



## Management Science

Publication details, including instructions for authors and subscription information:  
<http://pubsonline.informs.org>

### Conflicting Social Codes and Organizations: Hygiene and Authenticity in Consumer Evaluations of Restaurants

David W. Lehman, Balázs Kovács, Glenn R. Carroll

To cite this article:

David W. Lehman, Balázs Kovács, Glenn R. Carroll (2014) Conflicting Social Codes and Organizations: Hygiene and Authenticity in Consumer Evaluations of Restaurants. *Management Science* 60(10):2602-2617. <http://dx.doi.org/10.1287/mnsc.2014.1903>

Full terms and conditions of use: <http://pubsonline.informs.org/page/terms-and-conditions>

This article may be used only for the purposes of research, teaching, and/or private study. Commercial use or systematic downloading (by robots or other automatic processes) is prohibited without explicit Publisher approval, unless otherwise noted. For more information, contact [permissions@informs.org](mailto:permissions@informs.org).

The Publisher does not warrant or guarantee the article's accuracy, completeness, merchantability, fitness for a particular purpose, or non-infringement. Descriptions of, or references to, products or publications, or inclusion of an advertisement in this article, neither constitutes nor implies a guarantee, endorsement, or support of claims made of that product, publication, or service.

Copyright © 2014, INFORMS

Please scroll down for article—it is on subsequent pages



INFORMS is the largest professional society in the world for professionals in the fields of operations research, management science, and analytics.

For more information on INFORMS, its publications, membership, or meetings visit <http://www.informs.org>

# Conflicting Social Codes and Organizations: Hygiene and Authenticity in Consumer Evaluations of Restaurants

David W. Lehman

University of Virginia, Charlottesville, Virginia 22904, [lehman@virginia.edu](mailto:lehman@virginia.edu)

Balázs Kovács

University of Lugano, 6900 Lugano, Switzerland, [kovacs@usi.ch](mailto:kovacs@usi.ch)

Glenn R. Carroll

Stanford University, Stanford, California 94305, [gcarroll@stanford.edu](mailto:gcarroll@stanford.edu)

Organization theory highlights the spread of norms of rationality in contemporary life. Yet rationality does not always spread without friction; individuals often act based on other beliefs and norms. We explore this problem in the context of restaurants and diners. We argue that consumers potentially apply either of two social codes when forming value judgments about restaurants: (1) an apparently rational science-based code of hygiene involving compliance with local health regulations or (2) a context-activated code of authenticity involving conformity to cultural norms. We propose that violations of the hygiene code recede in importance when the authenticity code is activated. This claim is supported by empirical analyses of 442,086 online consumer reviews and 52,740 governmental health inspections conducted from 2004 to 2011.

**Keywords:** organizations; institutions; social codes; authenticity; regulatory noncompliance; consumer value ratings; restaurants; health grades

**History:** Received March 1, 2013; accepted December 10, 2013, by Gérard P. Cachon, organizations. Published online in *Articles in Advance* June 4, 2014.

## 1. Introduction

In the early 1980s, health inspectors in Los Angeles began issuing citations to a number of Chinese restaurants for violating the California Health and Safety Code. The citations stemmed from the roast ducks that these establishments had hanging in their places of operation, usually behind glass enclosures in or near the cooking area (Seiler 1982). By hanging the ducks from their necks at room temperature for an extended time, the restaurant owners were violating rules about “time and temperature relationships” in food handling and cooking, specifically Article 2, Section 113996 of the Code, which states, “Except during preparation, cooking, cooling, transportation to or from a retail food facility for a period of less than 30 minutes... potentially hazardous food shall be maintained at or above 135°F, or at or below 41°F” (State of California 2014, p. 38). The intent of the rule is to prevent the growth of potentially dangerous bacteria that might cause food poisoning or worse. Such rules are based on scientific studies showing that most bacteria cannot survive in extremely high or low temperatures.

In many respects, this story is unremarkable. Charged with enforcing scientifically supported rules to protect

the public on health issues, government officials were simply doing their job in eliminating a health hazard. Indeed, modern publics insist—even demand—that officials enforce regulatory procedures to prevent diners from getting sick by eating food with dangerous bacteria or other contaminants. These officials did just that, in a competent and thorough manner once they identified the violations.

