Mapping Shared Understandings Using Relational Class Analysis: The Case of the Cultural Omnivore Reexamined[1]

Amir Goldberg
Princeton University

What do sociologists mean when they describe culture as founded on "shared understandings"? Sharing an understanding does not necessarily imply having the same opinions but rather agreeing on the structures of relevance and opposition that make symbols and actions meaningful. Because meaning is contextual, different people might interpret the same reality in different ways. Yet standard quantitative sociological methods are not designed to take such heterogeneity into account. In this article, I introduce a new method—relational class analysis—that uses attitudinal data to identify groups of individuals that share distinctive ways of understanding the same domain of social activity. To demonstrate its utility I use it to reexamine the cultural omnivore thesis. I find that Americans' understandings of the social symbolism of musical taste are shaped by three competing logics of cultural distinction, in a manner that complicates contemporary sociological accounts of artistic taste.

INTRODUCTION

What do sociologists mean when they describe culture as a repertoire of shared understandings? Whereas early cultural sociologists drew on the

[1] The theoretical and methodological challenges this study seeks to address were formulated by Paul DiMaggio and were pursued through work in his research group at Princeton University. I would like to thank, first and foremost, Paul DiMaggio for his guidance and support as well as Matthew Salganik; Delia Baldassarri; Martin Ruef; Hana Shepherd; Scott Lynch; participants of the Theorodology Workshop, Sociology Department, Princeton University; participants of the Social Network Analysis Seminar, Oxford University; and the *AJS* reviewers for their valuable comments. Direct correspondence to Amir Goldberg, Department of Sociology, Princeton University, Wallace Hall, Princeton, New Jersey 08544. E-mail: amirg@princeton.edu

0002-9602/2011/11605-0001$10.00

notion of culture as fixed sets of internalized values and rules that consistently prescribe behavioral responses, contemporary theories maintain that social meaning is embedded in complex relational networks (Emirbayer 1997; Mohr 1998; Mohr and White 2008), infusing cultural objects with multivocality that can elicit a variety of shared understandings (Swidler 1986; Griswold 1987; Schudson 1989; Eliasoph and Lichterman 2003). If culture indeed inheres in the symbolic building blocks that are replicated, albeit unsystematically, across individuals, then a major challenge for sociology is to operationally define what these shared understandings are and how they can be measured. Such a task becomes particularly tricky when taking into account that people make sense of their everyday experiences as a function of their accumulated and idiosyncratic experiential knowledge of the world. It calls for a theoretical framework that is, on the one hand, amenable to empirical investigation but, on the other, refrains from simplistically reducing "shared understandings" to sets of independent attitudes and behaviors.

But mainstream quantitative sociological practice, which relies predominantly on methods that assume a linear relationship between a set of independent predictors and an outcome, is ultimately ill equipped to detect or account for such complexity (Abbott 1988). These conventional methods fall short of meeting the challenge of addressing cultural polysemy in two significant ways. First, they normally implicitly presuppose and consequently look for homogeneity in the relationship between explanatory variables and their predicted outcome. But not all people organize their thinking about the world in similar ways; their beliefs and behaviors cannot be reduced to one, singular regression line. As Jepperson and Swidler (1994) remind us, Durkheim long ago insisted that "shared" does not necessarily imply "universal." Moreover, "shared" does not necessarily imply "identical" either. People may have different behaviors or opinions on particular issues but still agree on their relative significance or the dimensions along which this significance is scaled (Martin 2000*a*). You and I may vehemently disagree on abortion, for example, yet still understand the debate to be hinged on women's right to command their bodies; others might see it predominantly as a matter of social welfare (Ferree 2003). The multivocality of social meaning therefore calls for a methodological approach that differentiates between groups who share an understanding of the structures of mutual relevance and opposition that define a particular domain, even if they take different positions on the elements that these structures comprise.

To address this challenge, I introduce the concept of *relationality*, which forms the basis for a method for identifying groups of individuals in multivariate data whose patterns of responses are similar—which I refer to as *relational class analysis* (RCA)—as a means to complement con-

ventional analyses that rely on central tendencies in aggregate data. Relationality is defined as the extent to which two individuals exhibit a similar pattern of association between measures of opinion on issues that constitute a particular social domain; it is interpreted as a measure of their shared understanding of the structure of that domain. A variety of methods for dealing with heterogeneity in multivariate data is available. But these methods either cluster respondents by comparing their responses independently, and consequently overlook relationships between variables, or look at the associations between all respondents' attitudes in the aggregate, without taking into account that different respondents might have different patterns of association. RCA, in contrast, induces shared understandings as emergent collective properties by simultaneously examining relationships between and within respondents' sets of attitudes.

Like other partitioning methods, RCA seeks to parse out groups, or classes, of like-minded individuals. Unlike these methods, however, it uses relationality to compare these individuals not on their attitudes per se but on the patterns of relations between their attitudes. It can be applicable to a variety of theoretical challenges that require solving the problem of population heterogeneity by detecting groups that vary with respect to patterns of relationship between variables. These may include the demarcation of groups whose ideas are structured by distinct institutional or cultural logics (Friedland and Alford 1991; Enfield 2000), the identification of cognitive schemata as supra-individual structures of representation (DiMaggio 1997), the operationalization of collective identity (Ashmore, Deaux, and McLaughlin-Volpe 2004), or the detection of strategies of action that groups of actors employ (Swidler 1986; Bourdieu 1990).

To demonstrate the applicability and utility of RCA as well as to flesh out the theoretical assumptions on which it is based I use it to reexamine a classic problem in the sociology of culture: the much-debated rise of the "cultural omnivore." Since Peterson's (1992) introduction of the cultural omnivore thesis almost 20 years ago, many studies have demonstrated the emergence of a new, inclusive logic of cultural distinction that has ostensibly supplanted, at least in Western societies, elitist preferences that follow a more old-fashioned rationale of highbrow versus lowbrow taste. More recent studies have qualified Peterson's thesis, arguing for greater heterogeneity in the manner by which omnivorousness is practiced. They mostly seem to accept, however, the assumption that cultural distinction is today largely organized along an axis of cultural inclusiveness. Using RCA to analyze Americans' musical preferences as tapped by the 1993 General Social Survey (GSS), I provide further support for Peterson's theory but also demonstrate the coexistence of two other competing and systematically overlooked logics of distinction: one that continues to distinguish between highbrow and lowbrow music, the other that distin-

guishes between traditional and contemporary musical preferences. These findings complicate, and in some ways challenge, contemporary understandings of cultural omnivorousness.

The remaining text is divided into four sections. The first provides an overview of the theoretical motivation for using relationality and RCA as a means to operationalize the notion of shared understanding. The second goes into detail in describing how relationality is computed and how RCA uses it to identify groups of individuals who share overlapping patterns of association in regard to a given social domain. In the third section, the value of RCA is demonstrated through the method's application to Americans' musical tastes. Finally, the fourth section concludes by discussing the methodological advantages and limitations of RCA, by offering further paths for enhancing it, and by suggesting the ways in which it can be useful in shedding light on the supra-individual mechanisms through which culture operates and evolves.

THEORETICAL FOUNDATIONS OF RELATIONAL CLASS ANALYSIS

The notion of shared representations is central to contemporary theories of culture (Berger and Luckmann 1966; Eliasoph and Lichterman 2003). It suggests that culture does not exist as an abstract entity entirely external to individuals but that it is simultaneously individuated and socially distributed. Shared representations are embodied in the signs that make up the symbolic and physical environments in which social actors operate—such as those produced by language, media, architecture, and art—as well as in the mental structures these actors use as cognitive processing mechanisms to organize their knowledge about the world. If "belonging" to a particular "culture" or "thought community" (Zerubavel 1997) implies that its members mediate their experiences using similar cognitive building blocks, then they presumably also employ similar reasoning in understanding and responding to the realities they encounter. But because these mental structures are not disseminated and enforced by a singular authoritative source—rather, they emerge and are constantly renegotiated through communicative interaction between individuals and the social institutions they produce—they are never implemented in identical forms across individuals. This makes defining and locating shared understandings a challenging task.

For example, consider the common portrayal of the American public as entrenched in a polarizing "culture war." Contrary to popular assertions, studies that probe Americans' beliefs find that, by and large, they do not neatly fall on either side of the cultural fault lines that supposedly divide American society and that the individuals' sociodemographic attributes

are, at best, weak predictors of their attitudes on a variety of social issues (DiMaggio, Evans, and Bryson 1996; Fiorina, Abrams, and Pope 2005; Fischer and Hout 2006; Baldassarri and Gelman 2008). Assuming that merely by virtue of being American they all frame these issues in similar ways, or that if disaggregated sociodemographically the structural causes for their different understandings can be fully accounted for, obscures the complex ideational heterogeneity that underlies American political culture. Thus in order to delineate the shared understandings that intersubjectively sort individuals into "thought communities" it is necessary to define clearly, first, what is implied by the assertion that two or more individuals have a "shared" understanding and, second, how shared understandings bring individuals together to form different ideational groups.

WHAT ARE SHARED UNDERSTANDINGS?

To understand a social situation entails attributing meaning to it. But while the act of understanding intuitively implies a reflective process of deliberation, such meditation is, in actuality, quite rare. Rather, our ongoing experiences of reality are automatically processed by subconscious (or "reflexive") cognitive systems (Lieberman et al. 2002; Galdi, Arcuri, and Gawronski 2008). They accomplish this task by relying on complex structures of mental representation—commonly referred to as schemas—that are built up incrementally through interaction with the environment (Fiske and Linville 1980; D'Andrade 1995). Schemas embody our taken-for-granted assumptions about the world. They are mechanisms that allow us efficiently and seamlessly to process sensory input by relying on prior knowledge. That our experiences of the world are understood in terms of the schemas they activate explains why categorization is constitutive of the process of understanding. We classify new information in terms of our previous understandings, reinforcing and habituating our biases. Some have suggested that because schematic representations mediate between the institutionalized environment and individuals' routinized behaviors, they should be a central unit of analysis for the study of culture (DiMaggio 1997; Brubaker, Loveman, and Stamatov 2004; Fiske and Taylor 2008).

Yet thinking of culture in schematic terms poses a methodological challenge: schemas are not clear sets of behavioral rules but rather implicit recognition procedures that emerge from intricate associational links among salient aspects of our cognitively represented experiences (D'Andrade 1995). Unlike formal logic of the kind implemented in digital computers, they function as parallel, not sequential, processors (Lieberman et al. 2002). This suggests that the meanings individuals attribute to their experiences

should be thought of in relational terms (Emirbayer 1997; Mohr 1998), namely, that when assessing people's understandings we should not consider the positions they have on particular issues independently but the relationships between their positions on a variety of issues that make up a certain social domain. Conventional statistical methods are normally not designed to take such relationships into account.

Consider four hypothetical respondents to the 1993 GSS who were asked to rate their preferences for a variety of musical genres. The first, who is moderately positive toward most genres, strongly likes classical music and opera and is indifferent toward country music and bluegrass. A second respondent, who is moderately hostile toward most musical genres in general, slightly likes classical music and opera and vehemently dislikes country and bluegrass. Though these two respondents take different positions on all musical genres, the pattern of relationships between their musical preferences is identical: they both prefer highbrow music and undervalue Americana. They seem to be employing the same logic in regard to the ordering of their musical preferences. A third respondent, on the other hand, who is indifferent to most musical genres, strongly prefers country music and bluegrass and vehemently dislikes both classical music and opera. This respondent exhibits a pattern of relationships between her musical preferences that is antithetical to those of the first and second respondents: unlike the first two, she prefers Americana and dislikes highbrow. But while she takes positions contrary to those of the two other respondents, she is still exhibiting a similar understanding of the dimensions along which taste is structured.

