and test additional models with interactions among individual-level variables in order to fully describe the social processes behind their cultural preferences (see models M2 to M6). In model M2 we introduce the interaction between age (centered on the country's mean) and income (categorical). Model M3 introduces the interaction between age and education level (centered on the country's mean). Model M4 introduces the interactions among age, education level and income. Model M5 explores the interaction between gender and education level. Finally, model M6 examines the interactions among gender, education level and income. To date, it has not been customary to test for higher order interactions in linear models, due to the fact that it is difficult to interpret them without the help of intensive computation procedures.

However, we take advantage of recent advances in statistical software design (Imai, King and Lau, 2008, 2009) aimed at aiding researchers in interpreting statistical models. Hence, Model M7 introduces predictors in the random mean, and model M8 introduces predictors in the highbrow random coefficient.

We estimate all of the models with Baily and Alimadhi's (2007) linear mixed model implemented in the Zelig statistical library (Imai et al., 2008, 2009).

From model M7 onwards we start explaining country level variations in individual cultural preferences. First, we model differences in a country's mean level of musical tastes, adding pooled differences in countries with regard to age, educational level, and political orientation (M7 where $\beta_{0j} = \alpha_{00} + \mathbf{Z}\boldsymbol{\alpha}_0 + u_{0j}$, is modeled as follows: α_{00} is the pooled countries' mean effect, is the vector of country predictors, $\boldsymbol{\alpha}_0$ is the vector of coefficients, and u_{0j} is the country's mean random variation). In model M8 we introduce highbrow taste as a random coefficient (M8 where $\beta_{kj} = \alpha_{k0} + \mathbf{Z}\boldsymbol{\alpha}_k + u_{kj}$, is modeled as follows: α_{k0} is the mean highbrow effect, $\mathbf{Z}'$, the vector of country predictors, $\boldsymbol{\alpha}_k$, the vector of coefficients, and u_{kj}, the random variation in highbrow taste).

[2] We estimate all multilevel models using the linear mixed model of the library Zelig (Bailey and Alimadhi, 2007) implemented in the R language and an environment for statistical computing (R core team 2009).

Table 2. Model selection

Model	Contemporary musical tastes					Middlebrow musical tastes				
	df	AIC	Test	Chisq	P-value	df	AIC	Test	Chisq	P-value
M0	3	50029				3	44238			
M1	21	42710	M0vs.M1	7356	<0.001	21	43266	M0vs.M1	1008	<0.001
M2	27	42698	M1vs.M2	23.9	<0.001	27	43270	M1vs.M2	7.68	0.26
M3	29	42697	M2vs.M3	4.94	0.084	23	43222	M1vs.M3	47.5	<0.001
M4	38	42685	M2vsM4	34.7	<0.001	38	43212	M3vs.M4	40.5	<0.001
M5	39	42687	M4vs.M5	0.36	0.55	39	43210	M4vs.M5	3.86	0.049
M6	45	42694	M4vs.M6	5.21	0.63	45	43194	M5vs.M6	27.8	<0.001
M7	41	42670	M4vs.M7	21.6	<0.001	48	43198	M6vs.M7	2.51	0.47
M8	47	42610	M7vs.M8	71.4	<0.001	*76*	*42991*	*M7vs.M8*	*43.2*	*<0.001*

Findings

As explained above, we estimate a multilevel model using two emphases. First, we nest individuals' characteristics within countries. Second, the effect of having a highbrow musical taste on omnivorous musical tastes can differ from country to country according to several country predictors. When we decompose the variances into individual and country components -- the intra-class correlation coefficient -- the results suggest that the null model country variation accounts for only 3% of the total variation. This number goes up to 5% when we introduce individual level predictors into the contemporary tastes model. Indeed, in Table 1 we see the minimal degree of variation among countries. The countries' mean breadth of musical tastes is low (around 1) and varies between 0.55 (Greece) and 1.37 (Luxemburg) for contemporary musical tastes, and between 0.84 (Spain) and 1.37 (Finland) for middlebrow musical tastes.

The Effect of Individual Level Variables on Breadth of Musical Tastes

In Tables 3 and 4, we see that after we add individual level variables to the middlebrow model, both error variances for country level, u_{0j}, and for individual level, e_{ij}, decline. However, for the contemporary model, individual level error variance declines much more while the country error variance increases. This result suggests that for contemporary taste, country level variables have a greater effect in explaining the number of musical tastes that individuals have. We point to two general findings: highbrow taste positively affects breadth of taste in both models, and fewer effects achieve statistical significance for the middlebrow model than for the contemporary model.

