

**Managing the Boundaries of Taste:
Culture, Valuation, and Computational Social Science***

Ryan Light
University of Oregon

Colin Odden
Ohio State University
Ohio Colleges of Medicine

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*Please direct all correspondence to Ryan Light, light@uoregon.edu. The authors thank James Moody, Jill Ann Harrison, Matthew Norton, Brandon Stewart, Achim Edelmann, Clare Rosenfeld Evans, Jordan Besek, and Brian Ott for their helpful comments on earlier drafts of this paper.

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Abstract

The proliferation of cultural objects, such as music, books, film and websites, has created a new problem: How do consumers determine the value of cultural objects in an age of information glut? Crowd-sourcing – paralleling word-of-mouth recommendations – has taken center stage, yet expert opinion has also assumed renewed importance. Prior work on the valuation of artworks and other cultural artifacts identifies ways critics establish and maintain classificatory boundaries, such as genre. We extend this research by offering a theoretical approach emphasizing the dynamics of critics' valuation and classification. Empirically, this analysis turns to *Pitchfork.com*, an influential music review website, to examine the relationship between classification and valuation. Using topic models of fourteen years of *Pitchfork.com* album reviews (n=14,495), we model the dynamics of valuation through genre and additional factors predictive of positive reviews and cultural consecration. We use gold record awards to study the relationship between valuation processes and commercial outcomes. Conclusions highlight the role of professional critics, alongside crowdsourcing and other forms of criticism, in the dynamic process of valuation and encourage the continued exploration of fruitful ways to connect computational and more canonical ways of conducting sociological research.

Keywords: Valuation, Cultural Markets, Organizations, Popular Music, Computational Social Science

The state of being hip rarely endures. The capricious character of taste, however, does not prevent individual artists and cultural organizations from active attempts to remain relevant to their audiences. Organizations generally engage in evolving strategies, whether through innovation or by preserving and emphasizing time-tested strategies, to keep or expand their position relative to other organizations. For example, a cultural producer may strategically specialize, such as in a particular artistic or production style, or seek to span multiple areas (Goldberg, Hannan, and Kovács 2016; Hannan 2010). Cultural markets provide a useful setting for evaluating these dynamic processes as individuals and organizations within cultural markets explicitly – often discursively – maintain relevance through classification and valuation, or the practice of giving worth or value, in ways that are hidden in other markets. For example, art critics helped establish the boundaries of Impressionism via approving and condemning reviews (Becker 1982; White and White 1993; Wijnberg and Gemser 2000). In such cases, critics mediate between cultural producers and the public, helping to construct a particular taste or aesthetic (Ferguson 2004; Rao, Monin, and Durand 2005). Critics’ mediating role draws attention to the relationship between classification and valuation as managing boundaries of taste, or aesthetic boundaries, can inform the sense of worth assigned to a cultural object.

Social scientific research on valuation has recently expanded from an early focus on economic quantification to incorporate a multidimensional consideration of both quantification and subjective taste (Lamont 2012). This work in the sociology of valuation and evaluation argues that valuation is not solely an economic process, but also a deeply social one. Recent attempts to organize the broad and diverse literature on valuation connect valuation and related processes, including classification, to status hierarchies within both cultural and social settings (Hutter and Stark 2015; Lamont 2012). Prior work on the production of culture and cultural markets outlines key factors in the valuation process and boundaries, such as the role of niche formation and cumulative advantage (e.g. Hsu, Hannan, Kocak 2009; Salganik and Watts 2008). Much of this previous work does not focus on how valuation changes over time, especially in organizational contexts. In this paper, we examine the dynamic – both change and the lack thereof – characteristics of valuation, consider how valuation processes occur in “indie” markets

that wedge between and sometimes bridge commercial production markets and avant-garde scenes, and draw attention to the case of musical criticism and cultural markets more generally.

Music criticism plays a key role in the construction and maintenance of the boundaries around musical classifications with implications for valuation. Critics assert and reinforce symbolic boundaries – the “conceptual distinctions made by social actors to categorize objects, people, practices and even time and space” (Lamont and Molnár 2002:168) – in multiple ways, helping consumers to make decisions given the glut of available choices. Here we focus on three: First, critics use language to construct boundaries around cultural objects or to classify genres that summarize their critical perspective or aesthetic. Second, they connect these genres to musical success and failure through positive and negative reviews and by linking these successes and failures to other musical artists, cultural products, and fields. And, third, they update the strategies by which they classify and value cultural objects to maintain their own relevance. This paper contributes specifically to prior research on the evolution of genres and cultural markets (e.g. Dowd 2003; Kremp 2010; Lena 2006), expands upon prior work on valuation generally and cultural consecration specifically – or the process whereby “sacred” cultural products and producers are separated from their “profane” counterparts (e.g. Allen and Lincoln 2004; Cattani, Ferriani, and Allison 2014; Schmutz 2005), and emphasizes how both valuation and classification through genre formation and maintenance are dynamic social processes.

We analyze *Pitchfork.com* – a prominent “indie” music website – to examine the relationship between classification and cultural valuation with a specific focus on how these processes change as *Pitchfork* matures. We begin our analysis by using computational techniques that construct topic models from the content of the reviews themselves. This method is an important component in the new computational science toolkit as scholars wrestle with the proliferation of digitized data (Bail 2014; Light 2014). We use topic models to identify genres discussed in over 14,000 music reviews published on *Pitchfork.com* between 1999 and 2013. As an initial indication of how *Pitchfork* has changed during this period, we identify *hot* and *cold* genres – those that waxed and waned, respectively. We also capture additional information, such as the number of previous times the artist has been reviewed and an album’s

major label status, which help tell the organizational story of how *Pitchfork* engages the valuation process. Next, we model the effect of these variables on two key aspects of the valuation process: ratings and consecration. Last, we analyze the relationship between valuation and commercial success by turning to the factors associated with earning a gold record award for selling 500,000 or more records. In conclusion, we discuss the implications of these findings and computational techniques for future work on classification and cultural valuation.

CULTURAL CRITICISM AND THE BOUNDARIES OF TASTE

Cultural markets are beset by quality uncertainty whereby actors – both producers and consumers – make decisions based on incomplete information and/or ambiguous criteria (Wijnberg & Gemser, 2000).

Economic sociologists puzzling over the problem of uncertainty have focused on the social implications of this imbalance, seeking to fill the void that is left when rational calculation inadequately describes market behavior (e.g. Godart and Mears 2009; Podolny 1994). Building on Bourdieu's work on cultural production, sociologists researching valuation and evaluation have begun to outline a program for understanding the social aspects of valuation when economic criteria are uncertain and knowledge is incomplete (Lamont 2012), yet this work remains in its early stages. Towards a greater understanding of valuation and cultural markets, we build our discussion as follows: First, we describe the valuative role that critical actors play within cultural markets. Next, we specify several of the factors that contribute to the valuation process -- including the role of niches, cumulative advantage, and ratings generally.

Building on Lena (2012), we further theorize the relationship between classification – as the boundary work performed by critical actors around genres – and valuation.

Cultural Criticism as Cultural Guide

Cultural goods are characterized by their subjective, experiential character, but also their uniqueness or singularity – no two songs or paintings are exactly alike. This singularity makes valuation difficult as consumers do not have the valuative tools based on direct comparison characteristic of many markets.

Valuation likely becomes even more difficult in markets with a glut of available choices. These valuation challenges create space for exogenous actors to aid, or even construct (Espeland and Sauder 2007) the valuation process. As Karpik (2010) describes, singularity markets are valued in part or in whole by “judgment devices” – either impersonal or personal – tools for sorting the good from the bad. Given the difficulty of determining the “true” value of cultural objects, like a craft beer or a recording of the Goldberg Variations, we turn to our personal networks, such as our friends or family, or to more impersonal sources, such as critics and crowd-sourced reviews, to help guide our decision-making. In this way, judgment devices help reduce the opacity of cultural markets and make it easier for us to make informed decisions.¹ We have some evidence of how various judgment devices have gained power (Sauder and Lancaster 2006) and how they function as particular sorting-mechanisms (Rossman and Schilke 2014), but less is known about how judgment devices engage in a dynamic process of valuation. We take as our focus the embodiment of judgment devices in organizational actors which we term *critical organizations* and focus on how critical organizations engage in dynamic processes of classification and valuation.²

Critical organizations serve as impersonal judgment devices, helping to alleviate the opacity within cultural markets. Criticism provides the discourse structuring these markets as cultural markets are controlled in part by “expert-opinion” claims and claims to authenticity. These claims can compete with one another as critical organizations try to negotiate their role as legitimate arbiters of authenticity without being perceived as old-fashioned or distanced from the contents of the market. The subjective experience and valuation of music, along with the inability to directly evaluate a musical work without consuming it, provides opportunities for critics to function as interpretive guides as well as cultural gatekeepers (Griswold 1987). One way that this gatekeeping can occur is through critics’ “power to name” by assigning identities and boundaries or the “imposition of form” on what is popularly seen as subjective experience (Ferguson 2004:17).

Genres are one set of boundaries that critics may impose on a collection of cultural objects. Following Lena and Peterson (2008:698), genres are “systems of orientations, expectations, and

conventions that bind together an industry, performers, critics, and fans in making what they identify as a distinctive sort of music.” By filtering, rendering judgment on, and interpreting works, critics help create, reinforce and transform genre boundaries. Within popular music criticism, for example, a foundational aspect of this boundary maintenance – through “naming” – are the strategies that reviewers deploy in the competing discourses between “art” and “pop.” Reviewers may invoke a “pop” discourse to challenge perceived pretentiousness, or an “art” discourse to challenge perceived banality (Van Venrooij and Schmutz 2010).

In these ways criticism underscores how cultural production depends upon an “ensemble” of social relations beyond artists themselves, as critics and critical organizations play a key role in how cultural objects are consumed (Bourdieu 1993:118). Indeed, Becker (1982:132-135) argues that critics fulfill a key social role in cultural production by constructing coherent aesthetics that enable valuation by consumers and producers alike. Critics and producers both seek to build logical arguments in favor of their particular perspectives or favored cultural objects: Valuation itself plays a key role in building these arguments.