A cognitively informed theory of cultural meaning suggests moving beyond an analytical conceptualization of shared understandings as mere opinion congruence to identifying ways in which people categorize the world—or, to use Zerubavel's (1997) imagery, carve up "islands of meaning"—that are implicit in collective patterns of relationships between individuals' attitudes and beliefs. In fact, people may frame their understandings of a given domain in similar terms, even if they take different substantive positions (Gamson and Modigliani 1989; Ferree 2003). For example, despite their bitter ideological disagreements, even Ann Coulter and Michael Moore, two of the most vocal contemporary political commentators, seem to agree on the dimensions along which American political discourse is defined; yet others, often those less powerful or publicly visible, do not seem to perceive the debate through a clearly structured ideological polarity between liberalism and conservatism (Baldassarri and Gelman 2008). To have a shared understanding, therefore, does not imply having identical attitudes or behaviors; rather, it suggests being in agreement on the structures of relevance and opposition that make actions and symbols meaningful.

Comparing how two individuals organize meaning therefore requires examining the associations between their attitudes. This calls for a method that looks at the extent of dissimilarity between the pairwise differences between their individual opinions. Consider a fourth hypothetical respondent to the 1993 GSS, who likes bluegrass, opera, and classical music but dislikes country. Unlike the other three, who seem to be following a logic that is structured on the traditional distinction between highbrow and lowbrow music, this respondent orders his musical preferences in relation to their popularity. Looking at the dissimilarity in the pairwise differences between respondents' evaluations allows us to tell these two ideational structures apart by distinguishing among (1) individuals who follow a similar relational pattern, even if disagreeing on particular issues; (2) those who follow opposite relational patterns but still agree on the dimensions along which meaning is defined; and (3) those whose relational patterns are orthogonal, suggesting that they perceive the issues through different prisms altogether. I refer to the first two as *schematically overlapping* and to the latter as *schematically different*. Conventional methods that compare observations by treating variables independently would have found our four respondents to be far apart from one another, overlooking the underlying similarities in the patterns of attitudes shared by the first three respondents, despite the differences in their evaluations of particular types of music.[2]

Comparing associations between people's attitudes allows one to measure the extent to which they organize meaning in similar ways. But how do we progress from the dyadic level to delineating different "thought communities" in the population as a whole? We can think of the individuals who make up this population as points on an imagined multidimensional "belief space" (Martin 2000*a*). The social significance of a position in this space is not predetermined but, rather, defined by the social profiles of those who occupy it. Culture, in this context, can be understood as the unspoken set of rules that tie beliefs together by restricting movement in this space along certain axes, which demarcate different social worlds (Martin 2002). Tracing the shared understandings that define different groups therefore requires uncovering these axes. While we cannot infer the ideational associations underlying individuals' attitudes by examining these individuals' responses independently, systematic patterns of association emerge when responses are investigated in the aggregate. Yet examining relationships between beliefs in the aggregate necessarily overlooks heterogeneity in people's belief patterns. The challenge therefore becomes identifying different groups that are char-

[2] See app. C, available in the online version of *AJS*, for a comparison with other methods.

acterized by uniquely consistent and internally coherent patterns of associations between attitudes. Rather than relying on the a priori assumption that these groups are defined by a particular social dimension, such an approach identifies emergent structures of meaning that inhere in the web of ideational similarities between individuals (Mohr and White 2008).

WHAT IS RELATIONAL CLASS ANALYSIS?

Thinking of culture in relational terms is not a novel idea. It was introduced by European structuralists almost half a century ago and has influenced cultural theory ever since (Mohr 1998). There are two ways in which we can view culture as relational. First, because, as schema theory suggests, meaning emerges from the associations between salient cognitive components, uncovering it requires tracing the multiple links between the variables used to measure these components. Indeed a variety of sociological studies have adopted a relational approach that induces meaning by considering the associations between concepts, categories, and symbols (Mohr 1994; Martin 2000*b*). Ideational heterogeneity, in comparison, and the assumption that it inheres in emergent collective meaning structures that link groups of individuals, requires paying attention to ideational similarities between actors. In this context, individuals are related to one another not through concrete interactional ties but in terms of the extent to which they construct meaning in similar ways. Existing methods are predominantly designed to address exclusively one dimension of relationship, either that between variables (e.g., multidimensional scaling, factor analysis) or between individuals (e.g., cluster analysis). But to account for shared understandings requires that we simultaneously examine the relationships between variables and individuals. Outlining different sets of shared understandings therefore calls for a method that is sensitive to relational patterns both within and between observations. Relational class analysis is designed to address this challenge. It does so by relying on two operational concepts: relationality and graphs.[3]

Recall our hypothetical respondents from the previous section. To illustrate the concept of relationality, which stands at the core of RCA, their responses are visualized in figure 1. Intuitively, relationality measures whether the components of two vectors of the same set of variables follow a similar pattern. In our example, this refers to the level of similarity in

[3] A graph is a mathematical representation of pairwise relational data, comprising nodes and edges connecting these nodes. Social networks are a specialized type of graph. Because "network," as it is commonly deployed in sociological literature, refers to interactional data, I refrain from using this term to describe the structure of schematic similarities between individuals.

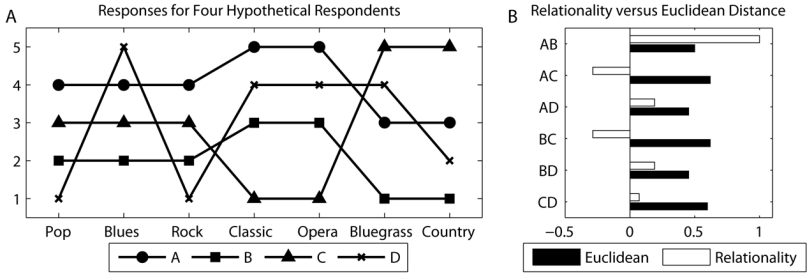

FIG. 1.—*A*, A visualization of the musical tastes of four hypothetical respondents. The *Y* axis is scaled from "strongly dislike" (1) to "strongly like" (5). *B*, A comparison of Euclidean distance and relationality between all pairs of respondents. Euclidean distance is standardized by the maximum possible.

the ways two individuals organize their musical tastes. The patterns in respondents A's and B's musical tastes are identical, which translates to maximal relationality. Respondent C's pattern, on the other hand, is almost a mirror image of A's and B's, which suggests that the relationality between C and the two other respondents is negative. An additional respondent, labeled D in the figure, also displays a pattern that is different from A's and B's, as well as from C's. Yet unlike C, respondent D is not oppositional to the rest; his pattern of musical tastes is different but not antithetical to the other respondents. In schematic terms, respondents A, B, and C exhibit the same logic of musical taste construction (even if C's opinions are opposed to those of A and B), as they all exhibit the same structure of relevance and opposition. Respondent D, on the other hand, exhibits a different logic altogether. RCA's task is to compute relationality between all pairs of observations and partition the sample into subgroups of schematically overlapping respondents such that those who subscribe to the same logic are clustered together. It accomplishes that by performing the following sequence:

1. RCA computes a measure of relationality for each pair of observations in the data set, resulting in a complete, undirected, and weighted graph.
2. Graph edges whose weights are statistically insignificant are removed. Remaining edges are transformed by their absolute value.
3. RCA partitions the graph into subgroups of schematically similar observations using a graph-partitioning algorithm.

In the remainder of this section, I discuss each of these phases in detail.

Computing Relationality

RCA depends on measuring pattern similarities between individuals' responses. It rests on three general assumptions: (1) that the subject matter being analyzed can be operationalized as a set of scaled variables, (2) that these scales are ordinal and equidistant, and (3) that they are comparable across variables.[4] The similarity between two observations is often expressed as Euclidean distance, which, in mathematical terms, measures the geometric distance between two vectors. Euclidean distance compares the coordinates comprising the two vectors independently, without taking into account the differences between the coordinates. Because it uses summed squares, it is also insensitive to the directionality of differences between the vectors. But if by having a shared understanding we mean that two individuals employ similar structures of relevance and opposition in constructing meaning, then the differences between the pairs of variables that represent these structures, and their directions, are important.

Relationality between two observation vectors is therefore defined as the extent to which the differences between all the pairs of values in each vector are identical. It is computed by iterating through all possible pairs of variables and measuring their *schematic similarity*, which is defined as the arithmetic complement (on a zero-to-one standardized scale) of the absolute difference in the absolute distances between these two variables in each of the two vectors. The schematic similarity is then signed, depending on whether or not the two distances are in the same direction. In other words, relationality measures the mean difference in magnitude and direction in the pairwise distances between variables in both vectors. The smaller the mean difference between distances, the greater the schematic similarity between the vectors.

Formally, relationality between observations i and j in data set X of N observations and K variables is defined as follows:[5]

$$R_{ij} = \frac{2}{K(K-1)} \sum_{k=1}^{K-1} \sum_{l=k+1}^{K} (\lambda_{ij}^{kl} \cdot \delta_{ij}^{kl}), \tag{1}$$

where

$$\delta_{ij}^{kl} = 1 - \left| |\Delta X_i^{kl}| - |\Delta X_j^{kl}| \right| \tag{2}$$

[4] The two latter requirements can be met through rescaling, if necessary. See app. E, available in the online version of *AJS*, for a detailed discussion about variable scaling.

[5] Each variable in data set X is standardized over a zero-to-one range in order to make the variables comparable.

is the schematic similarity for the variable pair $\{k, l\}$ between observations i and j,

$$\Delta X_i^{kl} = X_i^k - X_i^l \tag{3}$$

is the distance between the values of variables k and l for observation i, and

$$\lambda_{ij}^{kl} = \begin{cases} 1 & \Delta X_i^{kl} \cdot \Delta X_j^{kl} \geq 0 \\ -1 & \Delta X_i^{kl} \cdot \Delta X_j^{kl} < 0 \end{cases} \tag{4}$$

is a binary coefficient that changes the sign of the schematic similarity if both distances are in opposite directions.

Like Pearson's correlation coefficient, relationality is bounded by -1 and 1. While the upper bound is always 1, the lower bound depends on data limitations and, in any case, does not fall below -1.[6] This makes it easily interpretable. A relationality measure of 1 indicates that both observations are schematically identical, whereas a measure of -1 indicates maximal schematic opposition between them (i.e., that all pairs of variables in each observation are exactly of opposite distance). Values in between these bounds reflect the expected signed schematic similarity between a random pair of variables across the two observations. For example, if we were to compare the schematic similarity between the same random pair of variables in observations *B* and *D* in figure 1, we would expect it to be only 0.19. In other words, on a zero-to-one scale, the pairwise differences between both observations are only 0.19 identical in magnitude and direction.

Conceptually, relationality is an extension of Gini's inequality coefficient but, instead of measuring the mean relative difference between incomes, it measures the mean relative difference in the differences between all pairs of variables across two observations. Like Gini's coefficient, relationality is particularly suitable for measuring relational equality between observations because it avoids exclusive use of the mean for computing deviations, it refrains from using summed squares, and it is based on the differences between every pair of components (for a detailed discussion, see Coulter [1989, 52]). Figure 1 demonstrates how it differs from Euclidean distance. Panel B compares the standardized Euclidean distance to relationality measures for all pairs of respondents described in panel A. It clearly demonstrates that while Euclidean distance fails to differentiate meaningfully between these observations in terms of how they organize the field of musical genres, relationality succeeds.