The effects of single independent variables are not at the center of our analysis, as they replicate previous findings. The novelty of our analysis lies in the interactions between factors. For a more convenient display of the interaction effects,

Table 3. Coefficients from multilevel analysis of breadth in middlebrow genres

Fixed effects:	Null Model	Individual Model	Country Model
Intercept, α_{00},	1.038***	0.969***	-0.932
Income: 2nd Quartile		-0.007	-0.003
Income: 3rd Quartile		0.044	0.048
Income: 4th Quartile		0.168***	0.174***
Education (centered on the country's mean)		0.007	0.007
Large town: Yes		-0.012	-0.014
Highbrow musical tastes,		0.557***	-1.310
Age (centered on the country's mean)		0.006***	0.006***
Age^2		-0.0001***	0.0003***
Gender: Female		0.023	0.030
Marital status: Not living with a partner		-0.022	-0.021
Political orientation (centered on the country's mean)		-0.016***	-0.015***
Occupation scale: Managers		0.120**	0.116**
Occupation scale: Other white collar workers		0.025	0.028
Fixed effects:	Null Model	Individual	Country

		Model	Model
Occupation scale: Manual workers		0.048	0.047
Occupation scale: Housewives		-0.014	-0.011
Occupation scale: Unemployed		0.068	0.071
Occupation scale: Retired		0.049	0.051
Occupation scale: Students		0.793***	0.809***
Income:2nd Quartile*Age		0.000	-0.000
Income:3rd Quartile*Age		0.001	0.001
Income: 4th Quartile*Age		-0.000	-0.001
Education*Age		-0.001**	-0.001**
Income: 2nd Quartile*Education		0.020*	0.020*
Income: 3rd Quartile*Education		0.018*	0.019*
Income: 4th Quartile*Education		-0.003	-0.003
Income: 2nd Quartile*Age^2		0.000	0.000
Income: 3rd Quartile*Age^2		0.000	0.000
Income: 4th Quartile*Age^2		-0.000	-0.000
Education*Age^2		0.0001**	0.0001**
Education* Gender: Female		0.004	0.005
Income: 2nd Quartile*Gender: Female		0.077	0.069
Income: 3rd Quartile*Gender: Female		-0.017	-0.024
Income: 4th Quartile*Gender: Female		-0.082**	-0.090**
Income: 2nd Quartile*Education*Age		-0.001**	-0.001**
Income: 3rd Quartile*Education*Age		0.000	0.000
Income: 4th Quartile*Education*Age		0.000	0.000
Income: 2nd Quartile*Education*Age^2		-0.0001*	-0.0001*
Income: 3rd Quartile*Education*Age^2		-0.000*	-0.0001*
Income: 4th Quartile*Education*Age^2		-0.000	0.000
Income: 2nd Quartile*Education *Gender: Female		-0.018*	-0.018**
Income: 3rd Quartile*Education *Gender: Female		-0.000	-0.001
Income: 4th Quartile*Education *Gender: Female		-0.006	-0.007
Fixed Effects (country level)			
Average age in the country,			0.013
Average political orientation of the country,			0.148
Average educational level of the country, α_{03}			0.034
Hihgbrow*Average age in the country,			0.050
Hihgbrow*Average political orientation of the country, α_{h2}			0.245 (0.325)
Hihgbrow*Average educational level of the country, α_{h3}			-0.101**
Random effects (country level):			
Intercept, u_{0j},, Variance (Standard deviation)	0.032 (0.178)	0.026 (0.162)	0.023 (0.153)
Individual level, e_{ij}, Variance (Standard deviation)	0.897 (0.947)	0.839 (0.916)	0.836 (0.915)
Highbrow, u_{hj}, Variance			0.057 (0.239)
Correlation			0.254