The Dynamics of Valuation

Critical organizations often use both quantitative ratings systems and qualitative reviews for processes of valuation. Typically, a rating serves as a quantified proxy for the review and works in conjunction with it. Organizations have a particular incentive to match the review to the rating, as dissonance can be reputation-damaging. Thus, the rating and reviewing process can be seen as a tightly knit package jointly contributing to the value assigned to a cultural object. Theoretically, several factors related to boundaries and boundary maintenance contribute to this valuation process: prior assessment, consecration, historical association, genre classification, and niche formation.

Valuation may be influenced by prior assessment. Cumulative advantage, popularized by Merton’s coinage of the “Matthew effect,” has been observed in economic and cultural markets and diffusion-based processes generally (e.g. Aral 2011; van de Rijt et al. 2014 and many others). For

example, Salganik and Watts (2008) find evidence of cumulative advantage in their Music Lab experiments. In these randomized-control experiments, participants were asked to listen to and evaluate unfamiliar music. In the control condition participants did not receive information about quality, while in the experimental group participants received information about each song's popularity. The authors find evidence of cumulative advantage as songs declared popular were reviewed more favorably in the experimental settings. Critical organizations may operate similarly, with similar cumulative advantage accruing to those artists reviewed repeatedly (and favorably).

The ratings system itself may be the most visible way that critical organizations engage in boundary-work through the process of bestowing 'star,' or even sacred, status on select artists. Similar to the distinction between "art" and "pop," genre royalty is separated from the ordinary. In his extensive discussion of this legitimization process, Bourdieu (1993) labels this process "cultural consecration." More recent sociological research deploys this idea to evaluate how cultural objects achieve sacred status. For example, Schmutz (2005) describes the process whereby *Rolling Stone* magazine consecrates rock albums via inclusion in their Top 500 Albums of All-Time. Allen and Parsons (2006) evaluate the induction of baseball players into the hall of fame as a similar process. In these cases, and in the majority of others (see Hicks and Petrova 2006; Schmutz and Faupel 2010), scholars evaluate retrospective cultural consecration as gatekeeping organizations determine which people or objects that will be granted elite status after the fact. Yet, Bourdieu (1993:121-23) allows that tastemakers, including "literary circles" and "critical circles," play a role in – and compete over – more immediate consecrating valuations.

The historical and more immediate functions of consecration work hand-in-hand, as critical organizations build histories that situate the reviewed artwork within a broader cultural cosmology. This involves the association of current goods with more recognizable works, often the consecrated historical elite. Historical association has the dual advantage of referencing artists and artworks more likely to be known to an audience, and yielding consecration by association. Critics invoke this process through comparison with and reference to other cultural producers and products. In this regard, reviews function

like citation networks as critics reach for comparisons to delineate how a new artwork fits into the cultural field.

The dynamics of valuation parallel the classification of genres and reinforce one another. Critical organizations' management of genres is a key component of the valuation process as this classification allows organizations to stake claims for new cultural objects, while abandoning or reifying old objects. That is to say, classification of genres may change, but need not change and these dynamics are likely uneven. Classification of genres occurs as critical organizations manipulate the boundaries around cultural objects. As a new record, for example, is reviewed, music critics are tasked with classifying the record within an existing genre, expanding the definition of an existing genre, or working towards constructing a new genre. Yet, recognition of genres suggests durability: Critics and critical organizations, persistently engaged in dynamic boundary-work, encourage the perception that genres do not change.

A central objective of critical organizations' boundary work consists of managing genres' trajectories, shepherding a genre from one stage of development to the next or denying such a transition. Lena's (2012, see Lena and Peterson 2008) innovative work on musical genres discusses these transitions or trajectories. Lena's typology allows for shifts in musical forms and classifications from obscure, creative avant-garde genres, through scene-based genres characterized by a sense of the local, but also connected through the internet, to more widespread industry-based and traditionalist genres. Participants in scene-based genres are often acutely aware of codifying a particular style, or aesthetic, as opposed to the eclecticism and experimentation of the avant-garde or the top-down, market-driven focus of industry-based genres (Lena and Peterson 2008:701-06) .

Critical organizations that develop during the scene-based stage, such as *Pitchfork.com*, serve to "define, explain, promote, and critique the music and its associated lifestyle" (Lena 2012:37). Although Lena focuses less on how critics engage in boundary formation and maintenance, her model promotes dynamic analyses of the role critical organizations play in cultural markets. In particular, a tension exists between more obscure genres and those with more mass appeal as scene-based solidarity is framed in opposition to authority and the mainstream. In other words, the legitimacy of scene-based producers and

scene-based critical organizations may be threatened by cooptation by commercial interests (see Moore 2003). Scene-based music, and the criticism that references it, is “brackish” – a riparian zone to which avant-garde art and artists can migrate and from which they can escape or otherwise disappear – and is the place where debates about authenticity and commercial appeal have their greatest overlap and tension. As critical organizations mature and/or their popularity increases, this tension may become more acute. Critical organizations’ management of boundaries around genres contributes to valuation as they guide genre trajectories from one stage to another (or not) and simultaneously assign both value and classification.

Last, organizational practices that engage niche-based strategies for success may be the most widely discussed sources of variation within recent literature on valuation and cultural markets. Niche width captures the extent to which cultural producers generate products that bridge multiple categories (Hannan 2010). Category-spanning is a risky tactic as audiences may have a difficult time placing an object that spans multiple categories (Hsu et al. 2009; Negro et al. 2010). Negro et al.’s (2010) analysis of the elite Italian wine industry illustrates the risks of category-crossing. Italian wine producers, like other cultural producers, make decisions regarding the extent to which they will use modern or traditional techniques to produce wine – hinging on, for example, whether they elect to use Slovenian oak, chestnut, or French oak casks/ barrels to age their wine. This study, and others like it (e.g. Uzzi et al. 2013), provides evidence that cultural products that span categories often lead to negative valuation, in this case by Italian wine critics. Consumers and critics alike consistently appear to prefer cultural products that are easier to identify within previous cultural schemas – a preference for purity over hybridity. In our case, we would anticipate that spanning of musical genres elicits a similar effect.

In sum, valuation in cultural markets is difficult because comparison is hard and ambiguity is high. Critical organizations – a type of informal judgment device in Karpik’s framework – act to reduce this uncertainty by informing consumers of the relative value of cultural objects and guiding their choices. Critical organizations engage in boundary-work to maintain their own relevance in a field of competitors. One way organizations engage in boundary-work is through processes of valuation and consecration –

separating the good from the bad or the sacred from the profane. The classification process – how organizations construct groups of cultural objects, like genres – also plays a key role in boundary-work and informs valuation. Other aspects of valuation include the role of category spanning – are cultural objects identified within a particular niche, such as a genre, more highly valued than category- (or genre-) spanning objects – and cumulative advantage or the Matthew effect. Importantly, valuation is dynamic, yet uneven and subject to change especially as critical organizations mature and/or attempt to expand.

***Pitchfork.com* as Exemplar Critical Organization**

To observe the dynamic valuation process, we turn to the case of *Pitchfork.com*. *Pitchfork.com* represents a critical organization with an explicit focus on music. *Pitchfork* was created in 1995 by Ryan Schreiber as a paper-based fanzine for independent music based in Chicago, IL. Starting with album reviews, it has since expanded into interviews, music news and gossip, and videos. 2016 saw the eleventh year of *Pitchfork* Music Festival – an annual music festival featuring acts selected by *Pitchfork*'s staff –, and an annual 'sister' festival in Paris began in 2011: *Pitchfork*'s product has expanded well beyond its original intent. *Pitchfork* reviews are written by the organization's professional writers and editors. While the direct effect of criticism on music consumption is difficult to know, the site receives over 45 million monthly page views (Cardew 2014) and is widely cited as having a major influence on artist recognition within the independent music world (Oakes 2009). In fact, culture writer David Izkoff (2006:2) describes it as “the most influential tastemaker on the music scene” and *The New Yorker* music critic Kelefa Sanneh (2015) recently described it as “the definitive indie publication.” Consistent with both its cultural – and, perhaps, commercial value – and relevant to our discussion of the maturation of indie critical organizations, *Pitchfork* was purchased in October 2015 by *The New Yorker* publisher Condé Nast (Somaiya 2015).

We use the content of the review and additional data, such as the album label and the review date, from *Pitchfork.com* to examine cultural valuation generally and cultural consecration specifically. We analyze how these processes change as *Pitchfork* matures. As we assert above, several key characteristics

likely affect the valuation process. First, we use topic models to identify genres discussed in the reviews and observe how these genres influence the valuation process and how this changes over time. The dynamics of valuation likely vary depending on genre as new genres gain and old genres wane in popularity. Importantly, some genres do not change in either popularity or valuation over time. Teasing apart the relationship between classification and valuation signals how *Pitchfork* responds to change. Second, we evaluate the effect of topics' structure by observing how *niche width*, the extent to which an album spans multiple genres, affects valuation. Albums identified as spanning multiple genres risk lower valuation. Third, a key question for an expanding scene-based organization is the relationship between indie modes of production and, per Lena (2012), more "industrial" ones. Using the case of *Pitchfork*, we provide insight into this relationship by examining both the genres and major record label status. Albums released on major record labels are likely to earn more positive valuations as *Pitchfork* gains prominence and matures. Lastly, we provide a picture of the consequences of this topic structure for record sales by modeling the relationship between genres, record characteristics, and gold record status (selling at least 500,000 records). While the *Pitchfork* rating is negatively related to gold record sales consistent with its "indie" status in a standalone model, this is mediated by genres and other factors related to the classification and valuation process.

DATA AND METHODS

This analysis uses all available album reviews from *Pitchfork.com* between January 1999 and December 2013 (n=14,495). As seen in figure 1, *Pitchfork* has grown (measured by total number of reviews) during this period and has averaged about 1,100 reviews per year since 2005. A *Pitchfork* album review comprises a quantitative score, review prose, and additional data, such as the review author, date, and the record label. The score is a rating from zero to ten, in one-tenth increments. The content of *Pitchfork* reviews is varied, ranging from the critical prose typical of pop music publications like *Rolling Stone* and the *Village Voice*, to more personalized narrative.

