The mutual specification of genres and audiences: Reflective two-mode centralities in person-to-culture data☆

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ABSTRACT

Recent developments at the intersection of cultural sociology and network theory suggest that the relations between persons and the cultural forms they consume can be productively analyzed using conceptual resources and methods adapted from network analysis. In this paper, I seek to contribute to this developing line of thinking on the culture-networks link as it pertains to the sociology of taste. I present a general analytic and measurement framework useful for rethinking traditional survey (or population) based data on individuals and their cultural choices as a two mode persons × genres network. The proposed methodological tools allow me to develop a set of "reflective" metrics useful for ranking both persons and genres in terms of the pattern of choices and audience composition embedded in the cultural network. The empirical analysis shows that these metrics have both face and criterion validity, allowing us to extract useful information that would remain out of reach of standard quantitative strategies. I close by outlining the analytic and substantive implications of the approach.

1. Introduction

Recent developments at the intersection of cultural sociology and network theory provide novel ways to move beyond traditional conceptualizations of networks as the "conduits" through which cultural contents flow and of culture as a disembodied abstraction devoid of a relational basis (Lewis, Gonzalez, & Kaufman, 2012; Lizardo, 2006; Vaisey & Lizardo, 2010). A key advance in this line of thinking is the importation of network imagery and analytic tools for the analysis of the sort of large-scale quantitative data that has been the bread and butter of the sociology of taste (e.g. Bourdieu, 1984; Peterson & Kern, 1996; Warde, Wright, & Gayo-Cal, 2008). The key is the re-conceptualize the usual records of responses (choice, belief, adoption, positive or negative evaluation, and so on) at the individual level with respect to a given set of cultural forms, as a record of the network of relations obtaining between individuals and the relevant set of cultural objects under investigation. This network can then be productively analyzed using conceptual and methodological resources adapted from network science and network analysis (Lizardo, 2014; Pachucki & Breiger, 2010; Sonnett, 2016). These efforts promise to bring to bear analytic specificity and substantive bite to Peterson (1983) re-thinking of the expressive consumption of cultural objects on the part of individuals as empirically detectable *patterns* of cultural choice (see also DiMaggio, 1987).

In this paper I seek to contribute to this developing line of thinking on the culture-networks link as it pertains to the sociology of taste. I present a general analytic and measurement framework useful for conceptualizing expressive choice patterns as inducing a

network of persons connected to the cultural genres they choose. The approach is particularly applicable to work on tastes and cultural choices using a "large-N" strategy whether survey or population-based. This requires treating the standard persons by variables matrix in which survey data are coded and made available to analysts as an example of a *two-mode* network. This is a proposal that has been made before (Borgatti & Everett, 1997), but the theoretical and measurement implications of which have only recently begun to be fully taken seriously in the sociological study of cultural choice (see Boutyline, 2017; Boutyline & Vaisey, 2017; Goldberg, 2011; Lizardo, 2014; Silver, Lee, & Childress, 2016; Vlegels & Lievens, 2017). This paper is meant to be a contribution to this emerging line of work.

I show that rethinking the traditional arts participation or cultural choice survey data available to researchers in the sociology of taste as a relational data source can provide us with more powerful ways to tackle perennial issues in the study of cultural stratification. Especially those related to theorizing the sources and consequences of substantively relevant heterogeneity in patterns of cultural choice (Peterson, 1992), as well as the way in which persons engage cultural objects are modulated by the (perceived) relational properties of those objects (Lieberson, 2000).

A key payoff of the analysis is the demonstration of how one of the core organizing constructs of recent work in the sociology of taste—Peterson (1992) notion of "cultural omnivorousness"—can be thought of as a special case of an entire range of conceptually related metrics useful for formally quantifying the cultural propensities of persons as marked by the properties of the genres that they consume. I show that an analogous set of metrics can be developed to differentiate the relational status of cultural genres based on the cultural choice propensities of their audiences. Iteratively applying this "reflective" strategy (Hidalgo & Hausmann, 2009), leads to the development and elucidation of a set of ordinal scales capable of extracting information encoded in the indirect paths linking linking persons and genres in the two-mode cultural network. This reveals how the ranking of *persons* along a given dimension of taste (popular or niche; omnivore or univore), as given by their pattern of cultural choices, mutually specifies the position of genres both in relation to each other and to the persons who choose them (Breiger, 1974).

2. Two-mode centralities and the method of reflections

I begin by considering the $n \times k$ matrix of persons by variables making up the usual survey data set in the sociology of taste. The same considerations apply to population-level "big" data sets not produced by sampling, as long as they are structured in a persons by variables format. Here N is the number of persons (the sample size) and the K is the number of of cultural items to be included in the analysis. Persons connect to cultural items by providing reports of engagement, taste, and so on. While not usually thought of in this manner, survey data is simply an example of a two-mode network in which persons are connected to the items they provide information on (Borgatti & Everett, 1997).

Standard matrix transformations of the data (Breiger, 1974), such as the projection of the original two-mode data set into a single-mode representation made up of an $n \times n$ weighted matrix of persons connected to other persons (in terms of the number of cultural choices they have in common) or an $k \times k$ matrix of cultural items connected to other cultural items (in terms of the number of persons shared) make the usual techniques of network analysis applicable (Borgatti & Everett, 1997; Lizardo, 2014). In the context of the usual arts participation survey, persons are connected to the cultural items they report liking or the cultural activities they report engaging in (DiMaggio, 1987).

2.1. Person-level centrality

Focusing on the rows of the rectangular matrix (persons included in the survey), the traditional network-analytic notion of *degree centrality* (Freeman, 1978) has a straightforward analogue in this context (Faust, 1997). It is the sum of the number of cultural choices the person makes:

$$d_{i0} = \sum_k a_{ik}$$

(1)

Where $a_{ik} = 1$ if person i reports liking or engaging in cultural activity k and the sum is over all genres k. This is naturally a straightforward index of *cultural omnivorousness*. This indicator of degree-centrality has also been referred to as "omnivorousness by volume" in the literature, and has been shown to have high levels of construct and criterion validity (Fishman & Lizardo, 2013; Warde et al., 2008).

2.2. Genre-level centrality

In the very same way in which persons are differentiated by the number of cultural choices they make (Peterson, 1992), genres are differentiated by the number of persons who choose them; this partition separates genres by their relative *popularity* into "niche" and "popular" genres (Lieberson, 2000; Mark, 2003).

In the standard survey data format, genre popularity is simply the proportion of the total sample who chooses that genre. In the context of two-mode network data analysis, this is the equivalent to the relative "expansiveness" or coverage of the "event"—when the matrix considered is person by event data—represented in the other mode weighted by the total number of persons (Faust, 1997):