[6] For a comparison between relationality and Pearson's correlation, as well as for a broader discussion on relationality's properties, see app. A, available in the online version of *AJS*.

Detecting Relationally Similar Groups

The process of computing relationality for all pairs of observations results in a square matrix. This matrix can be thought of as a complete nondirectional weighted graph, in which each node corresponds to one observation and each edge weight is the magnitude of schematic similarity between the two observations it connects. Reorganizing the data set as a graph is an effective way of taking into account the multitude of relations between observations. The assumption of heterogeneity implies that the task of identifying ideational groups requires dividing the graph into communities of individuals whose attitudinal patterns are alike. Looking for subgroups of schematically similar respondents can therefore be approached as a graph-partitioning problem.

Before partitioning the graph, it is worthwhile to think about the values and significance of the relationality measures between pairs of respondents. Relationality between observations very rarely equals zero.[7] As a result, the graph produced by RCA is extremely dense. But not all nonzero relationality values are informative. Relationality measures on either extreme of the -1 to 1 bound are of particular significance, as they indicate that the two respondents employ similar principles in organizing the meaning domain, either in the same or opposite direction. On the other hand, measures in between these extremes indicate that the pair of respondents employ different (or orthogonal) but not oppositional rationales. RCA therefore removes graph edges that have relationality values that are statistically insignificant.[8]

The graph edges remaining after removing nonsignificant edges are those closest to either extreme of the -1 to 1 bound. Negative relationality between observations suggests that the two respondents, like A and C in figure 1, organize meaning in oppositional directions, but that they nevertheless agree on the dimensions along which meaning is defined. Consequently, RCA transforms all remaining graph edge weights by their absolute value, treating both positive and negative weights identically.[9] To demonstrate why absolute relationality values allow for the division of the sample into meaningful subgroups, consider a random subgroup of individuals who were asked five attitudinal questions. Figure 2 plots

[7] In fact, in the data used in the analysis below, only 0.02% of pairs had a relationality score equaling zero. This was consistent across simulations using randomly generated data. A zero relationality score occurs in the unlikely case in which the differences between all pairs of distances between variables across the two observations offset one another.

[8] See app. A, available in the online version of *AJS*, for details on the bootstrapping method used to establish significance.

[9] Using absolute values bears conceptual affinity to Breiger and Mohr's (2004) suggestion of using generalized equivalence to operationalize "institutional logics."

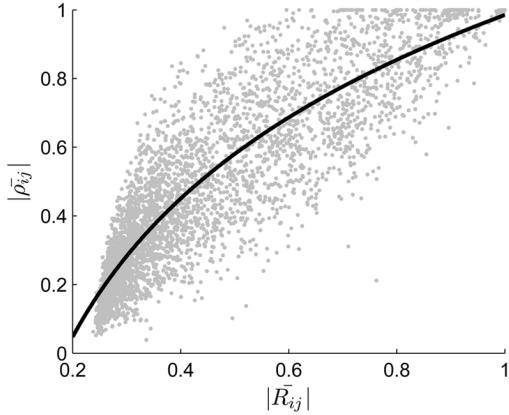

FIG. 2.—Mean absolute correlation between variables as a function of mean absolute relationality between respondents in simulated data.

the average correlation strength between these five variables as a function of the average absolute relationality between all pairs of respondents in the sample.[10] The solid line corresponds to the fitted model, demonstrating that as the absolute relationality increases, so does the correlation, whether positive or negative, between the variables. In other words, as a group becomes more cohesive in terms of the schematic overlap between its members, so do the patterns of association between its members' attitudes become more consistent. Partitioning the graph into schematically overlapping subgroups therefore produces a natural division of the population into communities with distinct covariance structures between attitudes.

Hierarchical clustering and blockmodeling algorithms are commonly used in social scientific analysis for detecting community structure in relational data (Wasserman and Faust 1994). More recently, attention to the community problem from the physics and mathematics communities has led to the development of several new graph-partitioning algorithms (for a review, see Danon et al. [2005]). The spectral partitioning method based on modularity (Newman 2006) is particularly appropriate for RCA. Unlike blockmodeling or hierarchical clustering, it does not require a priori assumptions about the number or size of subgroups. Rather the optimal number and size of divisions is achieved by maximizing the graph's modularity, which is the number of edges falling within groups compared to that expected if the graph were random, while maintaining its distribution of node degrees. Modularity maximization using eigenvalues exhibits particularly high performance, both in terms of modularity

[10] These results are based on a series of simulations with randomly generated data.

optimization and in its computational robustness.[11] It can be generalized to weighted graphs by treating them as multigraphs and is therefore applicable for RCA (see Newman 2004). Using modularity to find cohesive groups is also consistent with theories of schematic transmission because it takes into account the distribution of relationality measures for each individual respondent. Consider two respondents who are only weakly schematically overlapping with one another. The algorithm would weigh lower the significance of the edge between them the more each was overlapping with other respondents. In other words, modularity considers schematic similarity between respondents in relation to the extent of their schematic similarity with others.

Compared to other methods for analyzing multivariate data, RCA is specifically tailored to meet the challenges of finding relational structure both within and between observations. Overall, it is effective in detecting groups of schematically similar respondents that exhibit distinct patterns of covariance between variables. I conducted a series of simulations to test whether RCA was robust to noise. I generated random data that were constrained to fit one of three different attitudinal patterns and applied RCA to detect these patterns under varying degrees of deviance from these patterns. It was found that RCA maintains reliable performance even when data were inconsistent and noisy.[12] In the next section, I demonstrate how RCA can be applied to survey data by analyzing Americans' musical tastes, as captured by the 1993 GSS.

REEXAMINING THE CULTURAL OMNIVORE THESIS WITH RCA

Nowhere is the relational nature of culture more apparent than in how individuals acquire taste. As Bourdieu (1984) points out, by declaring a taste, one claims one's social position while at the same time reinforcing the taxonomy that makes taste a social marker. The social meaning associated with a preference for a particular musical genre is contingent both on the social identities of those expressing this preference and on the meanings implicit in their other preferences. Bourdieu's (1990) elaboration on the concept of habitus—the intersubjective mechanism through which social structures are internalized as unconscious and naturalized dispositions—bears a strong affinity to schema theory (D'Andrade 1995; Strauss and Quinn 1997). It suggests that individuals' cultural preferences can be understood in terms of the shared understandings that produce

[11] Because of its combinatorial complexity, an exhaustive search for an optimal division of a network into subgroups is practically impossible. Using eigenvalues allows one to reach a partition in polynomial time.

[12] See app. B, available in the online version of *AJS*, for details.

their social significance, making musical taste an ideal candidate for exploration using RCA. In the following paragraphs, I provide a brief overview of recent scholarship on musical taste as a social marker in the United States, particularly that pertaining to cultural omnivorousness, and analyze data on Americans' musical preferences as a means to demonstrate RCA's usefulness in addressing cultural multivocality and attitudinal heterogeneity.

The Rise of Cultural Omnivorousness

Mounting empirical evidence from the United States as well as from other countries has persistently documented a shift in the orientation of high-status individuals toward an inclusive range of cultural preferences that traverses the traditional boundaries between highbrow and lowbrow genres (Peterson 1992, 1997, 2005). It suggests that today musical preferences function as social markers not through the distinction between elitist and popular musical forms but by differentiating between those with high and low levels of cultural tolerance. The rise of the so-called cultural omnivore seems inconsistent with Bourdieu's theory of cultural distinction, which expects to find exclusive correspondence between cultural taste and social position (Bryson 1996; Erickson 1996). But as Peterson and Kern (1996) argue, cultural omnivorousness does not negate Bourdieu's general theory; rather, it introduces one's range of preferences as a new criterion for drawing symbolic boundaries. Put differently, it implies the emergence of a new cultural logic of distinction.

By cultural logic I mean the assumptions that people rely on in interpreting the motivations and intentions behind each other's actions (Enfield 2000). A distinctive cultural logic of distinction therefore suggests that people who employ it make consistent associations between cultural practices and the social performances they signify. Thus the emergence of a new cultural logic implies that the social meanings people once attributed to these practices have been collectively transformed.

Since the publication of Peterson and colleagues' first findings about cultural omnivorousness, many studies have added refinements to the argument. Following Bryson (1996), several have drawn attention to the mechanisms of exclusion that underlie omnivorousness, noting that an openness toward musical diversity often is accompanied by rejection of genres that are associated with marginalized social groups (Tampubolon 2008; Warde, Wright, and Gayo-Cal 2008). Lizardo (2005) and Katz-Gerro (2002) similarly focus on people's practices of symbolic boundary formation, tying the logic of omnivorousness with that of postnational cosmopolitanism and post-Fordist identity politics. Other studies have looked for diversity within the patterns of omnivorousness, distinguishing be-

tween levels of musical tolerance (Sonnett 2004; García-Álvarez, Katz-Gerro, and López-Sintas 2007) and between highbrow and lowbrow cultural omnivores (Peterson 2005).

What these studies share is an understanding of the relationship between social structure and taste predominantly through the prism of cultural diversity, implying that the logic of omnivorousness has supplanted the outmoded worldview that divides music between elite and mass genres. To be sure, since the 1970s, symbolic boundaries between genres have been eroding, while Americans have exhibited growing diversity in their musical preferences.[13] Yet to assume that within the space of two decades a shift had monolithically transformed cultural sensitivities seems to contradict what we know about the incremental, multidirectional, and often compartmentalized way in which culture evolves (Swidler 1986; Collins 2004). In the heterogeneous and stratified American social landscape one would expect such institutional change to occur very slowly, if at all (DiMaggio 1987). Indeed, whereas early studies emphasized a shift in highbrow consumers' tastes from exclusivity to omnivorousness, more recent work explores the juxtaposition of breadth of preferences with the old division between highbrow and lowbrow tastes, finding that omnivores do not necessarily like highbrow music (García-Álvarez et al. 2007; Tampubolon 2008). Yet by a priori presupposing how musical genres are hierarchically classified, authors of these studies effectively impose a framework of highbrow versus lowbrow on their findings.

But if Americans' logic of cultural exclusiveness has changed in recent years, why should we not expect, or at least remain open to the possibility, that such change had also interacted with how genres are tacitly classified? Could the evolution of cultural sensitivity not have entailed that some genres that were once considered vulgar have been de facto canonized whereas others were downgraded? Moreover, and perhaps most important, why should we expect the same logic of classification to be applied universally? Think of jazz as an example. On the one hand, jazz has been embraced and institutionalized as a form of high culture by music critics, academics, and consequently the American public at large. Yet in part due to its African-American origins, jazz was associated with morally corrupting qualities throughout the early and mid-twentieth century (Lopes 2002). Thus, whereas those whose tastes are structured on a high-versus-low rationale might appreciate jazz as a marker of refined taste, others whose racial identity constitutes an important influence on their logic of classification may relate to jazz in accordance with their attitudes toward

[13] However, this trend seems to have stalled since the mid-1990s. See Peterson (2005) and García-Álvarez et al. (2007).

race. Consequently, different logics may prescribe different understandings of what types of music should be included in a particular category.[14]

The cultural omnivore thesis, therefore, calls for reexamination through a lens that is sensitive to the multiplicity of meanings that musical works elicit. Applying RCA to musical tastes is particularly appealing for three reasons. First, as Bourdieu (1984) notes, music is the quintessential social marker: musical tastes are not consciously acquired and expressed as means of social distinction but are practical forms of enacting one's social standing. Even if the rankings of musical works are not as homologous with their consumers' social positions as Bourdieu's theory expects them to be, they still exhibit, as Bryson (1996) demonstrates, clear patterns of compatibility and opposition. Unlike some art forms, musical genres evoke strong feelings from detractors and enthusiasts alike (DiMaggio 1987). They are therefore easily operationalizable as scales that range from positive to negative attitudes and that provide the basis for a relational analysis. Second, because RCA relies on the relations between the components that make up a certain domain, its efficacy is highly contingent on the exhaustiveness of the set of variables being analyzed. Compared to other lifestyle markers, the field of musical production is both bounded and institutionalized, making it amenable to RCA.