<Figure 1 about here>

Methods

Emerging largely from computer science are robust strategies for analyzing large sets of unstructured data. For example, topic modeling, including latent Dirichlet allocation, seeks to locate latent thematic structure that ties texts within a collection, or corpus, together (Roberts et al. 2014). Because topic modeling is unsupervised, we do not need to specify *a priori*, via hand-coding or a similar ‘supervised’ method, what core ideas connect the corpus. At the same time, topic models are more than simple keyword counts, but account for both the volume and contexts of how words are used in a corpus. Words are modeled (or grouped together) in relationship to other words. In this way, topic modeling can be thought of as an exploratory machine learning method that “reverse engineers” the writing process (Mohr and Bogdanov 2013). The method rests on the assumption that a text emerges from, and is structured by, a group of latent topics – *writing is writing about a thing or things*. This generative model accelerates prior methods of uncovering latent structures by reducing the process to a series of discrete probabilistic steps, a method that is repeatable and coder-neutral.

Topic models are also mixed-membership models: Documents can consist of multiple topics, as opposed to single membership models which categorize each document as a single category. This characteristic is key, as we understand criticism to involve different strategies for describing and evaluating cultural objects, ranging from more narrow – an album can be seen as reflecting a single genre – to more broad identifications – an album can be seen as genre-spanning. The output of topic models consists of a topic-word distribution – or how words align through co-appearance in documents – and a topic-document distribution – or how words in each document fall within the list of possible topics. While still relatively new, research using this method is growing in the social sciences (see Bail 2016; Light and Adams 2016; Light and Cunningham 2016; McFarland et al. 2013).

Analytic Strategy

After initial cleaning of the data to rectangularize the unstructured data, such as artists, review and score, into a unified database, we preprocessed the texts in several common ways (see Grimmer and Stewart

2013). First, as we are interested in locating genres within the text, we limit our data to nouns to reduce the likelihood of including terms associated with sentiment. We tag each word's part of speech using the part-of-speech tagger within R's tm package (Feinerer 2015). Next, we removed stop-words, such as prepositions or pronouns, extremely rare words (words that appear in .1% of all documents), and a short list of the most ubiquitous words, such as "record," "album," and "track."³ Note that topic models, like many other machine learning techniques, is a "bag-of-words" technique; as such, the clustering of words in topics is performed irrespective of the order in which those words appear in the text. Following standard practice, we limit our analysis to unigrams –single words, rather than short phrases.

Dependent Variables

For the statistical analysis, we first modeled the score that each album received using ordinary least squares (OLS) regression, or the general valuation process. The dependent variable in these models consists of the score from 0-10 that each reviewer assigned each album. Next, we modeled cultural consecration using logistic regression. Cultural consecration is operationalized as having earned a "best new" badge by *Pitchfork* reviews. Last, we modeled having earned a gold record from the Recording Industry Association of America (RIAA) also using logistic regression, where the dependent variable indicates whether or not a record sold 500k or more copies as identified by the RIAA.⁴

<Figure 2 about here>

<Table 1 about here>

Independent Variables

The independent variables in these analyses broadly consist of those connected to the topic structure of the *Pitchfork* corpus and those drawn from other properties of the review, such as sentiment or references to other artists. We identified topics for the entire corpus using a technique called structural topic modeling (stm), an increasingly common implementation of topic models (Roberts, Stewart and Tingley 2014; Roberts et al. 2014; see Bail 2016). We used an iterative process evaluating model fit via qualitative and quantitative validation techniques. This process, discussed at greater length in the Online

Appendix, resulted in a 25-topic solution. As we alluded to above, topics are weighted collections of words. Therefore, we labeled each topic according to the words with the highest probabilities for each topic. We also compared potential topic names to album reviews that indicate a high proportion of words to a specific topic. Next, we exploited the historical application of topic modeling to investigate what topics structure reviews and how this structure has changed over time. We focus on topics that gained, or lost, popularity in the first part of the results section. For the statistical models, we retain all 25 topics as independent variables without a reference category. As the results of the topic model consist of proportions – each review is a collection of topics that sums to 1 – we suppress the intercept in our regression models. This avoids linear dependence across the topics and allows for a clearer interpretation and easier comparison than the *ad hoc* selection of a reference category (see Haynes and Jacobs 1994; Helms and Jacobs 2002; Small and Winship 2007).⁵

Related to the topic structure, we operationalize the extent to which a review, and therefore an album, spans multiple categories topics or whether it is loading significantly on one topic through *niche width* (Hsu et al. 2009; Negro et al 2010), which captures how dispersed a particular review is relative to the topics. The niche width for a review is equal to 1 minus the sum of its squared topic proportions. Recall these proportions are the result of the topic models. A maximally dispersed review will have the widest niche or a value approaching 1, while a review focused on a single topic will have a value approaching 0.

We constructed additional variables from the review text. For example, we reintroduce the words within the complete review via a sentiment score for each review. We constructed this sentiment score, ranging from -1.147 to 2.728, in R's tm package (Feinerer 2015). One key question for a scene-based genre is the relationship between independent modes of production represented by small indie labels and production companies and more industrial modes characterized by major record labels (Lena 2012). In the case of *Pitchfork*, we are able to gain insight into this relationship through a binary variable accounting for whether the album was produced by a major record label, such as Sony or EMI, or not. To test ideas about whether association with previously consecrated artists – a type of historical association – correlates

with positive valuation, we identify those reviews that include mentions to the top-10 musicians of all time as ranked by *Rolling Stone* and count the number of artists who are mentioned. Valuation may also be affected by the number of previous reviews an artist has received on *Pitchfork.com*. Following the cumulative advantage process described above, bands that are consistently reviewed may be more likely to receive positive reviews. See Table 1 for descriptive statistics of the independent variables.

To capture the effects of dynamic valuation processes (for example via organizational maturation), we also include a measure for the “recency” or age of the review or when the review was published minus 1998, where the oldest reviews in our dataset have a value of 1 and the most recent reviews are 15. We evaluate recency in interaction with our key explanatory variables: seven genres that have substantially changed over time, niche width, major label status, identification with the *Rolling Stone* top-10, and sentiment polarity.

RESULTS

Table 2 provides the results of the 25-topic solution topic model. We can see the top-loading album review and the top-10 words in each topic by FREX score.⁶ To construct the labels summarizing each topic, we accounted for the top terms on multiple measures, including FREX, and cross-referenced top-loading reviews. Initial results indicate coherent and exclusive topics (see Appendix Figure 2) with some likely overlap, for example, across the hip-hop and rap topics and the topics that capture historical legacy artists (e.g. Topic 20: Compilations/Reissues and Topic 16: Antecedents).

<Table 2 about here>

Figures 2 and 3 provide additional pictures of the results of the topic models. Figure 2 presents the distributions of topics or genres over the entire corpus. We see that most topics load on 3-5% of the total corpus. Topic 9: Instrumental/Post-Rock is the most popular topic with a strong regional connection to *Pitchfork*'s own Chicago roots. This topic consists of albums that are described as heavily instrumental (but typically not jazz or exclusively electronic) and within or proximate to the post-rock genre. For example, in his review of Birdtree's *Orchards and Caravans* a top-loaded album on Topic 9, critic

Brandon Stousy describes the lead song in poetic terms: “Evoking the delicate dance of pine needles when they catch a breeze and disappear over a horizon line, ‘White Sundials Faced the Sun’ is a segment of subdued Loren Mazzacane-esque guitar noodle: Maintaining a slow-drip tempo, the carefully spaced guitar strums are held together with fragile vocal sighs.”⁷ Topic 15: Electronic/Drone, despite being relatively obscure within the contemporary music landscape, appears second most frequently within this dataset, followed by Topic 20: Compilations/Reissues, which includes retrospective albums and more recent compilations.

<Figures 2 and 3 about here>

The topic network (figure 3) depicts the relationships between the topics or genres based on correlation scores; that is, a relation (or line) is more likely to occur between two topics (or nodes) if they occur frequently in the same reviews. We set a modest threshold of the correlation score to provide a backbone image of the topic structure ($r=.01$). As a quick test, we can see, for example, that Topic 10: Rap1, Topic 12: Hip-Hop and Topic 24: Rap 2 – obviously identifying albums related to rap and hip-hop – appear closely together in the northeast corner of the graph, while more instrument-based topics – Topic 4: Techno/House, Topic 15: Electronic/Drone, Topic 22: Jazz – are proximate to one another in the northwest section of the graph. Note that this depiction is static and does not address changes to the topics’ structure over time.

Figure 4 presents a more dynamic image of topic change within the *Pitchfork* corpus. Structural topic models, like dynamic topic models (Blei and Lafferty 2006), offer an advantage over other topic models in so much as topics can co-vary by time (Roberts et al. 2014). Thus, we can plot topic dynamics. Here, we have plotted several topics around which we are structuring the following discussion of valuation. For example, Topic 8: Synth Pop, Topic 23: Metal, and Topic 24: Rap 2 experienced significant growth from 1999-2013. This provides some context of how *Pitchfork.com* has changed over time expanding its critical boundaries to include different types of music or different iterations of previously reviewed genres. On the other hand, Topic 3: Emo/Punk and Topic 18: Lofi, characterized by albums by Guided by Voices, have experienced relatively substantial declines. The articulation of and

interest in a particular genre is one way that critical organizations engage in the “running revision” of their critical stance or the active management of their aesthetic perspective (Becker 1982:137). We draw attention to this running revision by focusing on how *Pitchfork* distinguishes different aspects of rap/hip-hop music. Here, we can see that, while Topic 24: Rap 2 including top-loading albums by superstars Lil Wayne, Young Jeezy, and Cam’ron, has experienced dramatic growth, Topic 10: Rap 1, including top-loading albums by Beanie Sigel, Bun B, and T.I., has experienced more modest growth and may have peaked in the late 2000’s and Topic 12: Hip-Hop, capturing artists like MF DOOM, Madvillain, and Blueprint, has ebbed and flowed during this period.⁸

<Figure 4 about here>

This initial picture of the genre formation process indicates that *Pitchfork.com* experienced significant change over time, but that this change is not uniform. As it matured, *Pitchfork* incorporated some new genres and new aspects of old genres as seen by the general decline of Topic 12:Hip-Hop alongside the general increase of Topic 24:Rap 2, while changing focus away from core genres, like Topic 18:Lofi, with which it is often identified. Others, like Topic 15:Electronic, ebb and flow during this period. The effects of this revision process on valuation itself warrants specific consideration: What factors, including changes in the genre or topic structure, affect the dynamics of valuation?