The story is consistent with a core insight of the institutional perspective of organizations, which holds that, in the contemporary world, justifications of social action relying on technical rationality carry greater force than other kinds of justifications, such as references to tradition or ritual (Meyer and Rowan 1977). Within this view, norms of rationality are seen as driving organizational action and structure in pervasive ways, even when technical rationality is unproven or misleading. The role of science is given particular emphasis among the justifications for this phenomenon:

We emphasize the extraordinary authority of modern scientific rationalization (not its limitations or virtue). It is a striking feature of contemporary society that science speaks with highly legitimate authority on the widest range of questions. (Drori and Meyer 2006, p. 40)

Moreover, institutional theorists believe that although science first exerted massive influence in the post–World War II period, its impact on culture, knowledge, and exchange continues with the march of globalization:

Scientization means the permeation of science-like logic and activities, with the underlying principles of universalism, scripts, and proaction, to everyday activities. In the age of globalization, cultural rationalization of this sort, rather than state-formation at the world level, has taken a dominant place in world affairs, in particular in regard to transnational rule-making. Scientization is, therefore, worldwide and a global process of rationalization. (Drori and Meyer 2006, p. 44)

However, the Los Angeles hanging ducks story did not end with the unequivocal triumph of science. The crackdown on hanging ducks ignited a backlash. Many Chinese restaurateurs and their patrons voiced a strongly negative reaction against the citations. Their reactions were rooted in claims that this method of cooking and storing ducks had been in existence for over 4,000 years—and during that period had fostered one of the world's largest populations. Many in the broader Chinese community took the actions of the regulators as an offensive attack on their cultural heritage and tradition (Berquist 1982, *Los Angeles Times* 1982). The mass media and some politicians also latched on to the story and portrayed the officials involved as bureaucrats who were enforcing inappropriate rules in harebrained ways (see Renteln 2004).

This second chapter of the hanging ducks story shows that norms of rationality—including the process of scientization—do not always spread in a smooth linear fashion, as much theory implies. Rather, it unfolds in fits and starts, with some places, domains, groups, and contexts moving to scientific rationalization very quickly, and others moving slowly or only after long delays. Some even appear not to move at all, or even to move backwards; witness the popularity of ideas about astrology in many developed countries in the late 20th century. Moreover, as the hanging ducks story shows, the rational norm may be in conflict with other norms that remain robust in some contexts (here, the Chinese ethnic community). These conflicting alternative norms mean that violations of purportedly rational norms may at times be acceptable or even rewarded, yet institutional theorists remain curiously silent on this matter.

In our view, organization theory would be enhanced when coupled with a fuller view of the transition process to rationalized norms, one focused on the micro aspects of acceptance and choice by individuals. This microleaning view would complement the widely studied macro process of organizational adoption and diffusion of rationalized structural features (e.g., Dobbin et al. 1993, Sutton et al. 1994, Hedström 1994, Dobbin and Kelly 2007). In an effort to better understand this

transition process, we study the restaurant context in greater depth. As the hanging ducks story illustrates, the restaurant domain sometimes presents situations in which science-based norms of rationality are called into question and not fully supported. (For examples concerning other kinds of restaurants, including very highly regarded fine dining establishments, see Barro 2012, Collins 2012.) Our hope is that by examining this specific context, we can learn about behavior that will facilitate the subsequent development of a more general theory of the diffusion of norms of rationality, especially as it concerns conflicts with other norms.

In conceptualizing the research problem, we use the notion of social codes. Social codes guide action and can appear in many forms (Hannan et al. 2007). Social codes typically possess some kind of (at least superficial) coherency and consistency and, during origination, often require some kind of rationale or evidence, although this may quickly vanish from public memory. A coherent set of social codes bears some conceptual resemblance to the notion of “institutional logic” (Thornton 2002). However, a logical system implies a greater degree of coherence, elaboration, and precision than what we think should be inferred from the phenomena we study here—observations of individual behavior in a specific context. Accordingly, we use the more primitive concept of social codes and try to base our interpretations of the codes we study on the actual social meanings articulated expressly by those individuals we study. Retaining this high degree of focus allows us to analyze and interpret the specific attributions made by individual consumers, a level of detail rare in institutional analysis<sup>1</sup> (Powell and Colyvas 2008).