Finally, a variety of studies using musical tastes as a means to operationalize omnivorousness, some relying on the data set used in this analysis, have been conducted in the past. Of those, a few specifically use latent-variable models and ordinal statistical methods to explore heterogeneity. García-Álvarez et al. (2007) use longitudinal latent class regressions, with breadth of musical preferences as their dependent variable, to demonstrate variability in levels of omnivorousness.[15] Tampubolon (2008) uses latent class analysis to examine patterns in the repertoires of respondents' musical likes and dislikes and finds that omnivores can be

[14] As Lena and Peterson (2008) note, genre boundaries are brittle and often-contested historically contingent social constructions. Consider mega pop stars like Mariah Carey or Beyoncé, both classified by Billboard magazine as R&B artists, as examples of mainstream singers who traverse genre boundaries.

[15] Latent class regression is a powerful tool for detecting heterogeneity in the relationship between sociodemographic predictors and omnivorousness. But it also has its limitations: defining breadth of preferences as the outcome variable presupposes that it is the primary dimension along which respondents diverge. It is therefore not surprising that the authors find classes that are distinguishable by their level of omnivorousness. However, such a theoretical imposition precludes the possibility that other axes of variability will be detected.

divided by their lowbrow and highbrow preferences.[16] Han (2003) uses weighted multidimensional scaling to demonstrate that individuals diverge not only in terms of their musical tastes but also in the ways in which they differentiate between genres. He finds that the highly educated mainly discriminate against genres they strongly dislike, whereas those low on education reject all genres they do not strongly like.[17] Ultimately, however, neither study departs from the cultural omnivore framework. They all replicate both the assumption of omnivorousness as the primary axis of differentiation and the conceptualization of musical hierarchy through a presupposed division into highbrow and lowbrow tastes. Such imposed presuppositions do not allow them to examine the data beyond the basic conjectures of the cultural omnivore thesis.

Analysis

The data used for this analysis are drawn from the Culture Module of the 1993 General Social Survey. Respondents were asked to rate their preferences for 17 musical genres on a five-point ordinal scale.[18] Respondents were also given the option to indicate that they do not know enough about a particular genre to have an opinion about it. Not knowing about a genre is not a meaningless answer, however; rather, it indicates that the respondent is not sensitized to the meanings of this type of music as a social marker. "Don't know" responses were therefore imputed as "having a mixed opinion" on a genre (corresponding to three on the five-point

[16] Tampubolon's interesting findings, which demonstrate that different omnivore types mutually dislike the others' preferred genres, lead him to question the relationship between political, racial, and musical tolerance suggested by Bryson (1996). Yet, on the face of it, a more appropriate conclusion would be that these findings unsettle the reliance of cultural omnivorousness theory on musical tolerance as its pivotal differentiating factor. It is difficult to conclude, however, to what extent this conclusion is warranted, as the actual distributions, as opposed to model predictions, of group omnivorousness levels are not provided.

[17] These findings seem to tap the different logics of inclusion and exclusion that individuals employ as a function of their education. It is an attempt to integrate into one framework both the "whats" and "hows" of music classification. Though producing insight about the mechanisms of cultural distinction, these results are nevertheless limited in three substantial ways: first, because educational attainment is used as a criterion for identifying different preference dimensions and then correlated with these outcomes, the resulting patterns are self-referential. Second, only one sociodemographic—educational attainment—is used in the analysis. Han singles out those in possession of a graduate degree as high status, but they constitute a mere 7% of the sample. And finally, the "hows" are understood as the different distributions of preferences within genres, failing to take into account how these distributions relate to one another across genres.

[18] Because of classificatory ambiguity, one genre was removed from the sample. See app. D, available in the online version of *AJS*, for a detailed description of the data.

scale).[19] However, the 44 respondents (who constitute 2.8% of the sample) who did not recognize more than six genres were removed from the sample due to their excessive musical illiteracy, in addition to 30 respondents who had missing answers, leaving 1,532 respondents.[20]

The analysis that follows is intended to demonstrate RCA's utility. It consists of three parts. In the first, I use RCA in order to partition these respondents into groups that presumably exhibit alternative logics of cultural distinction and analyze the different opinion patterns that characterize each group. The second part explores the relationship between sociodemographic variables and musical preferences within each group. It demonstrates that the same sociodemographic characteristics, such as income or education, predict different musical preferences in each group, suggesting that musical genres carry alternative social meanings across groups. Finally, the third part discusses how these findings shed new light on the omnivore thesis and highlights RCA's advantages over previously employed analytical strategies.

Relational Class Analysis of Musical Preferences

The RCA procedure partitioned the data into three groups, representing 44.4%, 30.7%, and 24.9% of the population, respectively. Because RCA is likely to assign respondents with different tastes to the same group, examining group means can be misleading. Instead, since RCA increases the covariance between tastes within groups, looking at the correlations between variables is more informative. Correlations are normally summarized in matrix format. However, graphical visualizations are more powerful in communicating the structure of such multidimensional data (DeJordy et al. 2007). The correlation matrices of each subgroup are therefore illustrated as networks in figure 3: each node corresponds to one variable and the edges connecting them to statistically significant corre-

[19] Using other imputations would defeat the purpose of RCA. Mean-based imputations might unjustifiably force clear positions where they do not exist, whereas regression-based imputations would artificially override sociodemographic heterogeneity. For more on the scaling of variables, see app. E, available in the online version of *AJS*, where I conduct further analyses to justify the imputation of "don't know" responses as "mixed opinion."

[20] Despite its exceptional level of detail, this data set ultimately relies on a coarse-grained classification of musical genres that is limited in its ability to make visible the ways in which social positions and musical tastes correspond. For example, one of the categories in the survey, defined as "contemporary pop/rock," covers a large variety of subgenres that span from mainstream to alternative contemporary music and that, presumably, have distinctive audiences. For brevity's sake, I refer to this category simply as "pop" in the remainder of the analysis.

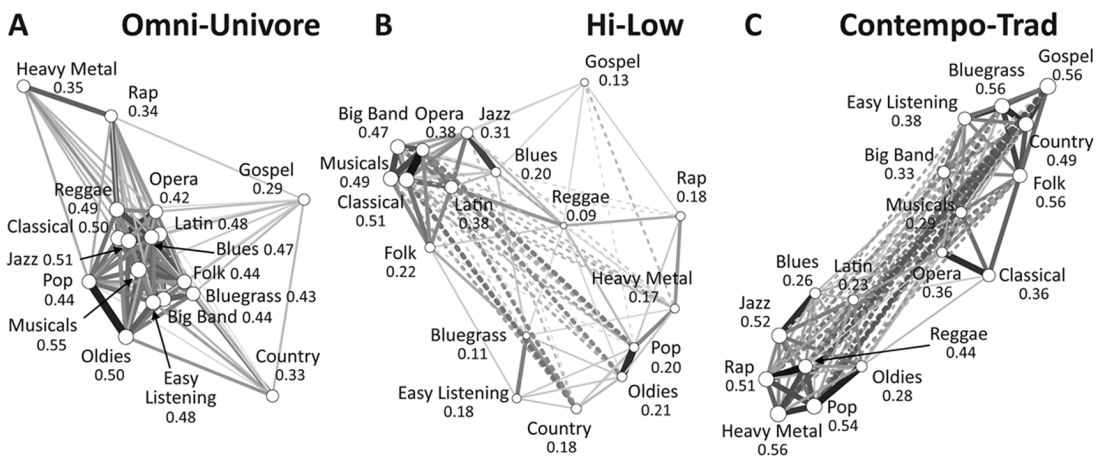

FIG. 3.—Networks of correlations between genres in each of the groups detected by RCA. *A*–*C* correspond each to one group. Each node corresponds to one genre variable, and each line connecting two nodes to the correlation between them, only if significant at $\alpha = 0.05$. Numbers and node sizes represent the weighted clustering coefficient of each node, standardized by the maximal weight in the network. Solid lines represent positive correlations, and dashed lines negative correlations. Line shades and widths are proportional to the strength of the correlation.

lations between variables.[21] Each node is also labeled by the value of its weighted clustering coefficient (CC).[22] The CC measures the extent to which the neighbors of that node are also correlated with one another. A high CC indicates that its corresponding genre is part of a strongly connected cluster of genres, suggesting that it is pivotal in sustaining the interdependencies that produce the meaning structure it is part of.

Group 1: Omnivore versus Univore (*Omni-Univore*).—The three groups exhibit very different structures of musical taste. In the first group, illustrated in panel A, there are no negative correlations between musical genres. Rather, all genres are positively correlated with one another, except for the four peripheral genres—country, rap, gospel, and heavy metal—which are nevertheless still widely correlated with those in the center.[23] The narrow distribution of CC values suggests that this network presents no clear relations of precedence or opposition between genres. In other words, members of this class who like one genre also tend to like the rest. This does not mean, however, that they value all genres equally; rather, it suggests that they do not perceive the space of musical styles to be defined by one singular and explicit ranking. Such logic is perhaps best described as heterarchical: it exhibits relations of interdependence between musical preferences, which are amenable to multiple axes of distinction (Crumley 1995). A heterarchical logic fits well with the notion of cultural omnivorousness. It does not imply that omnivores like all music types indiscriminately but that their rejection of cultural hierarchies allows for an openness to equally appreciate a broad variety of genres (Peterson and Kern 1996). Yet membership in this group does not necessarily imply a broad range of cultural preferences. While it includes the most omnivorous of all respondents—those who like all 17 genres—this group also contains those who dislike all or most genres. It seems to be structured along a range that stretches from those with exceptionally broad tastes on the one side to those with exceptionally narrow tastes on the other, who all similarly depart from a rationale that perceives some genres as inherently

[21] The Fruchtenman and Reingold spring embedding algorithm was used to spatially visualize network layouts.

[22] Only positive correlations are used for computing the CC. These are standardized by the maximal weight in the network, such that the coefficient values are proportional to level of clustering relative to the maximum possible (see Onnela et al. 2005, eq. 9). Formally:

$$CC_i = \frac{2}{k_i(k_i - 1)} \sum_{j,k} (\tilde{w}_{ij}\tilde{w}_{jk}\tilde{w}_{ki})^{1/3},$$

where w_{ij} is the correlation between nodes i and j, $\tilde{w}_{ij} = w_{ij} / \max(w_{ij})$, and k_i is node i's degree.

[23] These four genres are found by Bryson (1996) to be most likely disliked by those with large breadths of musical likes.

more valuable than others. Consequently, I refer to it as the *omnivore versus univore* group.

Group 2: Highbrow versus Lowbrow (*Hi-Low*).—But the two remaining groups are not as compatible with the cultural omnivore thesis as the first one. The second group, depicted in figure 3*B*, is dominated by an old-fashioned logic that clearly divides between classical genres, on the one hand, and popular genres, on the other. This division does not perfectly correspond to traditional distinctions between highbrow and lowbrow genres. For example, big band and folk music, neither of which is normally associated with canonical high culture, are both strongly correlated with classical music.[24] But the CC values indicate that classical music, a quintessential form of high culture, is the most dominant genre in the set that also includes opera, musicals, jazz, and Latin music. Members of this *highbrow versus lowbrow* group who either like or dislike these genres tend to dislike or like (respectively) country, pop, oldies, heavy metal, and rap, all archetypal examples of lowbrow music, which are correlated with one another. Overall, roughly one-third of Americans continue to perceive music through a lens that sees an opposition between canonical, instrumental, and traditional music on the one side and popular contemporary music on the other.