The Dynamics of Valuation

Valuation helps critical organizations define their aesthetic or style. Table 3a provides a baseline picture of this process within the case of *Pitchfork.com* without considering the effect of time. First, the topic structure indicates that topics are weighed differently when scores are considered. In other words, *Pitchfork* reviewers prefer some genres of music more than others.⁹ For example, Topic 20: Compilations/Reissues is strongly and positively related to receiving a higher score. This is harmonious with the relational understanding of valuation mentioned above – as *Pitchfork* reviews written about previously released albums, such as reissued albums by the Beatles, Velvet Underground, or the critically-acclaimed Big Star, provide a foundation for the boundaries that *Pitchfork* is managing. Topic

16: Antecedents and Topic 22: Jazz are similarly retrospective recognizing bands influential to the Indie scene, like The Beach Boys and Mission of Burma, or classic jazz artists, like Ornette Coleman, with high scores.

<Table 3 about here>

Additionally, albums associated with Topic 15: Electronic/Drone and Topic 11: Lyrics/Songwriter receive high scores consistent with the artistic pretensions of this scene-based critical organization. Many of the albums in Topic 11: Lyrics/Songwriter, such as the Grammy award-winning *The Suburbs* by Arcade Fire, center on complex lyrical content.¹⁰ Reviews in Topic 15: Electronic/Drone also connect new and old musicians by placing emerging electronic artists, like Lullatone, alongside previously canonized musicians, such as William Basinski and Brian Eno as well as emphasizing the artistry of experimental electronic music. As Mark Richardson writes in his characteristic review of Ken Ikeda's *Merge*, "The sine wave is the cleanest, simplest tone possible – just a pitch, no harmonics, no timbre. It's the stuff of physics classes and tests records, but for most of my life, it was not the stuff of music. All that's changed."

Alternatively, albums loading on Topic 14: Novelty are least likely to receive a high score. This topic contains novelty, or otherwise comedic music albums, like albums by Har Mar Superstar, They Might Be Giants, and Moistboyz, alongside standup comedy albums, like records by Patton Oswalt and Bill Hicks.¹¹ Topic 3: Emo/Punk, with top-loading albums from artists like Audioslave and Jello Biafra, is also less likely to receive a higher score exhibiting, perhaps, Pitchfork's attempt to distinguish itself from prior articulations of alternative music, like punk.

Beyond the topic structure several other factors relate to the valuation process. Importantly, niche width – again, the extent to which a review loads in a single or across multiple topics – is negatively associated with receiving positive scores. Consistent with other analyses of the role of niches in valuation, such as Negro et al (2010), specialization has its advantages. Also, albums produced by major labels are less likely to receive positive scores in this baseline model. The negative effect of major label echoes the

other factors, like a fondness for the abstract electronic music identified in Topic 15, confirming the indie aesthetic of *Pitchfork*.

Table 3.b describes the effect of time on the valuation process. Focusing on the recency effects we can see clear evidence of the dynamic valuation process. For example, we can see that hip-hop and rap topics are valued differently over time. While none of these specific topic x recency interactions are statistically significant at the $p < .05$ level, they do possess different signs. Recency interactions with Topic 10: Rap1 and Topic 24: Rap 2 are both negative suggesting that these topics have become less likely to receive positive scores. On the other hand, Recency x Topic 12: Hip-hop is positive suggesting that hip-hop may have grown in value to *Pitchfork* reviewers from 1999-2013. Also of note, the recency interactions with Topic 3: Emo/Punk, and Topic 8: Synth Pop, Topic 18: Lofi are both statistically significant and positive suggesting that albums loading on these topics have also gained in value over time. The interaction with Topic 3 is particularly interesting as it receives a relatively low score in the static model. Related to threats of co-optation and efforts to resist (or not) industry-based challenges to scene-based genres, the interaction between recency and major label is also statistically significant and positive indicating that albums produced by major labels are more likely to receive positive reviews than in the past.

While strong evidence suggests the effect of genres/topics, niches, and major label status on the valuation process of *Pitchfork* reviewers and, importantly, that some of these factors have changed over time, the process of consecration, according to Bourdieu (1993), is likely to be quite different. Next, we turn to the factors related to earning a “best” album accolade by the editors of *Pitchfork.com*.

Consecration: Earning a “Best” Accolade

Contemporary cultural consecration helps establish the boundaries around what a critical organization regards as exemplifying the cultural genre they are trying to define. Table 4a presents the results of the

logistic regression predicting consecration for *Pitchfork* album reviews without considering dynamics. Turning first to the relationship between the review topics and earning a best album accolade, we can see heterogeneous topic effects. For example, while Topic 9: Instrumental/Postrock, including albums by artists like the Weird Weeds and Dirty Three, was one of the strongest positive predictors of having a high score in the general valuation process, in the consecration model Topic 9 is among the largest negative predictors. At the same time, Topic 14: Novelty is the least likely to earn a positive evaluation in both models. Also similar to the previous model, Topic 16: Antecedents are more likely to earn accolades, yet Topic 6: Americana – including albums by artists like the Magnolia Electric Co. or Willie Nelson and a relatively large, positive topic in the first model – is a relatively large negative factor in earning a best-album accolade.

<Table 4 about here>

A critical organization may use a different valuation process to determine whether an artist is good from the process used to determine whether one is great or the “best.” Yet, as see in table 4.b, the dynamics of this process appears somewhat similar to general valuation. For example, the major label x recency interaction is positive for consecration, suggesting that albums produced by major labels were more likely to receive accolades in recent years. Association with *Rolling Stones*’ top-10 artists of all times is more likely to result in an accolade for more recent albums. Yet, a few differences exist when considering the dynamic process. For example, the Recency x Topic 8: Synth interaction is negative and the Topic 10: Rap 1 interaction is positive for the consecration model suggesting that Synth Pop is becoming less likely to become consecrated – although its relative likelihood of becoming consecrated is higher – and Rap 1 is becoming more likely to become consecrated – although its relative likelihood of becoming consecrated is lower. Clearly, the general valuation and specific consecration process are related in the *Pitchfork* case; however, these processes contain differences that illustrate the boundary work in which this critical organization is engaged.

***Pitchfork* and Gold Records**

While disentangling the relationship between qualitative reviews and their valuation reveals important dimensions of boundary work, the relationship between this boundary work and outcomes beyond critical valuation deserve examination. In other words, how does this boundary work translate to popularity beyond *Pitchfork* itself? As an overview of this relationship, we turn to a logistic regression predicting gold record sales as identified by RIAA (n=14,495) presented in Table 5. 3,192 albums released between 1999-2013 earned gold records according to the RIAA. Of these albums, 239 were also reviewed by *Pitchfork.com*.

First, in model 5.a we observe the effect of the *Pitchfork* score on the likelihood of earning a gold record independent of other effects. Consistent with Lena's description of scene-based genres, *Pitchfork* has a complicated relationship with popularity outside of its scene. In this case, *Pitchfork* score is negatively associated with earning a gold record. In other words, albums reviewed positively by *Pitchfork* are less likely to sell 500,000 copies.

<Table 5 about here>

The full model, table 5, model b, offers a more complex picture of the relationship between *Pitchfork* and this indication of market success. Including additional factors changes the direction of the score effect and reduces its level of statistical significance. As one would expect, major label releases are more likely to earn this status. The number of *Rolling Stone* top-10 mentions is also positively related to gold record status. These two variables – historical association plus major label status – provide some indication of the positive relationship between industry-based characteristics of those albums and this kind of massive sales.

Topics also play a key role in the relationship between these album reviews and gold record status. Many of the topics positively related to *Pitchfork* valuation and consecration are negatively associated with gold record status. For example, all of the instrumental genres – Topic 9: Instrumental/Postrock, Topic:15 Electronic/Drone, and Topic 22: Jazz – have relatively large negative associations with gold record sales. These more obscure genres, perhaps, establish a high art upper-bound for *Pitchfork*. Topics that are positively associated with gold records include several of those with strong

connections to pop relevance beyond indie music, such as Topic 10: Rap 1 with top-loading album reviews of famous artists like T.I. and Ludacris or Topic 3: Emo/Punk with top-loading reviews of albums by widely popular bands like Audioslave and the Red Hot Chili Peppers.

Last, niche width is also a factor influencing the relationship between *Pitchfork* and gold record sales. Unlike the general valuation model (see table 3.b) niche width is positively related to earning a gold record. While critics may be more likely to privilege narrowly focused reviews, bands described as diverse by *Pitchfork* achieve greater market success by this measure. Time appears to increase this effect as the Recency x Niche Width interaction (table 5.c) positively affects gold record sales. Recency also interacts with the topic structure. Several topics are more likely to receive gold records for more recent periods, such as Topic 3: Emo and Topic 24: Rap 2, while others decrease in likelihood, such as Topic 12: Hip-Hop.

While *Pitchfork* does not entirely shirk popular bands, its emphasis on independent music results in a complicated relationship with popularity. Yet, the topic structure generally and the *Pitchfork* score specifically indicate a generally negative relationship between *Pitchfork* and this particular indication of extensive sales.

DISCUSSION AND CONCLUSION

Pitchfork.com carefully curates a perspective on music, in part by performing boundary work around its characterization of independent music. Through the process of valuation, including consecration, *Pitchfork* identifies for its audience the conditions of its particular taste, or aesthetic, and offers suggestions to the broader community of music consumers. Over an average of a thousand album reviews a year for fourteen years, *Pitchfork* offers a cumulative and detailed image of the *Pitchfork* sound. Moreover, to maintain relevance consistent with cultural criticism generally (see Becker 1982), *Pitchfork* engages in a critical effort specifically involving classification through boundary work related to genres. This analysis described how this classification informs the dynamic process of valuation. First, topics identifying genres within the *Pitchfork* review corpus relate to valuation as some are more likely to

receive high scores than others. Topics capturing historical connections to the indie genre, like Topic 16: Antecedents or Topic: 20: Compilations/Reissues, and instrumental topics, like Topic 15: Electronic/Drone, are more likely to receive high *Pitchfork* scores, while other topics, like Topic 14: Novelty and Topic 3: Emo/Punk, are less likely to receive high scores. Other factors play a role in the valuation process. For example, the positive relationship between the *Pitchfork* score and an artist's number of times reviewed is evidence of cumulative advantage effects. Consistent with prior research, niche width was negatively associated with having a positive score. Albums categorized more narrowly in a single topic were more likely to receive positive scores. This process changes somewhat as *Pitchfork* matures. More recent albums produced by major labels, for example, are more likely to receive higher scores than earlier albums produced by major labels.