The hanging ducks episode describes a context where the two main groups of actors involved acted on the basis of two different—and conflicting—social codes. On the one hand, the health officials who insisted that the ducks be kept elsewhere were invoking an *imperative code* that relied on a scientific rationale to protect the public from possible sickness brought on by the consumption of food riddled with dangerous bacteria. Per institutional theory, we regard such science-based codes of rationality as default codes in modern social life, codes that are taken for granted and invoked automatically for most people most of the time. On the other hand, the members of the Chinese community (and others who supported them) who demanded that ducks be allowed to hang in the open air were acting on an *interpretative code* that was embedded in their culture and culinary tradition; it offered clear direction

<sup>1</sup> An alternative approach attempting to define the broader institutional logics at play here would, perhaps, specify a general social code for restaurants. We do not believe that theory or evidence is sufficiently developed yet to undertake this ambitious project.

on how to prepare and preserve duck for a Chinese meal. In this case, the conflict highlights a dilemma: adhering to one code guarantees the violation of the other. Individuals facing such dilemmas are forced to apply selectively one code or the other to make value judgments (D'Aunno et al. 1991, Greenwood et al. 2010).

Conflicting social codes are not unusual in modern life, with its diverse and complex groups and entities (Thornton 2002, Greenwood et al. 2010). A core sociological question thus concerns how such conflicts are resolved and under what circumstances individuals come to invoke one code instead of another. To pursue this question, we focus here on cases in which consumers make judgments about restaurants on the basis of two potentially conflicting codes—the rational science-based imperative code of hygiene involving compliance with health regulations (Jin and Leslie 2003, 2009) and the context-activated interpretive code of authenticity involving conformity to cultural norms (Kovács et al. 2013). We propose that consumers resolve conflicting codes by selectively applying one code and sidestepping the other. More specifically, we posit that consumers are more likely to forgive or overlook violations of the hygiene code when a restaurant is regarded as authentic. However, we expect consumers to punish more severely hygiene violations when a restaurant is not regarded as authentic.

We examine consumer responses to these social codes in the food and dining context. We analyzed the complete set of ratings that patrons in Los Angeles County voluntarily assigned to restaurants in online reviews. We examined how these ratings were shaped, first by information about organizational compliance with health regulations, as indicated by inspections conducted by the Los Angeles Department of Public Health, and second by information about organizational authenticity, as indicated by public discourse concerning the restaurant. We also explored the underlying mechanisms via content analysis of hygiene- and authenticity-related words appearing in each review. The analysis combined archival data about 442,086 consumer reviews with information on 52,740 health inspections of 9,734 restaurants from 2004 to 2011.

## 2. Theory and Hypotheses

### 2.1. Consumer Value Ratings

Organizational success is often driven by consumer perceptions of the value offered by a firm's products or services. Defined as the individual evaluator's "overall assessment of the utility of a product [or brand, service, or experience] based on perceptions of what is received and what is given" (Zeithaml 1988, p. 14), consumer perceived value is of critical importance in understanding many markets because consumers are

largely "value driven" and make choices based on perceptions of value (Sweeney and Soutar 2001, p. 204). Such perceptions of value not only shape consumer choices but also consumer value ratings, which are frequently proclaimed in online forums such as review websites. These ratings often affect other consumers' choices and, ultimately, the reputation, success, and survival of the producer (Luca 2011).

Consumer value ratings are shaped by the prevailing social codes. According to Hannan et al. (2007, p. 21), "A social code can be understood (1) as a set of interpretative signals, as in the 'genetic code,' and (2) as a set of rules of conduct, as in the 'penal code.'" In other words, social codes imply both cognitive recognition and imperative standing. Each form plays a key role in shaping consumer value ratings. So we begin by first positing basic assumptions about the main effects that we expect each of two operative social codes to exert in the food and dining context. We do not specify them as explicit hypotheses given that prior research has demonstrated these effects to a large extent. (We do, however, report falsifiable tests of these basic assumptions in the empirical study.)

### 2.2. Hygiene as an Imperative Code

Social codes can, in many instances, be understood as imperatives embedded in the legal environments in which organizations operate. The legal environment regulates organizational conduct by prescribing appropriate behaviors and proscribing unacceptable ones (Suchman 1995). These behaviors are outlined in the form of rules governed by penal and other codes, which act "presumably on society's behalf [to take] the initiative directly to modify organizational behavior" (Edelman and Suchman 1997, p. 483). At any point in time, the legal system can be viewed as more or less reflecting cultural values; that is, values shared by members of society often get codified into formal laws, rules, and regulations that act to constrain organizational actions. In this way, legal constraints are generally forward looking in that they reflect past learning but exist as an effort to shape future organizational actions.

Consumers usually appear to value organizational compliance with legal regulations. Even though organizational compliance with such rules is monitored and enforced by various government agencies, many legal scholars view specific legal sanctions as less important than the reputational or market-based impact of noncompliance. As Edelman (2004, p. 235) explains in discussing the regulatory environment,

The sanctions associated with noncompliance are often insufficient to deter illegal behavior because the risk of legal judgments or administrative fines will often seem minimal in comparison to market-related risks such as product failure. In other words, legal sanctions are usually too small and too slow to affect rational organizational planning.