Group 3: Contemporary versus Traditional (*Contempo-Trad*).—Similarly, the third group also exhibits an unambiguous opposition between two sets of musical genres. Yet this dichotomy is different from the conventional distinction between high and low culture. As depicted in figure 3*C*, one side of the correlation network is dominated by a cluster that is centered on gospel and which also consists of bluegrass, country, folk, and easy listening, all, except for the latter, musical forms that are associated with American folklore.[25] Big band and musicals are also loosely coupled with this cluster. On the other side of the fault line, heavy metal, jazz, pop, reggae, oldies, and rap—and to a lesser degree Latin and blues—form another set of musical genres that are characterized by their con-

[24] The correlation between classical music and folk is not particularly surprising, however, as elitist fascination with folk music dates back to the 1930s (Peterson 1992).

[25] The term "gospel" can connote a variety of subgenres such as black gospel or southern gospel, whose producers and audiences are racially segmented (McNeil 2005). It seems that respondents in this group are more inclined than others to associate the category "gospel" with white-identified subgenres rather than with black gospel. Indeed, white respondents are significantly more likely to prefer gospel in this group than in the two other groups ($P < .001$, one-tailed t-test), while black respondents are significantly less likely to prefer gospel in this group than in the other two ($P = .0138$, one-tailed t-test). Moreover, the proportion of whites among those who declare liking gospel very much in this group is significantly higher than in the two other groups (0.82 compared to 0.61 and 0.53 in the Omni-Univore and Hi-Low groups, respectively; Bonferroni tests with $P = .001$ and $P < .001$, respectively).

temporary appeal. This polarity seems to resonate with a tension between, on the one hand, local identity that is rooted in white American tradition and, on the other, an urban culture that celebrates racial and ethnic diversity. Unsurprisingly, classical music and opera, both musical forms that, framed in terms of an opposition between traditional and contemporary music, constitute a canon that transcends locality and time, are the only two genres that are neither opposed nor exclusively correlated with either set. Both also have very low clustering coefficients, suggesting that they are marginal for the construction of meaning in this group. Unlike in the Hi-Low group, these two genres do not figure prominently as delineators of opposing musical repertoires, nor are they defiantly positioned alongside popular genres in a manner that challenges the traditional distinction between high and low culture.

Mapping Social and Musical Spaces

The three cultural logics that were identified with the assistance of RCA exhibit different orderings of musical genres. However, if these also function as logics of social distinction—that is, if they provide principles of musical evaluation that demarcate different social groups—we should expect them to diverge sociodemographically. But because each group contains individuals who may be on different sides of the cultural divisions on which it is structured, examining their average sociodemographic profiles may be misleading. Rather, if each group is characterized by different understandings of the social significances of various musical genres, we should expect musical preferences and sociodemographic attributes to be correlated differently with one another in each group.

A conventional analytical approach would be to perform a multivariate analysis for the entire sample, whereby sociodemographic variables would be modeled as the independent variables and musical tastes as the dependent variables. However, if musical genres carry multiple social meanings, such a strategy would be counterproductive. For example, if jazz is predominantly perceived as a form of highbrow music in the Hi-Low group and as a form of black music in the Contempo-Trad group, then variables such as race and education should predict different attitudes toward jazz in each group. The analysis that follows therefore analyzes each group independently. It explores how various sociodemographic attributes are associated with musical preferences in two ways. First, it examines the extent to which sociodemographic attributes explain variance in taste using simple linear and quadratic ordinary least squares (OLS) models. Second, it explores how these attributes are correlated with differences in preference between pairs of genres, which I refer to as delta correlations. Looking at differences between pairs of genres, as opposed

to examining individual genres or their additive scales, simultaneously captures the appreciation of one genre and rejection of the other. This taps the underlying relational mechanism of cultural distinction, whereby the meaning of aesthetic preferences as social markers emerges from the ways in which they relate to one another. Because the purpose of this analysis is to demonstrate how RCA can be employed to reveal cultural multivocality, it focuses on a few instructive examples.

What sociodemographic dimensions warrant examination? Bourdieu's framework of cultural distinction focuses on the link between one's class position and cultural capital. It expects to find that musical preferences diverge along axes of socioeconomic status such as education, occupational prestige, and income. More recent theories, which point to the growing salience of non-class-based identities in postindustrial societies, suggest that cultural consumption may be associated with other forms of social status. Studies on cultural omnivorousness focus on age as a significant source of cultural cleavage as younger cohorts supposedly reject the rigid artistic sensibilities of their parents' generations (Peterson and Kern 1996). Others have suggested that gendered, regional, ethnic, and religious identities have all become increasingly important in shaping taste (Katz-Gerro 2002; Lizardo 2005). Variables that tap these different social dimensions were used in the analysis that follows and are summarized in table 1.[26]

Figure 4 presents fitted OLS models between various sociodemographic attributes and taste measures. Dependent variables are either individual genre preferences or additive scales of genre preferences. The five scales that are used in this part of the analysis correspond to the patterns of genre clusterings that cohere in the three groups identified by RCA, each traversing standard musical classifications. These include highbrow and popular scales, which emerge from the Hi-Low group; traditional and contemporary scales, which emerge from the Contempo-Trad group; and a scale comprising rap and heavy metal, two genres that are marginalized in the Omni-Univore group (for scale compositions, see fig. 4).

Each row in figure 4 corresponds to one sociodemographic variable and its relationship with four taste variables. As expected, these models vary with respect to the three groups identified by RCA. Whereas the relationship between education and appreciation of heavy metal, for example, is insignificant among members of the Omni-Univore group, it is significantly negative for those of the Hi-Low group and significantly

[26] Locality size, which measures the size of the locality in which the respondent resides, is used as a continuous measure of the level of urbanism of the respondent's residence. Race intolerance is measured using an additive scale of five questions about racial attitudes. It is identical to the scale used by Bryson (1996). For a detailed description of the sociodemographic variables used in this analysis, see app. D, available in the online version of *AJS*.

TABLE 1
DESCRIPTIVE STATISTICS FOR SOCIODEMOGRAPHIC VARIABLES

Label	Measurement	Mean	SD
Age	Age in years	45.77	17.05
Education	Years of education	13.13	3.03
Prestige	Two-digit Hodge, Siegel, and Rossi occupational prestige	43.43	13.22
Income	Family income, logged	10.17	.96
Urban	Locality size, logged	3.48	2.06
Religious	Nine-point religious attendance scale	3.88	2.75
Racist	Six-point additive scale of five questions on racial attitudes	2.23	1.42
Female	Dummy for gender	.5738	.4947
White	Dummy for white/nonwhite race	.8427	.3642
Southern	Dummy for region	.3401	.4739

positive for those of the Contempo-Trad group (fig. 4, top row, third column). In other words, heavy metal seems to simultaneously function as a signal of high status according to the Contempo-Trad logic and of low status according to the Hi-Low logic. Similarly, appreciation of country is significantly negatively related with religiosity in the Hi-Low group and significantly positively related with religiosity in the Contempo-Trad group (fig. 4, sixth row, third column). Such opposing trends between groups are apparent for all other variables reported in figure 4, implying that each group is defined by distinctive understandings of the social significances of musical genres.

Delta correlations provide more refined insights about the underlying logic of distinction that characterizes each group, as they examine the relationships between genre preferences. A delta correlation, $\rho(s, v_1 - v_2)$, is computed as the Pearson correlation coefficient between a sociodemographic variable, s, and the difference between two taste variables, v_1 and v_2. The delta correlations between age, opera, and country are instructive. While in the Hi-Low group opera is increasingly appreciated over country as a function of age, in the Contempo-Trad group the opposite is the case. Performing one's age role is achieved by simultaneously valuing and devaluing the opposite genres in each group. In the Omni-Univore group, however, age is not associated with a preference for either genre, suggesting either that that group's logic of distinction does not mark its practitioners' ages or that the distinction between these two genres is not pivotal in producing it.[27]

[27] Pearson correlation coefficients were computed for age and the difference opera-country in each group. Significance was determined for $\alpha = 0.05$. In the Omni-Univore group the coefficient was found insignificant, in the Hi-Low group it is 0.317, and in the Contempo-Trad group -0.283.

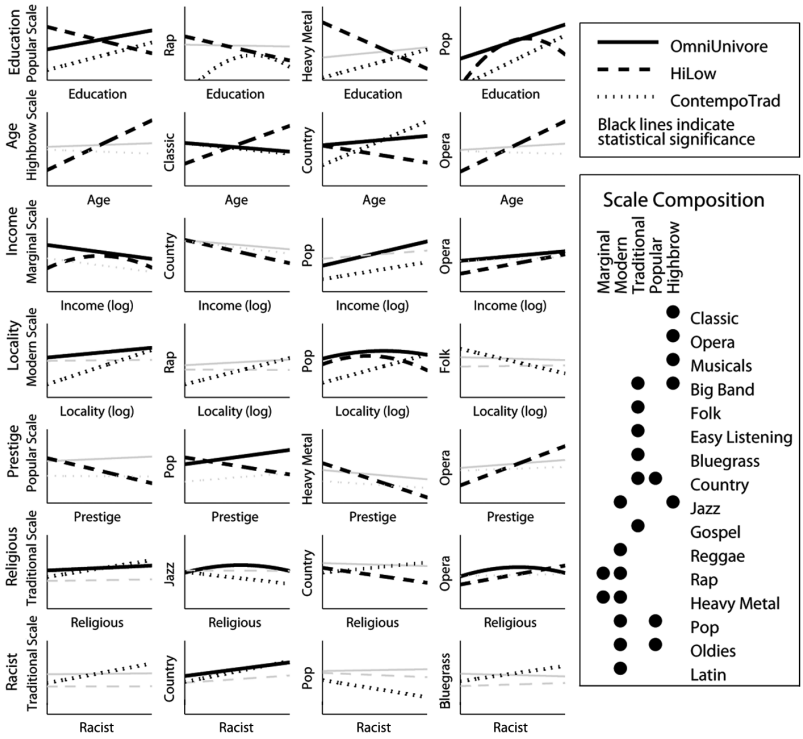

FIG. 4.—Fitted OLS models representing the relationship between sociodemographic variables, on the *X*-axis, and musical genre preferences, on the *Y*-axis, by RCA group. The solid line represents the Omni-Univore group, the dashed line the Hi-Low group, and the dotted line the Contempo-Trad group. Grayed lines represent insignificant ($\alpha = 0.05$) relationships. The scales in the first column correspond to the key on the right-hand side.

Delta correlations highlight the variety of contextual social meanings that musical genres take. A close look at two genres that are particularly amenable to different social interpretations—jazz and pop—demonstrates the different social polarities on which each group is structured. Figure 5 plots illustrative delta correlations for these two genres. In the Hi-Low group, jazz seems to signify its fans' socioeconomic status and maturity, as it is increasingly appreciated over country and pop as a function of education, occupational prestige, and age. In the Contempo-Trad group, however, a comparison with traditional genres such as country, folk, bluegrass, and gospel highlights jazz's infusion with racial, urban, nonsouthern, and secular identities.