Second, we analyze the relationship between consecration and *Pitchfork* topics. Contrary to a more parsimonious explanation – that consecration mirrors valuation generally – our analysis offers a more complicated picture. While some topics, such as Topic 16: Antecedents, affect these two processes similarly - Topic 16 is one of the most likely topics to receive high scores and be consecrated – several topics, like topic 22: Jazz, do not – Topic 22: Jazz does well in the valuation models, but is one of the least influential topics in the consecration models.

Last, we examine the relationship between *Pitchfork* and industry-scale popularity by modeling the effects of the topic structure on the likelihood of earning a gold record. Results illuminate the somewhat tortured relationship between independent music has with the mainstream: *Pitchfork*'s rating is negatively associated with gold record awards, although this relationship is mediated by the topic structure and other review factors.

This analysis contributes to literature underscoring that cultural boundaries do not evolve “naturally,” much less *ex nihilo*, but are produced, managed, and contested by interested parties in struggles over classification. These sorting mechanisms are useful in so much as they help cultural consumers navigate opaque markets. While digital technologies have expanded musical horizons at the production end – through cheaper recording gear – and at the distribution end - through the internet –

consumers may face greater uncertainty now than ever before as they have more options and greater need for information about what constitutes “good” music given their particular tastes. Following Karpik (2010), critical organizations, as a specific type of judgment device, increasingly provide a necessary sorting mechanism.

Pitchfork.com is a single case among many cases. Actors making decisions in opaque markets rely on critical organizations to help make decisions; therefore, many of these markets, particularly art markets, have affiliated critical organizations and/or individual critics attempting to advance specific aesthetics. Future work comparing these critical, aesthetic projects would lend confidence to more generalizable conclusions. Critical organizations, such as *Pitchfork*, are not the sole providers of information to consumers in opaque cultural markets. Online social networks and general opinion sites, such as Yelp or Amazon’s reviews, are also key tools that consumers use to navigate this moment of infoglut (see Goldberg, Hannan, and Kovács 2016). While critical organizations, and professional criticism generally, may mirror crowd-sourced reviews, significant differences between the two exist and warrant further examination. Future work should continue exploring judgment and valuation across these multiple forms (e.g. professional criticism and crowd-sourcing) and how these differing forms might relate to genre formation in music and other cultural arenas. Future work may specifically benefit from a focus on the dynamic aspects of valuation and categorization.

Last, we hope that more analyses will continue exploring how data driven techniques can merge with more traditional sociological tools. While new techniques will emerge through the computational exploration of unstructured digital data, many of the tools that have developed within the social sciences – both statistical and interpretive – will remain relevant for exploring these data as well. These data often possess rich contexts, such as the often artful reviews written by *Pitchfork* contributors, which should not be lost to automation. The opportunity presented by social science’s computational turn is one that challenges old tensions between quantitative and qualitative researchers as incorporating thousands of first-person accounts, stories, and opinions, seems increasingly important to advancing social scientific

knowledge. Our rich, dynamic social world deserves analytic methods that carefully keep pace with it. To date we have only touched upon the possibilities of these data-driven techniques.

END NOTES

¹ Despite important differences many of these critical processes take place in other markets as well. For example, while technology may be comparable in a literal sense (e.g. we can compare RAM across laptops), many consumers likely defer to their personal networks, crowd-sourcing sites, or expert reviews to make decisions.

² We distinguish organizations from individual criticism because organizations, including media organizations, may more explicitly engage in the kind of boundary work that we describe. Robert Parker's wine criticism, while perhaps embodied in an organization, may more likely be viewed as indicative of the taste of a single person. *Wine Spectator*, on the other hand, is seen as advancing an aesthetic formed across reviewers with different tastes which is a somewhat different, if related, task.

³ While preprocessing is the subject of some debate, recent work in the social sciences, such as Grimmer and Stewart (2013) and Bail (2016), either explicitly recommends or uses preprocessing techniques. These techniques can increase the performance of topic models on personal computers (or make topic modeling over large corpora on personal computers possible at all) and expedite labeling procedures. Alternative topic models with different specifications elicited substantively similar topics overall, but were somewhat less coherent. See the Online Appendix for more information.

⁴ We ran additional models to address concerns of right-censoring with the gold record dependent variable, but these models were not substantively different than the models included here.

⁵ Note that supplemental models were run with alternative reference categories and were comparable to those presented here and that the non-topic coefficients were the same.

⁶ FREX, implemented in the *stm* R package, "summarizes words with the harmonic mean of the probability of appearance under a topic and the exclusivity to that topic" (Roberts et al. 2014:1068). FREX is preferable to raw counts when trying to label topics as it identifies words more likely to be exclusive to each topic.

⁷ Loren Mazzacane, a characteristic reference in *Pitchfork*, is a guitarist well-known in critical circles, but perhaps not to the general public.

⁸ Characteristic of the difference between the Rap topics and the Hip-Hop topic, critic Taylor M. Clark draws attention to the artistry versus the commercial appeal of Q-Tip's *Amplified*, a top-loading album on Topic 12:Hip-Hop: "Even Q-Tip's not-so-relevant work on *Amplified* confirms his place in the highest echelon of lyricists – despite the nature of his rhymes, his timing is unequalled."

⁹ In a model with a suppressed intercept – again to avoid arbitrary reference categories – the coefficients of the topics are interpreted as genre-specific intercepts or as a scoring mechanism on the dependent variable. Consistent with our theory, these coefficients rank the variables on the dependent variable. In rare events, such as the accolades modeled in Table 4, the genre-specific intercept is negative because receiving an accolade is unlikely to occur.

¹⁰ Illustrating the lyrical focus of this genre, Ian Cohen describes the Grammy award-winning *The Suburbs* as follows: "The bulk of *The Suburbs* focuses on the quiet desperation borne of compounding the pain of wasting your time as an adult by romanticizing the wasted time of our youth."

¹¹ In his review of *You Can Feel Me* by "comedic" musical act Har Mar Superstar, *Pitchfork* founder Ryan Schrieber profanely decries the banality of the record identifying its general offensiveness, while also identifying *Pitchfork's* own elite pretensions. Asking how this record got made in this first place, Schrieber answers, "I'll tell you how: America. The country's no-brow simpletons lap this shit up like a last meal... And the label doesn't even try to disguise that the disc is pure merchandise, from its 29-minute runtime to its budget list price. They *know* no one actually wants to listen to this."

REFERENCES

- Allen, Michael Patrick and A. E. Lincoln. 2004. "Critical Discourse and the Cultural Consecration of American Films." *Social Forces* 82:871–94.
- Allen, Michael Patrick, and Nicholas L. Parsons. 2006. "The institutionalization of fame: achievement, recognition, and cultural consecration in baseball." *American Sociological Review* 71: 808-825.
- Aral, Sinan. 2011. "Identifying Social Influence: A Comment on Opinion Leadership and Social Contagion in New Product Diffusion." *Marketing Science* 30:217-223.
- Bail, Christopher A. 2014. "The Cultural Environment: Measuring Culture with Big Data." *Theory and Society* 1–18.
- .2016. "Cultural carrying capacity: Organ donation advocacy, discursive framing, and social media engagement." *Social Science & Medicine*.
- Becker, Howard S. 1982. *Art Worlds*. University of California Press.
- Blei, David M. and John D. Lafferty. 2006. "Dynamic Topic Models." Pp. 113–20 in *Proceedings of the 23rd international conference on Machine learning*.
- Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgement of Taste*. Harvard University Press.
- . 1993. *The field of cultural production: Essays on art and literature*. Columbia University Press.
- Cardew, Ben. 2014. "Pitchfork has an influential voice – but is it in tune with all its readers?" *The Guardian* May 4, 2014.
- Cattani, Gino, Ferriani, Simone and Paul D. Allison. "Insiders, Outsiders, and the Struggle for Consecration in Cultural Fields A Core-Periphery Perspective." *American Sociological Review* 79:258-281.
- Danto, Arthur. 1986. "The Appreciation and Interpretation of Works of Art." Pp. 23-46 in *The Philosophical Disenfranchisement of Art*. Columbia University Press.
- Dowd, Timothy J. 2003. "Structural Power and the Construction of Markets: The Case of Rhythm and Blues." *Comparative Social Research* 21:147-202.
- Espeland, Wendy Nelson and Michael Sauder. 2007. "Rankings and Reactivity: How Public Measures Recreate Social Worlds." *American Journal of Sociology* 113(1):1–40.
- Feinerer, Ingo. 2013. "Introduction to the tm Package Text Mining in R." Retrieved from <http://cran.r-project.org/web/packages/tm/vignettes/tm.pdf>
- Ferguson, Priscilla. 2004. *Accounting for Taste: The Triumph of French Cuisine*. University of Chicago Press.

- Godart, Frédéric C. and Ashley Mears. 2009. "How Do Cultural Producers Make Creative Decisions? Lessons from the Catwalk." *Social Forces* 88:671-92.
- Goldberg, Amir, Michael T. Hannan, and Balázs Kovács. 2016. "What Does It Mean to Span Cultural Boundaries? Variety and Atypicality in Cultural Consumption." *American Sociological Review* (early online).
- Grimmer, Justin, and Brandon M. Stewart. 2013. "Text as data: The promise and pitfalls of automatic content analysis methods for political texts." *Political Analysis* 21: 267-297.
- Griswold, Wendy. 1987. "A Methodological Framework for the Sociology of Culture." *Sociological methodology* 17(1):35.
- Hannan, Michael T. 2010. "Partiality of memberships in categories and audiences." *Annual Review of Sociology* 36: 159-181.
- Hicks, A. and V. Petrova. 2006. "Auteur Discourse and the Cultural Consecration of American Films." *Poetics* 34(3):180-203.
- Hsu, Greta, Michael T. Hannan, and Özgecan Koçak. 2009. "Multiple category memberships in markets: An integrative theory and two empirical tests." *American Sociological Review* 74: 150-169.
- Hutter, Michael and David Stark. 2015. "Pragmatist Perspectives on Valuation: An Introduction." Pp 1-12 in *Moments of Valuation*.
- Iitzkoff, Dave. 2006. "The Pitchfork Effect How a Tiny Web Outfit Became the Most Influential Tastemaker on the Music Scene." *WIRED* 14:184.
- Kremp, Pierre-Antoine. 2010. "Innovation and Selection: Symphony Orchestras and the Construction of the Musical Canon in the United States (1879-1959)." *Social Forces* 88:1051-82.
- Lamont, Michèle. 2012. "Toward a Comparative Sociology of Valuation and Evaluation." *Annual Review of Sociology* 38:201-221.
- Lena, Jennifer C. 2006. "Social Context and Musical Content of Rap Music, 1979-1995." *Social Forces* 73:697-718.
- . 2012. *Banding Together: How Communities Create Genres in Popular Music*. Princeton University Press.
- Lena, Jennifer C., and Richard A. Peterson. 2008. "Classification as culture: Types and trajectories of music genres." *American Sociological Review* 73: 697-718.
- Light, Ryan. 2014. "From words to networks and back: Digital text, computational social science, and the case of presidential inaugural addresses." *Social Currents* 1:111-129.
- Light, Ryan and jimi adams. 2016. "Knowledge in motion: the evolution of HIV/AIDS research." *Scientometrics* 107: 1227-1248.