*** p-value equal or less than 1%.
** p-value equal or less than 5%.
* p-value equal or less than 10%.

Table 4. Coefficients from multilevel analysis of breadth in contemporary genres

	Null models	Structural model	Country effects
Fixed effects:	Estimate	Estimate	Estimate
Intercept, α_{00},	0.988***	0.781***	2.600***
Income:2nd Quartile		-0.001	-0.001
Income:3rd Quartile		-0.022	-0.019
Income:4th Quartile		0.054	0.055
Education (centered on country's mean)		0.001	0.002
Large town: Yes		0.070***	0.070***
Highbrow: musical tastes,		0.206***	-1.660
Age (centered on country's mean)		-0.037***	-0.037***
Age^2		0.001***	0.001***
Gender: Female		-0.155***	-0.155***
Marital status: Not living with a partner		0.051*	0.052*
Political orientation (centered on country's mean)		-0.005	-0.004
Occupational scale: Managers		0.066	0.063
Occupational scale: Other white collar workers		0.124**	0.126**
Occupational scale: Manual workers		0.123***	0.121***
Occupational scale: Housewives		0.009	0.014
Occupational scale: Unemployed		0.136**	0.141**
Occupational scale: Retired		-0.059	-0.056
Occupational scale: Students		0.236**	0.257**
Income:2nd Quartile*Age		0.002	0.001
Income:3rd Quartile*Age		0.002	0.002
Income:4th Quartile*Age		0.000	-0.001
Education*Age		0.000	<0.0001*
Income:2nd Quartile*Education		0.006	0.006
Income:3rd Quartile*Education		0.004	0.004
Income:4th Quartile*Education		-0.003	-0.004
Income:2nd Quartile*Age^2		0.000	0.000
Income:3rd Quartile*Age^2		0.000	0.000
Income:4th Quartile*Age^2		0.000	0.000
Education*Age^2		0.000	0.000
Income:2nd Quartile*Education*Age		0.000	0.000
Income:3rd Quartile*Education*Age		0.0001**	0.001
Income:4th Quartile*Education *Age		0.000	0.000
Income:2nd Quartile*Education*Age^2		0.000	0.000
Income:3rd Quartile*Education*Age^2		0.000	0.000
Income:4th Quartile*Education*Age^2		0.000	0.000
Fixed Effects (country level)			
Average age in the country,			-0.034
Average political orientation of the country,			-0.367*
Average educational level of the country, α_{03}			0.103***

	Null models	Structural model	Country effects
Fixed effects:	Estimate	Estimate	Estimate
Highbrow *Average age in the country,			0.007
Highbrow *Average political orientation of the country,			0.649*
Highbrow *Average educational level of the country, α_{h3}			-0.116*
Random effects (country level):			
Intercept, u_{0j} (standard deviation)	0.0412 (0.203)	0.045 (0.213)	0.012 (0.112)
Individual level, $\mathbf{e_{ij}}$ (standard deviation)	1.283 (1.133	0.813 (0.902)	0.81 (0.899)
$\boldsymbol{u}_{kj}$			0.053 (0.229)
Correlation			-0.299

*** p-value equal or less than 1%.
** p-value equal or less than 5%.
* p-value equal or less than 10%.

Figure 2 presents the predicted net effect of the continuous indicators, age and education, conditioned on individuals having highbrow taste. In addition, we also present the net effect of the categorical variables. To create the plot, we enter values for the other independent variables as follows: we represent continuous variables by their mean value, and categorical variables by their most frequent value. The top two graphs report the results of predicting the musical tastes of 1000 individuals according to their age, and the bottom two graphs report the results for education.

The top left panel of Figure 2 displays the confidence interval for the *contemporary model* for the range of ages, conditioned on having highbrow musical taste.[1] For both highbrow and non-highbrow individuals, the predicted number of contemporary musical tastes is associated with a younger age.

Younger individuals listen to more contemporary music genres, while the range of genres is limited for older individuals, and even more limited for those approaching their country's mean age.

Younger respondents listen to an average of three genres, and the average for the European sample is 0.99 for contemporary musical genres. Older respondents report fewer contemporary tastes, with a minimum of 0.5 musical genres when they are 20 years older than their country's mean age. This finding remains constant irrespective of whether they have highbrow or non-highbrow taste.

[1] Ages displayed range from 40 years below the average to 60 years above. However, from 30 years above the average, the confidence intervals increase, meaning there are very few individuals of that age in the sample.