In contrast to jazz, pop is associated with low socioeconomic status in the Hi-Low group. When compared to rap, for example, the extent to

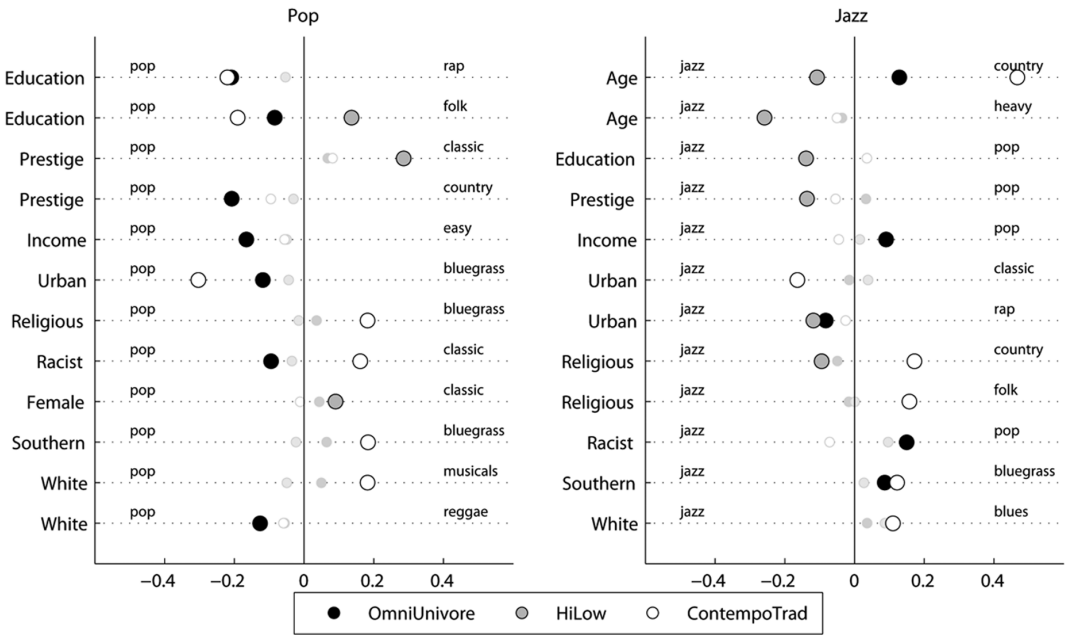

FIG. 5.—Delta correlations for jazz and pop, disaggregated by RCA group. Each row represents one correlation between a sociodemographic variable and the delta between two genre preferences. Large circles signify a significant correlation (for $\alpha = 0.05$), such that the difference between the two genres increases in the direction of the genre to which the circle is closer as a function of an increase in the sociodemographic variable. Insignificant correlations are represented by smaller grayed circles. For example, classical music is increasingly appreciated over pop in the Hi-Low group as a function of occupational prestige (third row from the top), whereas in the two other groups this relationship is statistically insignificant.

which pop is devalued by educated members of the Hi-Low group becomes visible: while in both other groups people tend to increasingly appreciate pop over rap as they become more educated, in the Hi-Low group, where pop is understood in terms of its opposition to higher musical forms, it is neither liked more nor less compared to rap, irrespective of education. But being antithetical to jazz in the Hi-Low group does not imply that pop is similarly oppositional to it in the Contempo-Trad group; rather, like jazz, when compared to traditional musical genres, it seems to denote a variety of identities that are rejected by white, religious, small-town southerners.

The different social meanings signified by pop in each group become even more apparent when considering the average delta correlation between pop and all other genres (fig. 6*A*). In the Omni-Univore group, pop is increasingly appreciated more than other genres as a function of education, occupational prestige, and income, suggesting that in this group it is a symbol of high socioeconomic status. In fact, with the exception of classical music, as this group's respondents' income increases, they tend to like pop more than they do every other genre. Unlike in the Contempo-Trad group, however, liking pop more than other genres is also associated in this group with racial intolerance and being white. Whites in this group prefer pop over all genres with black roots indiscriminately, whether rap, jazz, blues, or gospel. The different social meanings associated with liking pop in each group are summarized in figure 6*B*.

Considered together, the relationships between social attributes and musical preferences uncover the different and intersecting axes of distinction along which the three groups are structured and how those are marked by musical taste. Figure 7, which compares the extent to which each sociodemographic variable explains the variance in deltas between all genres in each group, provides an overview of these differentiating axes. It demonstrates that the Hi-Low group is distinctive in its polarization by status, mainly in the form of occupational prestige, but not by income. That this group is also differentiated by gender is in line with previous studies that found that women tend to specialize in household-status building by consuming high culture (Collins 1992; García-Álvarez et al. 2007). The Contempo-Trad group, on the other hand, exhibits a logic of musical distinction that predominantly marks racial, religious, and regional identities; urban-town and north-south divisions figure prominently in this group. The social divisions in the Omni-Univore group seem more nuanced. This does not necessarily imply that they do not exist, but that because members of this group are defined by their relatively egalitarian musical preferences, these divisions are not as pronounced as they are in other groups. In fact the differences between musical preferences in this group are explained by income more than they

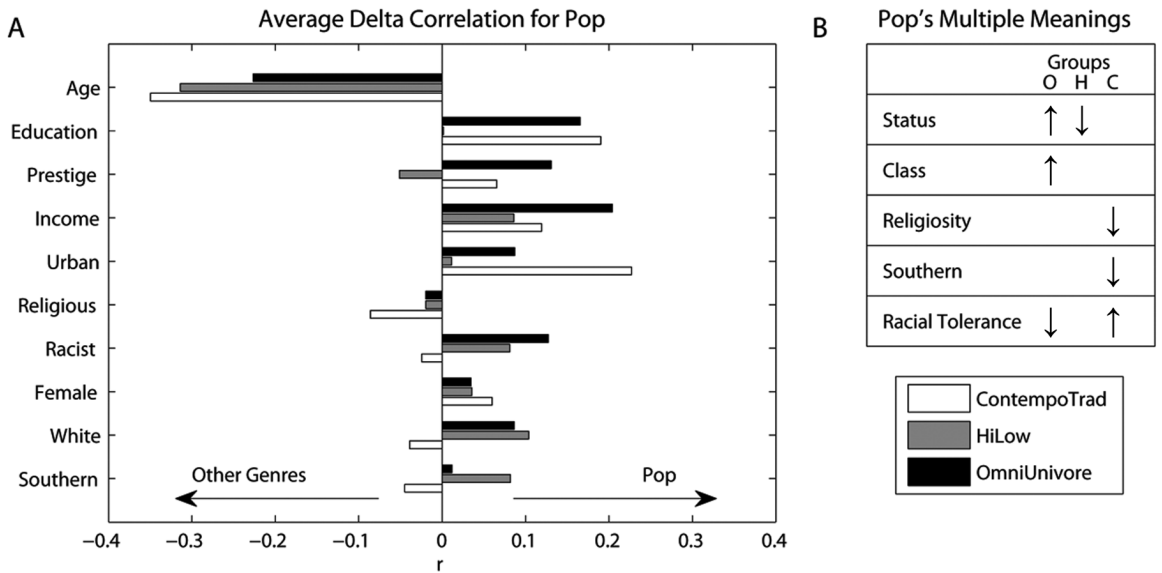

FIG. 6.—Average delta correlations for pop, disaggregated by RCA group (*A*). Each bar represents the average delta correlation between the sociodemographic variable on the *Y*-axis, and the difference between pop and all other genres. For example, income is most strongly associated with a preference for pop over other genres in the Omni-Univore group. By average, the correlation between income (logged) and the difference between pop and any other genre is 0.154 in this group. *B*, A summary of these averages.

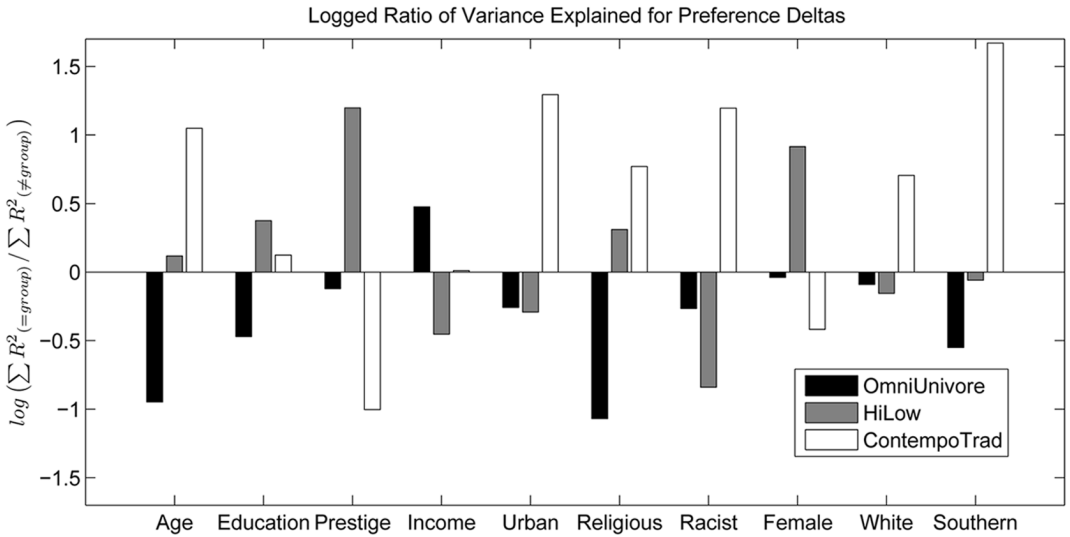

FIG. 7.—Ratios (logged) between the variance in genre preference deltas explained by sociodemographic attributes in each RCA group, and the variance explained by these attributes in the two other groups. For example, the variance in the difference between all pairs of genre preferences is explained by occupational prestige in the Hi-Low group far more than it is in the two other groups.

are in the two other groups. This seems to suggest that while those high on professional and educational attainment, but not so much on income, display their cultural capital by clinging to old musical hierarchies (Hi-Low), those with economic capital but more modest educational success gravitate toward more heterarchical forms of musical distinction (Omni-Univore).

Where Are the Omnivores?

On the whole, the RCA analysis draws an intricate picture of three competing ways in which people understand the social significance of music: one, based on a contemporary adaptation of the old division between highbrow and lowbrow music, distinguishes people by age and status; another differentiates between contemporary and traditional genres as a means to signify age as well as religious, racial, and regional identities; and yet another, accounting for almost 45% of the population, adheres to a more undiscriminating logic that nevertheless allows its practitioners to display their economic capital. That more than half of respondents subscribe to exclusionary musical logics suggests that omnivorousness has not become the dominant boundary marker for socioeconomic status in the United States. In this final part of the analysis, I use these findings to briefly revisit the concept of cultural omnivorousness as a means to demonstrate how RCA can be used as a theory-building analytical tool.