- Light, Ryan, and Jeanine Cunningham. 2016. "Oracles of Peace: Topic Modeling, Cultural Opportunity, and the Nobel Peace Prize, 1902–2012." *Mobilization: An International Quarterly* 21: 43-64.
- McFarland, Daniel A., Daniel Ramage, Jason Chuang, Jeffrey Heer, Christopher D. Manning, and Daniel Jurafsky. 2013. "Differentiating language usage through topic models." *Poetics* 41: 607-625.
- Mohr, John W. and Petko Bogdanov. 2013. "Introduction—Topic Models: What They Are and Why They Matter." *Poetics* 41(6):545–69.
- Moore, Ryan. 2005. "Alternative to what? Subcultural capital and the commercialization of a music scene." *Deviant Behavior* 26: 229-252.
- Negro, Giacomo, Michael T. Hannan, and Hayagreeva Rao. 2010. "Categorical contrast and audience appeal: niche width and critical success in winemaking." *Industrial and Corporate Change* 19: 1397-1425.
- Oakes, Karen. 2009. *Slanted and Enchanted: The Evolution of Indie Culture*. Holt.
- Podolny, Joel M. 1994. "Market Uncertainty and the Social Character of Economic Exchange." *Administrative science quarterly* 39:458-483.
- Rao, Hayagreeva, Philippe Monin, and Rodolphe Durand. 2005. "Border crossing: Bricolage and the erosion of categorical boundaries in French gastronomy." *American Sociological Review* 70: 968-991.
- Roberts, Margaret E., Brandon M. Stewart, Dustin Tingley, Christopher Lucas, Jetson Leder - Luis, Shana Kushner Gadarian, Bethany Albertson, and David G. Rand. "Structural Topic Models for Open - Ended Survey Responses." *American Journal of Political Science* 58, no. 4 (2014): 1064-1082.
- Roberts, Margaret, Stewart, Brandon M. and Dustin Tingley. "stm: R Package for Structural Topic Models." *Journal of Statistical Software*.
- Rossmann, Gabriel and Oliver Schilke. 2014. "Close, But No Cigar The Bimodal Rewards to Prize-Seeking." *American Sociological Review* 79(1):86–108.
- Salganik, Matthew J., and Duncan J. Watts. 2008/ "Leading the herd astray: An experimental study of self-fulfilling prophecies in an artificial cultural market." *Social psychology quarterly* 71: 38-355.
- Sanneh, Kelefa. 2015. "Pop for Misfits: Can a Former Noise Musician Become a Star?" *The New Yorker* September 15, 2015.
- Sauder, Michael and Ryon Lancaster. 2006. "Do Rankings Matter? The Effects of US News & World Report Rankings on the Admissions Process of Law Schools." *Law & Society Review* 40(1):105–34.
- Schmutz, Vaughn. 2005. "Retrospective Cultural Consecration in Popular Music Rolling Stone's Greatest Albums of All Time." *American Behavioral Scientist* 48(11):1510–23.

- Schmutz, Vaughn. and Alison Faupel. 2010. "Gender and Cultural Consecration in Popular Music." *Social Forces* 89(2):685–707.
- Somaiya, Ravi. 2015. "Pitchfork Media Becomes Part of Conde Nast Stable." *The New York Times* October, 13 2015.
- Uzzi, Brian, Satyam Mukherjee, Michael Stringer, and Ben Jones. 2013. "Atypical combinations and scientific impact." *Science* 342:468-472.
- van de Rijt, Arnout, Kang, Soong Moon, Restiva, Michael, and Akshay Patil. 2014. "Field Experiments of Success-Breeds-Success Dynamics." *PNAS* 111:6934-6939.
- Van Venrooij, Alex and Vaughn Schmutz. 2010. "The Evaluation of Popular Music in the United States, Germany and the Netherlands: A Comparison of the Use of High Art and Popular Aesthetic Criteria." *Cultural sociology* 4(3):395–421.
- White, Harrison C. and Cynthia A. White. 1993. *Canvases and Careers: Institutional Change in the French Painting World*. University of Chicago Press.
- Wijnberg, Nachoem M. and Gerda Gemser. 2000. "Adding Value to Innovation: Impressionism and the Transformation of the Selection System in Visual Arts." *Organization Science* 11:323–29.

Author Biographies

Ryan Light is an associate professor at the University of Oregon studying social networks, culture, science, and inequality.

Colin Odden is a researcher at the Ohio Colleges of Medicine and PhD Candidate in the Department of Sociology at Ohio State University.

Table 1. Descriptive Statistics

A. Independent Variables	Mean	Std. Dev	N
Niche Width	0.732	0.154	14,495
Major Label	0.035	0.183	14,495
Times Reviewed	1.3	2.046	14,495
# of <i>RS</i> top-10s	0.057	0.263	14,495
Sentiment Polarity	0.473	0.285	14,495

B. Dependent Variables	Mean	Std. Dev.	N
Score	6.974	1.347	14,495
Consecration ("Best" Label)	0.053	0.225	12,865
Gold Records (Sales > 500,000)	0.016	0.127	14,495

Table 2: Topic Model Solution

#	Topic	Top 10 Words (by FREX score)	Top Loading Album Review
1	Psychfolk	banhart, rose, cale, edward, springsteen, oasi, drake, chasni, devendra, dee	Gary Higgins: Seconds
2	Reggae/World	dub, funk, regga, definit, dubstep, style, dancehal, genr, blake, funki	Ikonika: Contact, Love, Want, Have
3	Emo/Punk	emo, cab, plan, oberst, morrison, chris, goat, coldplay, darniell, gibbard	Audioslave: Out of Exile
4	Techno/House	techno, disco, remix, danc, dancefloor, electro, hous, mix, club, synth	Ellen Allien: Watergate 05
5	Classic Indie Rock	flower, moor, youth, radiohead, mercuri, rev, trail, rainbow, kim, silver	Mercury Rev: Snowflake Midnight
6	Americana	countri, molina, cash, harvey, wilco, ward, steel, nelson, sand, fahey	Charlie Louvin: Charlie Louvin
7	Garage	adam, stroke, garag, pavement, pixi, surf, garagerock, weezer, lewi, malkmus	The Strokes: Is This It
8	Synth Pop	love, romanc, girl, relationship, lover, emot, breakup, lust, marshal, night	Tracey Thorn: Love and Its Opposite
9	Instrumental/Postrock	instrument, guitar, percuss, textur, violin, drone, organ, postrock, strum, layer	Doveman: With My Left Hand
10	Rap 1	hood, jay, kelli, pimp, nas, albarn, jone, guest, prison, neptun	Bernie Siegel: The Solution
11	Lyrics/Songwriter	steven, bird, stewart, muse, snow, finn, piano, stori, tale, narrat	Joseph Arthur: Our Shows Will Remain
12	Hip-hop	hiphop, mcs, rhyme, dilla, flow, emce, doom, beasti, def, rap	MF DOOM: Mm...Food?
13	Postpunk/Euro Indie	smith, cure, fall, elliott, morrissey, anderson, anim, postpunk, bear, divis	The Cure: The Cure
14	Novelty	sex, merritt, movi, review, comedi, joke, beck, stereolab, gainsbourg, peach	Moistboyz: IV
15	Electronic/Drone	drone, piec, compos, loop, film, nois, score, electron, technolog, comput	Keith Fullerton Whitman: Generators
16	Antecedents	wilson, bowi, spoon, beatl, mccartney, costello, rocket, rem, miller, wire	The Beach Boys: Smiley Smile
17	Indiepop	pop, beach, saint, walker, summer, harmoni, indi, indiepop, etienn, hook	Liechtenstein: Survival Strategies in a ...
18	Lofi	pollard, barn, robert, eleph, lofi, hart, appl, matador, schneider, barlow	Guided By Voices: Let's Go Eat the Factory
19	Alternative/Experimental	cave, swan, seed, liar, war, pearl, gira, gang, horror, clinic	Flaming Lips: Embryonic
20	Compilations/Reissues	disc, compil, version, reissu, bside, bonus, box, demo, set, concert	The Beatles: Stereo Box
21	Folk/Roots	dylan, folk, wait, guthri, diamond, simon, fox, blue, mitchel, singersongwrit	John Langford: Gold Brick
22	Jazz	jazz, davi, parker, tortois, sax, mile, improvis, trumpet, ensembl, zorn	Ornette Coleman: This is Our Music
23	Metal	metal, hardcor, riff, thrash, sabbath, lightn, doom, roar, boredom, bolt	Hatred Surge: Human Overdose
24	Rap 2	mixtap, wayn, gucci, rapper, diplo, rap, ross, kany, mia, tape	Lil Reese: Don't Like
25	Canadian Indie	wolf, parad, lake, spencer, mercer, sunset, eye, dan, krug, palm	Blackout Beach: Blues Trip

Table 3. Predicting Success (Scores)