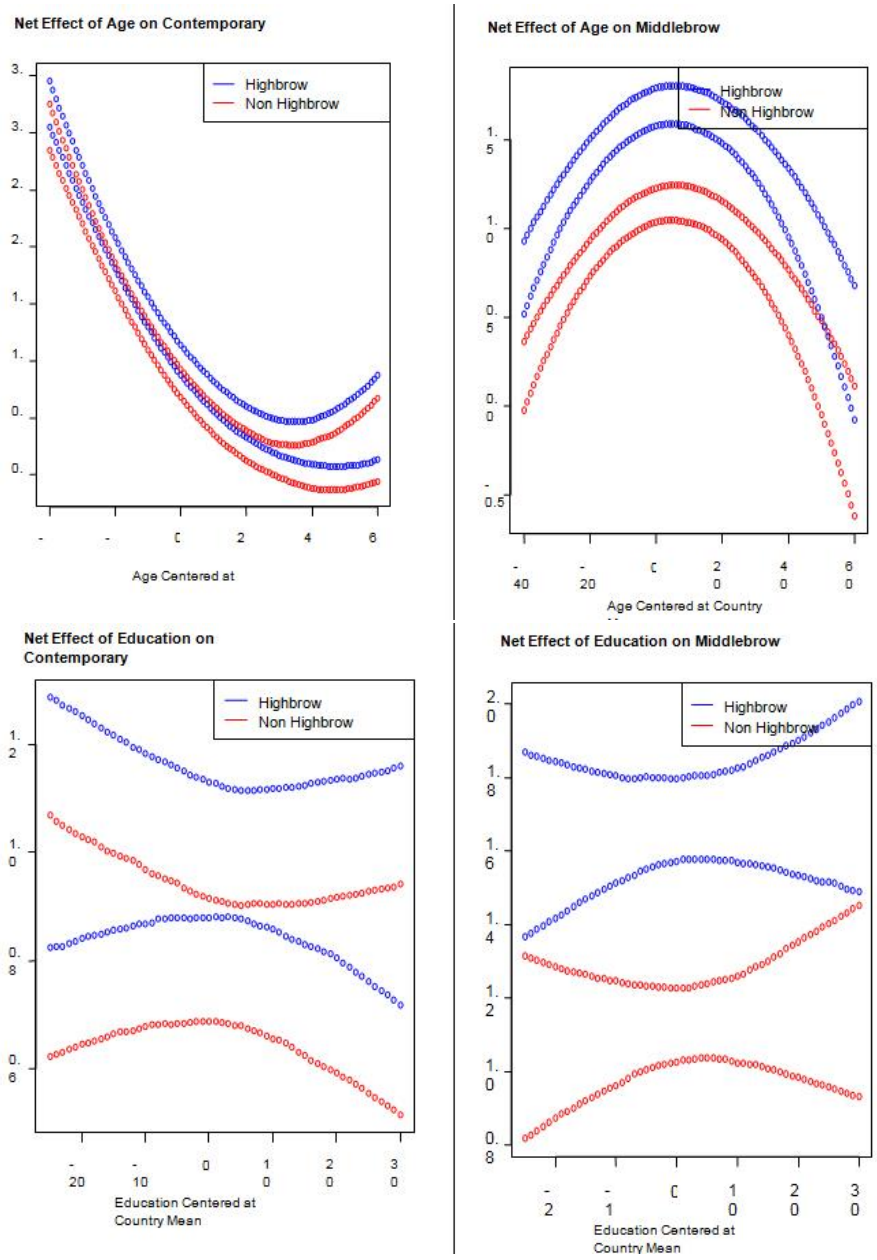

Figure 2. The net effect of age and education on breadth, conditioned on highbrow taste.

The effect of age on the number of *middlebrow musical genres* in the top right panel follows a similar pattern of variability, but the results are different from contemporary genres. Confidence intervals are again larger for individuals with highbrow taste and for those younger or older than the country's mean, but here older individuals are more middlebrow omnivorous than younger individuals. The number of middlebrow music genres is higher for respondents up to 10 years older than the country's mean and lower for older respondents. Thus, highbrow individuals prefer a greater breadth of contemporary and middlebrow music

than non-highbrows. Furthermore, younger individuals listen to more contemporary genres and less to middlebrow genres than older individuals.

The net effect of education on the breadth of contemporary and middlebrow music genres, conditioned on highbrow taste, is higher for individuals with highbrow taste, especially for individuals with 10 years of schooling more than the country's mean level (the pooled countries' mean is 15 years, varying from 12 years for Portugal to 19.85 for Denmark). For the number of contemporary music genres (see the bottom left panel), only the interaction between education and income (the third quartile) and age is significant. For middlebrow music genres (see the bottom right panel), the net effect of education is positive (its interaction with age and income is significant) and with less variance than for contemporary music genres. Even though the net effect of education is positive for both levels, and higher for those who like middlebrow music genres, the fact that highbrow taste interacts with education, income, age and gender makes its effect variable, depending on the level of those predictors.