Omnivorousness is commonly understood as a manifestation of a deeper historical shift in industrialized societies toward multiculturalism that promotes social diversity and that rejects the idea that certain forms of culture are inherently superior (Bryson 1996; Peterson and Kern 1996; Lizardo 2005). The absence of hierarchy in the musical tastes of members of the Omni-Univore group seems congruent with such a logic. Yet members of this group are characterized by their relatively indiscriminate appreciation of genres, not by whether they like a particularly broad or narrow range of music. I refer to the former as cultural egalitarianism. Egalitarianism and omnivorousness are not one and the same. Following Peterson's lead, empirical studies on musical taste have, practically without exception operationalized omnivorousness as the number of genres liked.[28] Egalitarianism, on the other hand, implies having an equal preference for all genres and therefore corresponds to the degree of dispersion

[28] There has been some disagreement on how omnivorousness should be measured (see Peterson 2005). The results in this section are based on a simple additive scale of all genres that a respondent indicated liking or liking very much. Similar results were obtained using other operationalizations of omnivorousness that are in line with Peterson and Kern's (1996) conceptualization of omnivores as individuals who consume both highbrow and non-highbrow culture.

in a respondent's distribution of preferences. I use mean difference in order to measure egalitarianism.[29]

The boxplots in figure 8 demonstrate that egalitarianism and omnivorousness measure different phenomena. Members of the Omni-Univore group are, by average, only modestly more omnivorous than their peers in the two other groups (left side) but are significantly more egalitarian (right side). The relatively low mean difference in this group suggests that its members have a less discriminatory appreciation of musical genres than their peers do, whether they equally like or dislike most genres. Figure 9 presents correlations between these two measures and various sociodemographic measures. These demonstrate that what distinguishes this group is not so much how the social positions of its members are reflected by their levels of omnivorousness but how they correspond to the extent to which their preferences are equitable. While in the two other groups the tendency to make cultural distinctions is mostly related to age, in the Omni-Univore group it is a reflection of one's high income and white racial identity. Omnivorousness, on the other hand, is not significantly correlated in this group with any sociodemographic variable except for education, which is similarly correlated with omnivorousness in the two other groups.

Overall, these results do not negate the assertion that music consumers diverge in the breadths of their cultural preferences in socially significant ways. But they add important qualifications to the cultural omnivore thesis. First, they suggest that at least 55% of Americans, who adhere to exclusionary logics of cultural distinction, do not perceive musical consumption as defined primarily by how broad one's preferences are. Second, among the remaining 45% who exhibit a pattern that ranges from exceptionally narrow to exceptionally broad musical preferences, omnivorousness explains only little sociodemographic variance. Rather, divergences in sociodemographic profiles become more pronounced when examining the level of egalitarianism in the preferences of members of this group. Third, the correlation, in this group, between high income and discriminating taste, and particularly that liking pop in this group is associated with high status, racial narrow-mindedness, and rejection of music with black roots, undermines the supposed connection between omnivorousness and social tolerance. Altogether, these qualifications imply that high-status Americans have not overwhelmingly forsaken cultural

[29] The mean difference is a measure of statistical dispersion that equals the expected absolute difference between two random variables drawn from a distribution. It is an alternative measure to the standard deviation, which is not calculated in respect to the mean and is more adequately suited for measuring variability for nonnormal distributions (Yitzhaki 2003).

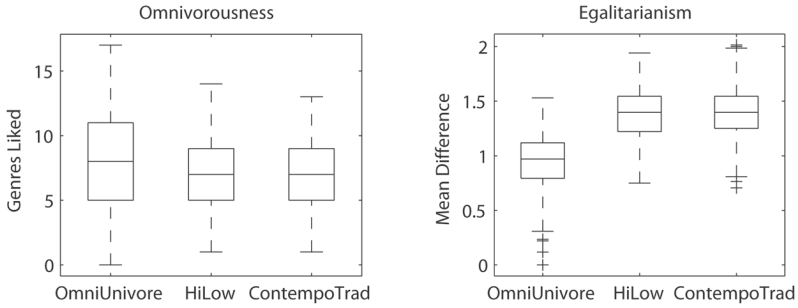

FIG. 8.—Distributions of numbers of genres liked and the mean difference between genre preferences, by RCA group.

hierarchies and that those who have become more inclusive in their tastes are not necessarily motivated by a forthright rejection of social exclusion. Rather than presenting omnivorousness as having replaced elitism, a relational analysis makes visible the different axes of distinction that Americans rely on when consuming music.

There is much more that can be said on the implications of these findings for our understanding of how music consumption is related to social stratification in the United States, particularly on how and why music marks various social identities. Though relevant, these discussions are beyond the scope of this article. Nevertheless, it is important to note how the results of this analysis highlight three fundamental insights that are often overlooked in studies of social symbolism of cultural taste. First, they demonstrate that practical classification systems emerge from the multiple relationships between significances that consumers ascribe to musical genres and do not necessarily correspond to generally accepted taxonomies. The canonical distinction between highbrow, middlebrow, and lowbrow culture is not reflected in any of the classifications that emerge from the three groups identified by RCA, not even the Hi-Low group in which, for example, folk music is associated with classical music and opera. Relying on a priori assumptions about the rankings and similarities between musical genres might therefore obscure the ways in which music and people are matched in intricate systems of classification. By refraining from such impositions, RCA succeeds in identifying the coexistence of different classification systems that are normally overlooked.

Second, the divergent correlates between sociodemographic attributes and musical preferences in each group demonstrate that the same musical genre may carry different meanings in different social contexts. Jazz, for example, is understood as a symbol of socioeconomic status in the Hi-Low group, whereas in the Contempo-Trad group it marks racial toler-

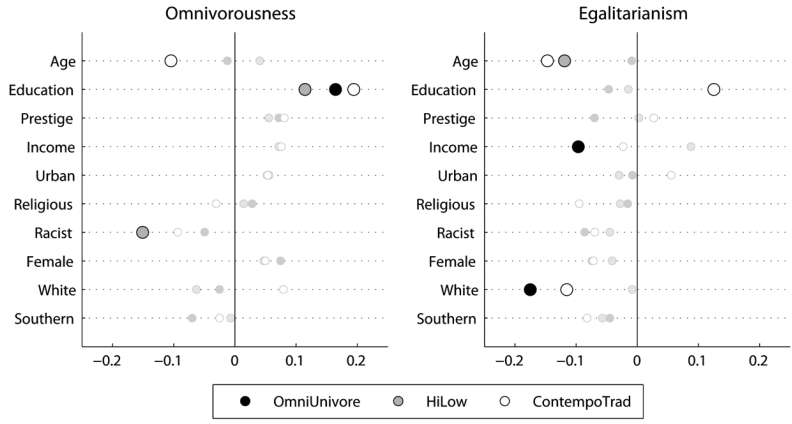

FIG. 9.—Pearson correlation coefficients for omnivorousness, measured as number of genres liked, and egalitarianism, measured as the opposite of the mean difference between genre preferences, disaggregated by RCA group. Each row represents correlations with one sociodemographic. Large circles signify a significant correlation (for $\alpha = 0.05$). Insignificant correlations are represented by smaller grayed circles.

ance, secularism, and urbanism. Thus its rejection in the former group appears to be related to class identity, whereas in the latter it is related to regional and racial identities. Similarly, while pop is associated with racial tolerance in the Contempo-Trad group, it is a correlate of intolerance in the Omni-Univore group. Such multivocality requires a methodological approach that does not presuppose that the relationships between sociodemographic attributes and cultural practices are homogenous within a given population.

Finally, the results of this study also demonstrate why addressing heterogeneity by decomposing the population into predefined sociodemographically homogenous groups cannot fully account for the complex interplay between social position and cultural taste. As the delta correlations demonstrate, pop simultaneously marks high socioeconomic status in the Omni-Univore group and low socioeconomic status in the Hi-Low group. While in the former a performance of high status entails liking both pop and classical music, in the latter it entails liking classical music but disliking pop. The same set of sociodemographic variables therefore has different predictive effects on musical taste in each group. If we were to model these effects using conventional regression analysis over the sample as a whole, these two opposing trends would have offset one another. Moreover, examining the correlations between the various sociodemographic variables in each group reveals that high-status individuals in these two groups are distinguishable by age: whereas younger educated

and high-income individuals tend toward cultural heterarchy that embraces both popular and classical music as a means to perform their class, older individuals cling to more old-fashioned classifications that continue to discriminate between high and popular culture. But because each group contains individuals of all ages—in the Hi-Low group, younger people reject music that is normally labeled highbrow—modeling such interactive complexity using conventional regression analysis would have been practically impossible. Taking into account both the associations between genres—in this particular example classical music and pop—as well the similarities between individuals, allows RCA to reveal these complex patterns without making a priori assumptions about how heterogeneity is explained by sociodemographics.

CONCLUSION

Mapping shared understandings, and the social profiles of those who hold them, is a key undertaking for those set to unpack the elusive construct we call "culture." But because cultural objects—like music—often elicit different meanings in different contexts and for different people, this is not a simple task. Sociologists of culture have long argued that the meanings that social actors attribute to symbols and actions emerge from the multiple associations they make between them and aggregate into coherent structures of relevance and opposition through interpersonal interaction (Mohr and White 2008). Uncovering these structures therefore requires a relational approach that simultaneously looks for patterns of similarity and opposition within and between individuals' attitudes. But conventional statistical methods are not attuned to meeting this challenge. Consequently, studies that rely on such methods for analyzing multivariate cultural data are often forced to (1) draw on a priori assumptions about how cultural objects are classified, (2) overlook ideational heterogeneity by presupposing that the relationship between social attributes and cultural interpretations is consistent across individuals, and (3) essentialize certain social dimensions as defining the boundaries between different cultural groups.

Studies of cultural omnivorousness, despite their substantial contribution to our understanding of the social significance of taste, are, by and large, no exception. By examining data from a relational perspective, RCA obviates the limiting assumptions on which most rely. Thus we are able to use RCA to discover musical classification systems that defy outmoded divisions between highbrow and lowbrow culture; reevaluate divergent musical preferences of individuals not only as different flavors of omnivorousness but as parallel logics of social distinction; and highlight how

various social dimensions like age, education, and urbanism interact in complex ways to produce mappings between sociodemographic attributes and musical preferences. These results call for future research aimed at explaining why different people gravitate toward different musical "thought communities." As they problematize some of the findings and assumptions of previous studies, these findings also invite us to rethink the concept of cultural omnivorousness.

The analysis presented in this article is primarily intended as a test case that demonstrates the usefulness of RCA. It does so by showing that the three groups detected by it differ in their patterns of association between musical preferences and in the relationships between these patterns and their practitioners' social backgrounds. The different and often opposing correlations between social attributes and musical preferences within each group, such as the different social significances that liking pop carries, underscore the distinct shared understandings that each group is founded on. Compared to other works on cultural omnivorousness, this analysis provides a more nuanced and complex account of the variety of ways by which social status and musical taste correspond to one another.

Unlike other methods that look for groups of like-minded people, RCA compares actors not by the similarities in their beliefs but on the basis of their shared understandings of the mutual relevance and opposition between beliefs. This makes it particularly suitable for complex sociological problems in which the outcome is not a singular variable but rather a set of interdependent variables. For example, knowing that someone likes pop music tells us very little about them; only by understanding how this preference relates to other symbolic behaviors can others extrapolate its social significance. RCA might also be applicable to problems outside the scope of sociology per se, such as analyzing complex structures of political opinion or consumer behavior. In fact, it can be extended to virtually any problem that requires dealing with heterogeneity by identifying groups that vary with respect to systematic patterns of relationships. These may include, for example, problems of equifinality in the patterns of change over time in the behaviors of people, firms, or financial institutions.

Overall, RCA is a powerful inductive tool for the analysis of culture. But, like any method, it has its limitations. It does not free its users from the need to carefully, and in a theoretically informed manner, select and operationalize their variables. Because relationality is computed by comparing all pairs of differences between variables, it is highly sensitive to the boundary conditions defining the domain that it measures. Relationality also assumes that all variables being analyzed are equidistantly scaled, which can be problematic in the case of subjective attitudes. Future work will focus on enhancements to RCA that relax this assumption. Finally, because the boundaries between ideational groups depend on the

different schematic representations that individuals use, they are never as clear-cut as our theoretical impositions expect them to be. While some individuals occupy corners of the belief space that are defined by distinct cultural logics, others might be located closer to the intersections between them. RCA can therefore be extended to use graph-partitioning algorithms that provide likelihoods of belongingness to a group, rather than binary assignments to them (see, e.g., Schweinberger and Snijders 2003; Handcock, Raftery, and Tantrum 2007). More generally, future research would benefit from further investigations into the merits of various techniques for partitioning the graph of schematic similarity as well as the criteria for distinguishing between significant and insignificant values.