Variable	A. Score (OLS)		B. Score (OLS)	
	Coefficient	SE	Coefficient	SE
Topic Structure				
1. Psychfolk	6.382 ***	(.195)	6.676 ***	(.255)
2. Reggae/World	7.055 ***	(.133)	7.684 ***	(.222)
3. Emo/Punk	5.066 ***	(.137)	3.783 ***	(.306)
4. Techno/House	7.015 ***	(.104)	7.436 ***	(.2)
5. Classic Indie Rock	6.913 ***	(.222)	7.189 ***	(.274)
6. Americana	7.248 ***	(.129)	7.574 ***	(.209)
7. Garage	5.491 ***	(.131)	5.824 ***	(.209)
8. Synth Pop	7.163 ***	(.131)	6.904 ***	(.424)
9. Instrumental/Postrock	7.305 ***	(.102)	7.558 ***	(.191)
10. Rap I	6.189 ***	(.129)	7.276 ***	(.463)
11. Lyrics/Songwriter	7.471 ***	(.133)	7.804 ***	(.213)
12. Hip-hop	6.862 ***	(.106)	6.805 ***	(.262)
13. Postpunk/Euro Indie	6.521 ***	(.154)	7.026 ***	(.233)
14. Novelty	4.920 ***	(.14)	5.038 ***	(.214)
15. Electronic/Drone	7.571 ***	(.089)	7.981 ***	(.19)
16. Antecedents	7.778 ***	(.165)	8.060 ***	(.23)
17. Indiepop	6.618 ***	(.14)	6.993 ***	(.218)
18. Lofi	6.590 ***	(.138)	6.122 ***	(.341)
19. Alternative/Experimental	7.592 ***	(.151)	8.036 ***	(.231)
20. Compilations/Reissues	7.994 ***	(.124)	8.280 ***	(.208)
21. Folk/Roots	7.005 ***	(.147)	7.419 ***	(.226)
22. Jazz	7.806 ***	(.131)	7.908 ***	(.2)
23. Metal	7.552 ***	(.097)	8.156 ***	(.309)
24. Rap II	6.706 ***	(.105)	7.516 ***	(.662)
25. Canadian Indie	7.019 ***	(.206)	7.432 ***	(.269)
Niche Width	-0.321 ***	(.077)	-0.578 **	(.21)
Meta Data				
Major Label	-0.205 ***	(.059)	-0.625 ***	(.171)
Times Reviewed	-0.007	(.005)	-0.001	(.021)
# of <i>RS</i> top-10s	0.218 ***	(.042)	0.161	(.109)
Sentiment Polarity	0.543 ***	(.04)	1.089 ***	(.108)
Time Effects				
Recency x Topic 3: Emo			0.206 ***	(.035)
Recency x Topic 8: Synth			0.077 *	(.034)
Recency x Topic 10: Rap 1			-0.075 +	(.044)
Recency x Topic 12: Hip-Hop			0.036	(.027)
Recency x Topic 18: Lofi			0.084 **	(.032)
Recency x Topic 23: Metal			-0.012	(.026)
Recency x Topic 24: Rap 2			-0.015	(.05)
Recency x Niche			0.026	(.021)
Recency x Major Label			0.044 *	(.017)
Recency x Times Reviewed			0.000	(.002)
Recency x # of <i>RS</i> top-10s			0.006	(.012)
Recency x Sentiment Polarity			-0.056 ***	(.011)
Recency			-0.039 *	(.018)
F-Test: 15.411 ***				
N=14,495				

+p<.1; *p<.05; **p<.01; ***p<.001

Table 4. Predicting Consecration (Accolades)

Variable	A. Best(Logistic)		B. Best(Logistic)	
	Coefficient		Coefficient	SE
Topic Structure				
1. Psychfolk	-2.917 ***	(.667)	-3.003 **	(1.04)
2. Reggae/World	-3.455 ***	(.505)	-3.956 ****	(.986)
3. Emo/Punk	-3.310 ***	(.58)	-6.556 **	(2.051)
4. Techno/House	-3.538 ***	(.399)	-3.768 ***	(.908)
5. Classic Indie Rock	-2.191 ***	(.663)	-2.227 *	(1.032)
6. Americana	-5.449 ***	(.679)	-5.576 ****	(1.061)
7. Garage	-4.938 ***	(.639)	-5.035 ****	(1.026)
8. Synth Pop	-1.802 ***	(.393)	-0.705	(1.62)
9. Instrumental/Postrock	-5.035 ***	(.475)	-4.946 ***	(.925)
10. Rap I	-3.976 ***	(.559)	-5.899 *	(2.542)
11. Lyrics/Songwriter	-2.094 ***	(.404)	-2.243 *	(.896)
12. Hip-hop	-3.059 ***	(.4)	-3.438 **	(1.303)
13. Postpunk/Euro Indie	-2.134 ***	(.426)	-2.455 **	(.943)
14. Novelty	-6.160 ***	(.801)	-5.594 ****	(1.118)
15. Electronic/Drone	-2.870 ***	(.321)	-3.185 ****	(.889)
16. Antecedents	-1.965 ***	(.448)	-2.023 *	(.913)
17. Indiepop	-2.665 ***	(.479)	-2.861 **	(.942)
18. Lofi	-4.309 ***	(.598)	-9.965 **	(3.09)
19. Alternative/Experimental	-2.351 ***	(.469)	-2.702 **	(.971)
20. Compilations/Reissues	-2.686 ***	(.404)	-2.819 **	(.904)
21. Folk/Roots	-3.579 ***	(.551)	-3.808 ****	(.99)
22. Jazz	-4.099 ***	(.64)	-3.926 ****	(.995)
23. Metal	-3.878 ***	(.422)	-0.176	(1.508)
24. Rap II	-2.873 ***	(.337)	4.114 *	(1.837)
25. Canadian Indie	-2.213 ***	(.533)	-2.472 *	(.961)
Niche Width	0.256	(.288)	-1.412	(1.013)
Meta Data				
Major Label	0.224	(.182)	-2.005 *	(.902)
Times Reviewed	0.092 ***	(.016)	0.162 *	(.077)
# of RS top-10s	0.298 *	(.131)	-1.397 *	(.587)
Sentiment Polarity	0.233	(.149)	1.463 **	(.541)
Time Effects				
Recency x Topic 3: Emo			0.340 *	(.166)
Recency x Topic 8: Synth			-0.139	(.123)
Recency x Topic 10: Rap 1			0.139	(.217)
Recency x Topic 12: Hip-Hop			0.028	(.117)
Recency x Topic 18: Lofi			0.470 *	(.234)
Recency x Topic 23: Metal			-0.366 **	(.13)
Recency x Topic 24: Rap 2			-0.596 ****	(.146)
Recency x Niche			0.138	(.09)
Recency x Major Label			0.204 **	(.076)
Recency x Times Reviewed			-0.008	(.006)
Recency x # of RS top-10s			0.159 **	(.05)
Recency x Sentiment Polarity			-0.116 *	(.049)
Recency			0.035	(.076)
Log-likelihood	-2567		-2523	
N=12,865				

+p<.1; *p<.05; **p<.01; ***p<.001

Table 5. The Relationship between Indie Reviews and Gold Record Sales

Variable	A.		B.		C.	
	Coefficient	SE	Coefficient	SE	Coefficient	
Score	-0.156 ***	(.043)	0.069	(.045)	0.102	(.104)
Topic Structure						
1. Psychfolk			-3.813 ***	(.998)	1.334	(1.59)
2. Reggae/World			-7.754 ***	(1.478)	-1.387	(1.961)
3. Emo/Punk			-1.706 **	(.544)	0.137	(1.26)
4. Techno/House			-6.865 ***	(1.094)	-1.591	(1.677)
5. Classic Indie Rock			-3.357 **	(1.023)	1.092	(1.51)
6. Americana			-7.147 ***	(1.239)	-2.103	(1.735)
7. Garage			-5.619 ***	(.879)	-0.557	(1.493)
8. Synth Pop			-5.098 ***	(.893)	-6.315 *	(3.079)
9. Instrumental/Postrock			-10.154 ***	(1.431)	-5.191 **	(1.948)
10. Rap I			-1.674 ***	(.443)	6.037 ***	(1.509)
11. Lyrics/Songwriter			-4.657 ***	(.843)	0.500	(1.49)
12. Hip-hop			-5.207 ***	(.704)	1.472	(1.436)
13. Postpunk/Euro Indie			-8.261 ***	(1.869)	-2.354	(2.256)
14. Novelty			-4.003 ***	(.778)	0.409	(1.398)
15. Electronic/Drone			-12.107 ***	(2.17)	-6.829 **	(2.467)
16. Antecedents			-8.941 ***	(1.943)	-4.080	(2.284)
17. Indiepop			-6.729 ***	(1.137)	-1.237	(1.706)
18. Lofi			-9.228 ***	(2.114)	-7.421	(4.961)
19. Alternative/Experimental			-7.956 ***	(1.575)	-2.180	(2.025)
20. Compilations/Reissues			-6.861 ***	(.966)	-1.461	(1.595)
21. Folk/Roots			-4.442 ***	(.869)	1.203	(1.565)
22. Jazz			-11.489 ***	(2.999)	-9.078 *	(3.814)
23. Metal			-7.858 ***	(1.238)	1.376	(2.717)
24. Rap II			-3.457 ***	(.488)	0.334	(2.055)
25. Canadian Indie			-7.141 *	(2.783)	-1.143	(2.887)
Niche Width			1.635 **	(.504)	-3.466 **	(1.31)
Meta Data						
Major Label			1.737 ***	(.174)	2.532 ***	(.472)
Times Reviewed			0.044	(.033)	0.073	(.127)
# of RS top-10s			0.258	(.228)	-0.279	(.618)
Sentiment Polarity			-0.149	(.271)	-0.194	(.671)
Time Effects						
Recency x Score					-0.009	(.012)
Recency x Topic 3: Emo					0.364 **	(.138)
Recency x Topic 8: Synth					0.703 **	(.238)
Recency x Topic 10: Rap 1					-0.216	(.133)
Recency x Topic 12: Hip-Hop					-0.418 *	(.2)
Recency x Topic 18: Lofi					0.358	(.511)
Recency x Topic 23: Metal					-0.486	(.364)
Recency x Topic 24: Rap 2					0.352 *	(.166)
Recency x Niche					0.673 ***	(.147)
Recency x Major Label					-0.087	(.05)
Recency x Times Reviewed					0.006	(.011)
Recency x # of RS top-10s					0.060	(.065)
Recency x Sentiment Polarity					0.012	(.074)
Recency					-0.655 ***	(.157)
Log-likelihood	-1212		-940		-888	
N=14,495						