We turn now to the net effect of the categorical variables in the interactions. We compare the net effect of income to the reference category, individuals in the lowest quartile of the income distribution. In the contemporary model without country predictors, the effect of income in the third quartile interacts with age and level of education. In the middlebrow model, respondents in the second and third income quartiles listen to more musical genres than respondents in the first quartile. Education has a positive effect in all income quartiles. Thus, among wealthier individuals, age and education increase the positive effect of income on breadth of middlebrow musical genres.

Gender interacts with education and income. The net effect of being a woman on the number of middlebrow music genres when we fix education at five years above the country's mean is positive, but moderated by income. The positive effect of gender is lower for women with a higher income. Indeed, for women in the fourth quartile of the income distribution, the effect of education is negative.

Living in a large town and being single has a positive and significant effect on number of contemporary music genres. The effect of individual political orientation on number of middlebrow genres is negative. In terms of occupation, managers and students are more likely to listen to middlebrow genres than the self-employed and white collar employees, manual workers, the unemployed, and students are more likely than the self-employed to listen to contemporary musical genres.

The Effect of Country Characteristics on Breadth of Musical Tastes

Our models depict differences among countries that individual characteristics alone do not explain. They also enable us to interpret the effect of being a highbrow consumer in different countries. In Tables 3 and 4 we see that country error variance drops (from 0.045 to 0.012) when we incorporate country predictors into the contemporary model; the reduction is lower for the middlebrow model (from 0.026 to 0.023). Once again, the random components of the model suggest that two different social processes create the number of both the contemporary and middlebrow music genres preferred.

Country level predictors suggest that for the same value of individual level predictors, the country's characteristics affect the number of contemporary genres to which its residents listen. The higher the country's educational level, the greater the breadth of contemporary music genres. In addition, individuals in countries more affiliated with the right side of the

political spectrum report listening to fewer contemporary music genres. The positive effect of highbrow taste on the number of contemporary genres to which ones listens is higher in countries that lean politically to the right, and is lower in countries with a higher mean level of education. As for the middlebrow model, fewer effects achieve statistical significance. However, as is the case with contemporary taste, the strength of the positive effect of highbrow taste on the number of contemporary forms to which one listens declines as the mean level of education in the country increases.

DISCUSSION

This paper seeks to advance research on cultural stratification in two ways--by presenting a cross-national comparative analysis, and by distinguishing between individual and country level correlates of breadth of musical tastes. By doing so, we acknowledge the role of the aggregate societal context in shaping cultural stratification. We ask whether social position variables have a differential effect on the breadth of musical tastes depending on where one lives. Instead of developing a model for each of the countries studied, we develop only one model and allow for differences among countries with regard to a set of predictors to explain the random mean level of breadth of tastes adjusted by social position.

In the analysis we include the variables reported in the literature as shaping the breadth of contemporary and middlebrow musical tastes, including highbrow taste, individual level socio-demographic characteristics, and the averages of education, age, and political orientation of countries in the EU. The comparative research setting we use reveals three important findings. First, the two levels of musical tastes, contemporary and middlebrow, are formed differently. Thus, we are better able to understand the correlates of breadth in contemporary listening habits than those in middlebrow genres. Perhaps the breadth in middlebrow musical preferences is a result of a more complex matrix of social influences that we have yet to theorize, because the common set of predictors is not very helpful in understanding variance in middlebrow taste. Second, country level variables correlate significantly with breadth of musical tastes. Thus, a country's mean level of education and political orientation affect individuals' breadth of cultural preferences. Third, the effect of highbrow taste on the breadth of contemporary and middlebrow taste varies between countries, and depends on the average level of education and political orientation in that country.

A higher educational level in the country is associated with a higher average breadth of contemporary genres for all individuals. A country's educational level also affects the degree to which individuals with highbrow musical tastes are exclusive in their breadth of middlebrow and contemporary tastes. In countries with a higher mean educational level, individuals with highbrow musical taste are more similar to individuals with non-highbrow musical taste. This finding supports DiMaggio's (1987) proposition that the educational level of a population affects the taste structure in that society. He suggests that the more educated a population, the more diversified its national arts classification system. Based on that suggestion, we expect that once adjusted for individual differences, Europeans' musical tastes would be more diverse in countries with a higher average educational level. Indeed, we find that differences in the average level of education in various countries may explain differences

among these countries with regard to their mean level of contemporary tastes, adjusted for individual differences. Thus, individuals living in more educated countries are more likely to prefer contemporary music. While previous research recognizes the centrality of individual educational attainment in shaping cultural capital, we present evidence as to the additional importance of the country's level of education. A higher average level of education in the country may contribute to a context of more open and diverse cultural tastes that are both accessible and legitimate.