Reexamining cultural omnivorousness with RCA makes visible the complex nonlinearities that connect social structure and its symbolic production. Given the paucity of systematic data on musical preferences in the United States from periods earlier than the 1970s, it is difficult to gauge to what extent the cultural omnivore is a unique product of post-sixties cultural sensitivities. But assuming that a cultural shift has indeed occurred in the manner described by the omnivore theory, the coexistence of different logics of distinction demonstrated in this analysis suggests that culture can evolve in several directions at once: in the face of changes in the institutional environment, some (the Hi-Low group) cling to established symbolic hierarchies, some (the Contempo-Trad group) redraw their boundaries, whereas others (the Omni-Univore group) redefine them. It also demonstrates that the same bounded field of social activity can lend itself to different interpretations that rely on competing understandings and that correspond in complex ways to their practitioners' social backgrounds. Ultimately, in thinking about the incremental process of cultural evolution, relationality alerts us not to how cultural transmission molds individual attitudes but how it fine-tunes relations between these attitudes to tacitly produce complex structures that collectively aggregate into shared understandings.

REFERENCES

Abbott, Andrew. 1988. "Transcending General Linear Reality." *Sociological Theory* 6: 169–86.

Ashmore Richard D., Kay Deaux, and Tracy McLaughlin-Volpe. 2004. "An Organizing Framework for Collective Identity: Articulation and Significance of Multidimensionality." *Psychological Bulletin* 130:80–114.

Baldassarri, Delia, and Andrew Gelman. 2008. "Partisans without Constraint: Political Polarization and Trends in American Public Opinion." *American Journal of Sociology* 114 (2): 408–46.

Berger, Peter L., and Thomas Luckmann. 1966. *The Social Construction of Reality*. Garden City, N.Y.: Doubleday.

Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgment of Taste*. Cambridge, Mass.: Harvard University Press.
———. 1990. *The Logic of Practice*. Stanford, Calif.: Stanford University Press.
Breiger, Ronald L., and John W. Mohr. 2004. "Institutional Logics from the Aggregation of Organizational Networks: Operational Procedures for the Analysis of Counted Data." *Computational and Mathematical Organization Theory* 10:17–43.
Brubaker, Rogers, Mara Loveman, and Peter Stamatov. 2004. "Ethnicity as Cognition." *Theory and Society* 33:31–64.
Bryson, Bethany. 1996. "'Anything but Heavy Metal': Symbolic Exclusion and Musical Dislikes." *American Sociological Review* 61 (5): 884–99.
Collins, Randall. 1992. "Women and the Production of Status Culture." Pp. 213–31 in *Cultivating Difference: Symbolic Boundaries and the Making of Inequality*, edited by Michèle Lamont and Marcel Fournier. Chicago: University of Chicago Press.
———. 2004. *Interaction Ritual Chains*. Princeton. N.J.: Princeton University Press.
Coulter, Phillip B. 1989. *Measuring Inequality: A Methodological Handbook*. Boulder, Colo.: Westview Press.
Crumley, Carole. 1995. "Heterarchy and the Analysis of Complex Societies." *Archeological Papers of the American Anthropological Association* 6 (1): 1–5.
D'Andrade, Roy G. 1995. *The Development of Cognitive Anthropology*. Cambridge: Cambridge University Press.
Danon, Leon, Albert Diaz-Guilera, Jordi Duch, and Alex Arenas. 2005. "Comparing Community Structure Identification." *Journal of Statistical Mechanics*, no. 9 (September): 09008.
DeJordy, Rich, Stephen P. Borgatti, Chris Roussin, and Daniel S. Halgin. 2007. "Visualizing Proximity Data." *Field Methods* 19 (3): 239–63.
DiMaggio, Paul. 1987. "Classification in Art." *American Sociological Review* 52:440–55.
———. 1997. "Culture and Cognition." *Annual Review of Sociology* 23:263–87.
DiMaggio, Paul, John Evans, and Bethany Bryson. 1996. "Have Americans' Social Attitudes Become More Polarized?" *American Journal of Sociology* 102:690–755.
Eliasoph, Nina, and Paul Lichterman. 2003. "Culture in Interaction." *American Journal of Sociology* 108 (4): 735–94.
Emirbayer, Mustafa. 1997. "Manifesto for a Relational Sociology." *American Journal of Sociology* 103 (2): 281–317.
Enfield, Nick J. 2000. "The Theory of Cultural Logic: How Individuals Combine Social Intelligence with Semiotics to Create and Maintain Cultural Meaning." *Cultural Dynamics* 12:35–64.
Erickson, Bonnie. 1996. "Culture, Class and Connections." *American Journal of Sociology* 102 (1): 217–51.
Ferree, Myra Marx. 2003. "Resonance and Radicalism: Feminist Framing in the Abortion Debates in the United States and Germany." *American Journal of Sociology* 109:304–44.
Fiorina, Morris P., Samuel J. Abrams, and Jeremy C. Pope. 2005. *Culture War? The Myth of Polarized America*. New York: Pearson Longman.
Fischer, Claude S., and Michael Hout. 2006. *Century of Difference: How America Changed in the Last One Hundred Years*. New York: Russell Sage Foundation.
Fiske, Susan T., and Patricia W. Linville. 1980. "What Does the Schema Concept Buy Us?" *Personality and Social Psychology Bulletin* 6:543–57.
Fiske, Susan T., and Shelley E. Taylor. 2008. *Social Cognition: From Brains to Culture*. New York: McGraw-Hill.
Friedland, Roger, and Robert Alford. 1991. "Bringing Society Back In: Symbols, Practices, and Institutional Contradictions." Pp. 223–62 in *The New Institutionalism in Organizational Analysis*, edited by Walter W. Powell and Paul DiMaggio. Chicago: University of Chicago Press.

Galdi, Silvia, Luciano Arcuri, and Bertram Gawronski. 2008. "Automatic Mental Associations Predict Future Choices of Undecided Decision-Makers." *Science* 22:1100–1102.

Gamson, William A., and Andre Modigliani. 1989. "Media Discourse and Public Opinion on Nuclear Power: A Constructionist Approach." *American Journal of Sociology* 95:1–37.

García-Álvarez, Ercilia, Tally Katz-Gerro, and Jordi López-Sintas. 2007. "Deconstructing Cultural Omnivorousness: Heterology in Americans' Musical Preferences." *Social Forces* 86 (2): 417–43.

Griswold, Wendy. 1987. "A Methodological Framework for the Sociology of Culture." *Sociological Methodology* 17:1–35.

Han, Shin-Kap. 2003. "Unraveling the Brow: What and How of Choice in Musical Preference." *Sociological Perspectives* 46 (4): 435–59.

Handcock, Mark S., Adrian E. Raftery, and Jeremy M. Tantrum. 2007. "Model-Based Clustering for Social Networks." *Journal of the Royal Statistical Society, Series A* 170 (2): 301–54.

Jepperson, Ronald L., and Ann Swidler. 1994. "What Properties of Culture Should We Measure?" *Poetics* 22 (4): 359–71.

Katz-Gerro, Tally. 2002. "Highbrow Cultural Consumption and Class Distinction in Italy, Israel, West Germany, Sweden, and the United States." *Social Forces* 81 (1): 207–29.

Lena, Jennifer C., and Richard Peterson. 2008. "Classification as Culture: Types and Trajectories of Music Genres." *American Sociological Review* 73 (5): 697–718.

Lieberman, Matthew D., Ruth Gaunt, Daniel T. Gilbert, and Yaccov Trope. 2002. "Reflection and Reflexion: A Social Cognitive Neuroscience Approach to Attributional Inference." *Advances in Experimental Social Psychology* 34:199–249.

Lizardo, Omar. 2005. "Can Cultural Capital Theory Be Considered in the Light of World Polity Institutionalism? Evidence from Spain." *Poetics* 33:81–110.

Lopes, Paul D. 2002. *The Rise of a Jazz Art World*. Cambridge: Cambridge University Press.

Martin, John L. 2000*a*. "The Relation of Aggregate Statistics in Beliefs to Culture and Cognition." *Poetics* 28:5–20.

———. 2000*b*."What Do Animals Do All Day? The Division of Labor, Class Bodies, and Totemic Thinking in the Popular Imagination." *Poetics* 27:195–231.

———. 2002. "Power, Authority, and the Constraint of Belief Systems." *American Journal of Sociology* 107 (4): 861–904.

McNeil, W. K. 2005. *Encyclopedia of American Gospel Music*. New York: Routledge.

Mohr, John W. 1994. "Soldiers, Mothers, Tramps and Others: Discourse Roles in the 1907 New York City Charity Directory." *Poetics* 22:327–57.

———. 1998. "Measuring Meaning Structures." *Annual Review of Sociology* 24:345–70.

Mohr, John W., and Harrison C. White. 2008. "How to Model an Institution." *Theory and Society* 37:485–512.

Newman, Mark E. J. 2004. "Analysis of Weighted Networks." *Physical Review* E70: 056131.

———. 2006. "Finding Community Structure in Networks Using the Eigenvectors of Matrices." *Physical Review* E74:036104.

Onnela, Jukka-Pekka, Jari Saramäki, János Kertész, and Kimmo Kaski. 2005. "Intensity and Coherence of Motifs in Weighted Complex Networks." *Physical Review* E71:065103 (R).

Peterson, Richard. 1992. "Understanding Audience Segmentation: From Elite and Mass to Omnivore and Univore." *Poetics* 21:243–58.

———. 1997. "The Rise and Fall of Highbrow Snobbery as Status Marker." *Poetics* 25:75–92.

———. 2005. "Problems in Comparative Research: The Example of Omnivorousness." *Poetics* 33:257–82.
Peterson, Richard, and Roger Kern. 1996. "Changing Highbrow Taste: From Snob to Omnivore." *American Sociological Review* 64 (5): 900–907.
Schudson, Michael. 1989. "How Culture Works: Perspectives from Media Studies on the Efficacy of Symbols." *Theory and Society* 18:153–80.
Schweinberger, Michael, and Tom A. B. Snijders. 2003. "Settings in Social Networks: A Measurement Mode." *Sociological Methodology* 33 (1): 307–41.
Sonnett, John. 2004. "Musical Boundaries: Intersections of Form and Content." *Poetics* 32 (3): 247–64.
Strauss, Claudia, and Naomi Quinn. 1997. *A Cognitive Theory of Cultural Meaning*. Cambridge: Cambridge University Press.
Swidler, Ann. 1986. "Culture in Action: Symbols and Strategies." *American Sociological Review* 51:273–86.
Tampubolon, Gindo. 2008. "Revisiting Omnivores in America circa 1990s: The Exclusiveness of Omnivores?" *Poetics* 36:243–64.
Warde, Alan, David Wright, and Modesto Gayo-Cal. 2008. "The Omnivorous Orientation in the UK." *Poetics* 36:148–65.
Wasserman, Stanley, and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications*. Cambridge: Cambridge University Press.
Yitzhaki, Shlomo. 2003. "Gini's Mean Difference: A Superior Measure of Variability for Non-Normal Distributions." *Metron—International Journal of Statistics* 61 (2): 285–316.
Zerubavel, Eviatar. 1997. *Social Mindscapes: An Invitation to Cognitive Sociology*. Cambridge, Mass.: Harvard University Press.