+p<.1;*p<.05;**p<.01;***p<.001

Figures

Figure 1: Number of Reviews by Year

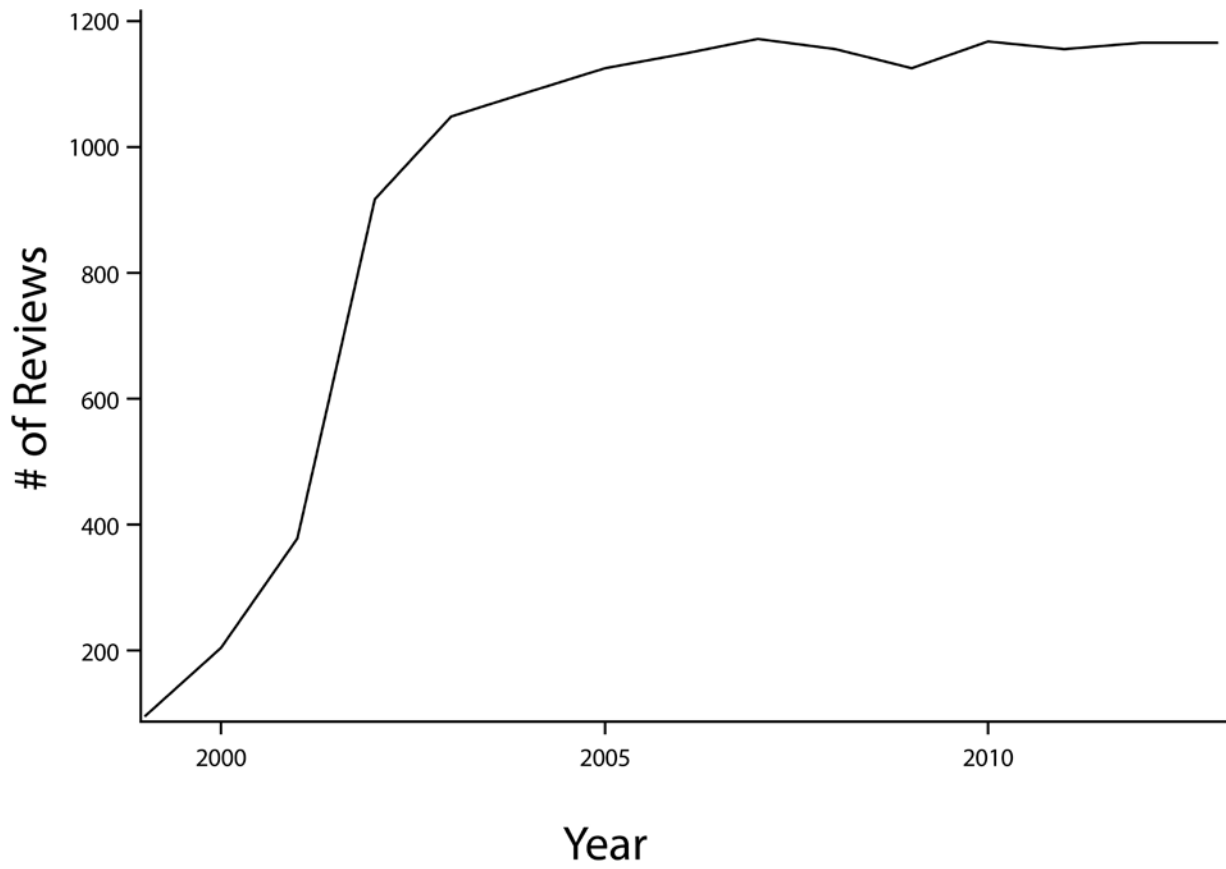


Figure 2: Expected Topic Proportions

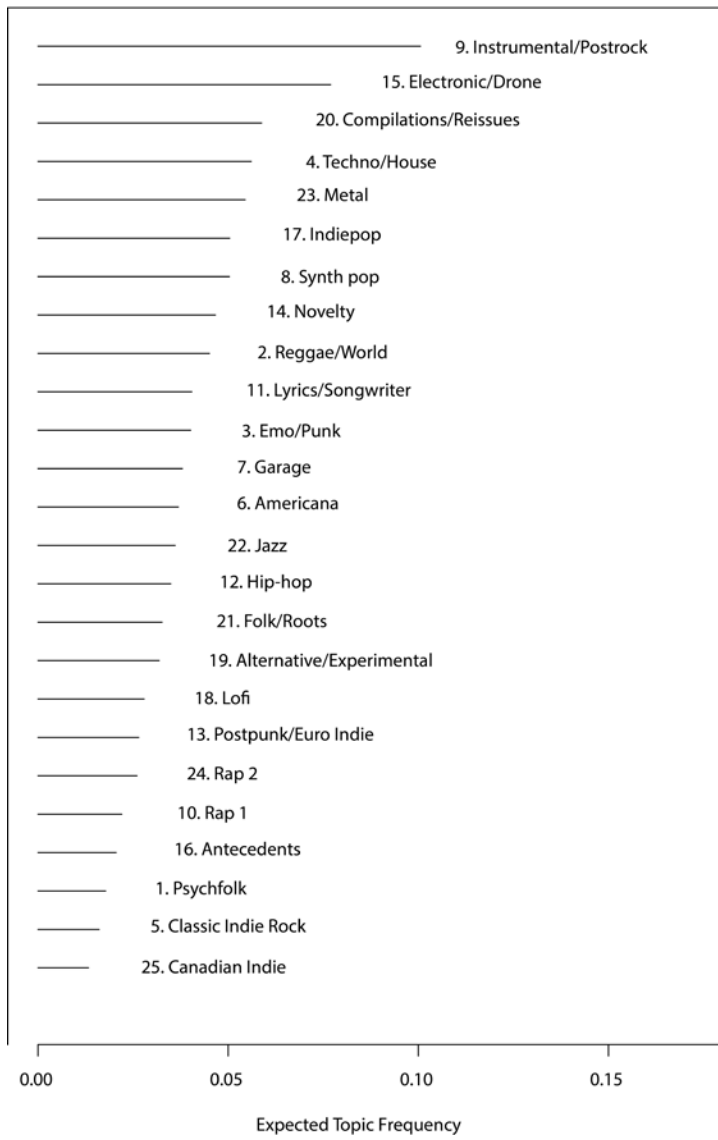
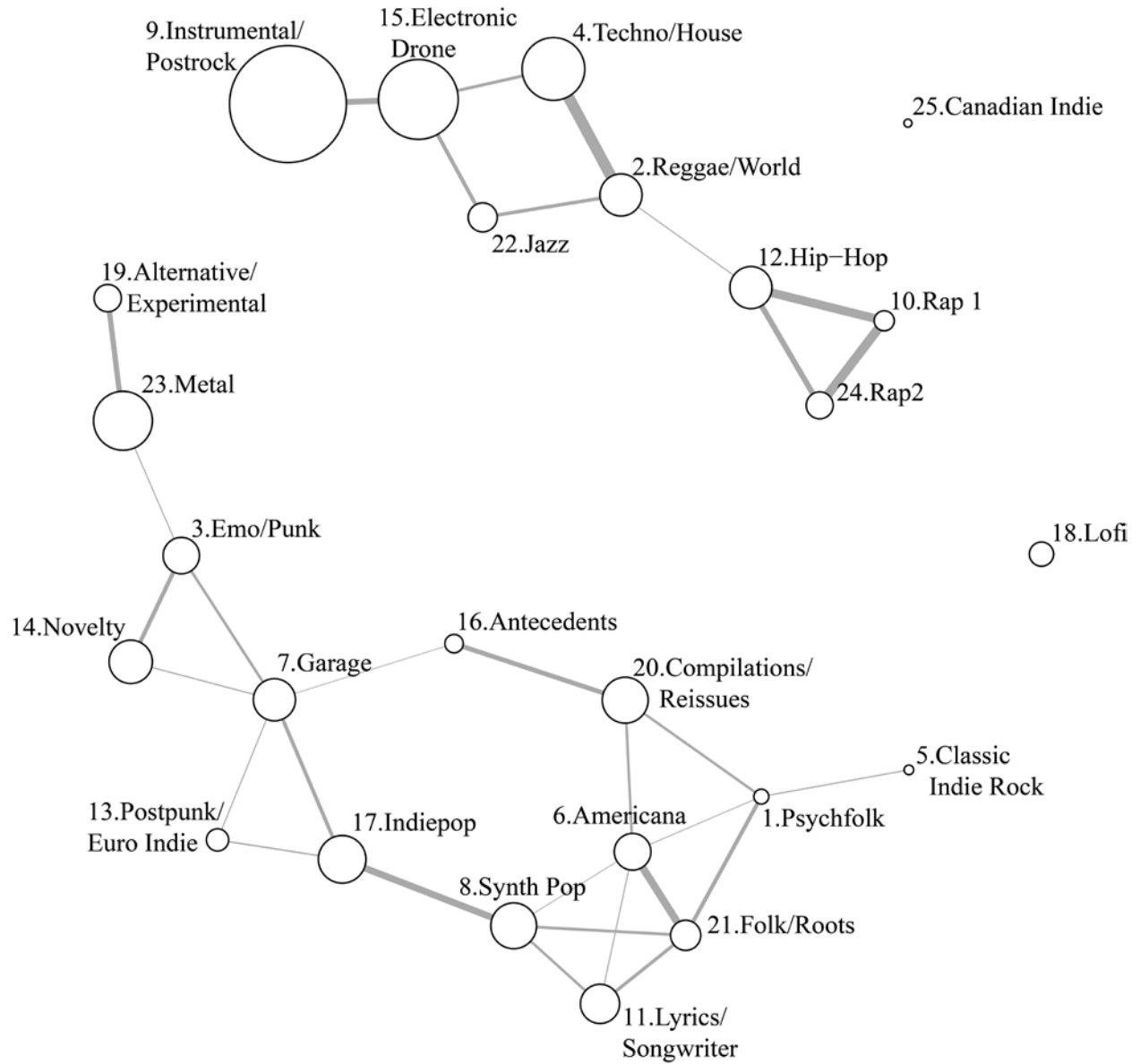


Figure 3: Topic Network



Notes: Node size is a factor of the number of times that each genre was the top-loading genre in a review. Edge width is a factor of the correlation between genres.

Figure 4: Topic Growth and Decline (with 95% confidence intervals)