Similarly, a conservative political orientation at the country level reduces the number of contemporary music genres to which all individuals listen. It also increases the effect of highbrow taste on individuals' breadth of contemporary as well as middlebrow music genres. Individuals with highbrow taste and a conservative political orientation are more inclusive in their musical preferences than non-highbrows in more conservative countries. To sum up, highbrow individuals are less distinct than non-highbrows in countries with a higher average education, and they are more distinct than non-highbrows in a context of political conservatism. In other words, a higher educational level in a country is associated with less hierarchical cultural classifications, while political conservatism as a country characteristic is associated with more cultural stratification. Another major finding is that age is one of the main axes of stratification of musical tastes: young individuals are the main listeners of contemporary music, and middle-aged individuals are the main listeners of middlebrow musical genres. At the country level, we expected that older populations would be associated with a more closed cultural system and with less omnivorousness, but we do not find any statistically significant effect of age at the country level. An additional set of findings that is unique to this analysis derives from the interaction terms. First, income seems to be a necessary but not sufficient condition for increasing the breadth of music genres to which one listens. Among the wealthier, education and age have a positive effect on both contemporary and middlebrow breadth. This interaction indicates that different types of capital--economic (income), human (education), and cultural (taste)--are in strong association, and their interaction increases their separate effects. Previous research has discussed the multiplication of advantage in different fields, such as the economic and the cultural, as a process that plays a role in the creation and reproduction of elite privilege. In light of the country level findings we present here, we argue that this process should also be theorized as part of a larger societal schema. For example, researchers should investigate how cultural policy, which is responsible for regulating access to cultural products and resources, may intervene in this process.A second conclusion from the interaction terms is that gender differences reported in the literature indicating that men tend to be more omnivorous than women should perhaps be reconsidered in light of our findings that the differences between men and women decline for wealthier and more educated women. The interaction between gender and education and income in predicting middlebrow taste shows that the gender gap is smaller for women with a higher income and greater education. This finding corroborates the interpretations of López-Sintas and García-Álvarez (2002a) and Katz-Gerro and Sullivan (2010) that the difference between men and women in cultural capital diminishes with more education and more income.

To sum up, our study advances existing research on cultural stratification by showing that different sets of underlying factors are associated with middlebrow and contemporary omnivorousness in Europe. Moreover, individuals with the same social characteristics but from different countries differ in the breadth of their musical tastes and in its determinants.

Finally, we show that breadth of tastes increases in countries with a higher average education and decreases in countries with a more conservative political orientation. Future research on the contours of cross-national variation in the determinants of various aspects of cultural consumption can further explicate persistent as well as changing processes of cultural stratification and cultural inequality. Such studies will provide more insights into cross-national variations in the degree of reproduction of cultural advantage, and identify the economic, educational, and cultural policy mechanisms that play a role in these processes.

ACKNOWLEDGEMENTS

We acknowledge funding from the Centre for Research and Studies in Humanities At UAB (Spain), ERDF (EU), the Spanish Ministry of Economics and Competition (grant # ECO2011-29558-C02-01) and the Generalitat de Catalunya (grant # 2009-SGR-411).

APPENDIX

Table A1. Descriptive statistics of independent variables

Variable	*Without missing values*	*With imputed missing values*
Nominal variables		
Household income		
1st Quartile	0.21	0.23
2nd Quartile	0.25	0.24
3rd Quartile	0.30	0.24
4th Quartile	0.29	0.29
Living in large town		
No	0.71	0.70
Yes	0.29	0.30
Marital status		
Living with partner	0.62	0.59
Not living with partner	0.38	0.41
Gender		
Male	0.48	0.48
Female	0.52	0.52
Occupation		
Self-employed	8%	8%
Manager	9.53	9.53
Other white collar workers	10.67	10.67
Manual workers	22.33	22.33
Housewives	11.93	11.93
Unemployed	5.63	5.63
Retired	21.36	21.36

Variable	*Without missing values*	*With imputed missing values*
Students	10.53	10.53
Continuous variables		
Political orientation	5.15 (1.95)	5.38 (2.13)
Education	17.27 (6.40)	15.96 (7.07)
Age	44.30 (18.05)	44.30 (18.05)

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