Noncompliance is thus often more about consumer perception, especially when information about noncompliance is available to consumers and other members of the public.

Organizational compliance with regulations should enhance consumer value ratings for several possible reasons. First, noncompliance may be interpreted as a rejection of the values or goals behind the law, which may be regarded generally as in the interests of the public and consumers. Second, noncompliance may suggest a risk to the consumer, society at large, or even the environment as a result of harmful products or unsafe services, even if the details of this risk are not obvious. Third, noncompliance may be perceived as reflecting a larger problem of managerial incompetence that could also apply to other aspects of the exchange more important to the consumer. For these reasons, consumers can normally be expected to value more those organizations that demonstrate regulatory compliance.

An imperative code of regulatory compliance clearly operates in the restaurant context. In advanced consumer economies, restaurant practices are typically governed by a host of health regulations (e.g., State of California 2014). These regulations are promulgated as safeguards derived mainly from scientific theories of microorganisms such as germs and bacteria, viewed as dangerous contaminants to be avoided and destroyed; similar theories came to dominate the practice of medicine in the 19th century (Brown 1979, Starr 1982). The authority accorded science on these matters is usually not disputed and is regarded as unassailable fact, as institutional theorists recognize (Meyer and Rowan 1977, Drori and Meyer 2006). Restaurant consumers thus regard compliance as important and in their best interests (Jin and Leslie 2009), and they do not usually question its value or its implementation, even if they are not themselves familiar with the scientific rationale underlying the regulations (see Galperin and Sorenson 2012).

Some local governments in the United States and elsewhere now require restaurant owners to post health grades in visible places in the establishment, making compliance and violation salient to consumers (Jin and Leslie 2003). Patrons are thus often aware of the extent to which a restaurant complies with health regulations and can act accordingly, letting the regulatory code exert its impact through reputational effects in the market. Given that consumers possess ready access to information about restaurant compliance with the hygiene code, we suggest that the public implicitly expects automatic adoption and implementation by food purveyors and restaurants (Jin and Leslie 2009). If so, then we would expect empirical patterns similar to those reported by Jin and Leslie (2003), namely,

a direct effect of hygiene code compliance on the value a consumer assigns to a restaurant.<sup>2</sup>

### 2.3. Authenticity as an Interpretative Code

Social codes can be understood in a second way as cognitive schemata embedded in the cultural environment. Various cognitive schemata may play a role; one that has emerged in recent research as especially important in advanced consumer economies in general, and in the domain of restaurants in particular, is the notion of authenticity (Peterson 2005, Hosking 2006). Authenticity often refers to the socially constructed attribution of whether or not an entity is “real” in that it matches the cultural expectations of the particular type (Dutton 2003). In other words, an entity is “an authentic X (say, *Thai restaurant*) if it is an instance of member of the class of Xs (*Thai restaurants*); [thus] an interest in authenticity reflects a concern with correct classification” (Davies 2001, p. 203, italics added). In a different but common usage, authenticity conveys moral meaning about the values and choices embedded in an object. For instance, Baron (2004, p. 14) claims that “the most authentic identities... invoke a non-economic logic of action, inasmuch as they require that actors do certain things that cut against their narrow self-interest.”

Whereas regulatory compliance refers to an objective interpretation of organizational actions, authenticity refers to a subjective interpretation of organizational identity, regardless of usage. Except in cases of authorship or provenance, definitive evaluations about the authenticity of an entity are virtually impossible because there is no objective answer, and interpretations vary across audiences and change over time (Grazian 2005, Phillips 2013). These interpretations of authenticity are embedded within the cultural language of a society; that is, whether or not an organization is generally regarded as authentic is reflected in the rhetoric used by members of society to describe the organization. In this way, the notion of authenticity is generally backward looking in that it is concerned with an idealized version of what is “real.”

Many contemporary consumers value authenticity highly (Fine 2004, Lindholm 2008). As Potter (2010, jacket text) sees it, “the demand for authenticity... is one of the most powerful movements in contemporary life, influencing our moral outlook, political views and consumer behavior.” The underlying assumption of this and many other similar proclamations is that consumers place value in the authentic. Many observers claim that the authentic carries powerful appeal in a host of domains, particularly consumer goods such as art, music, beer and wine, coffee and tea, furniture, cosmetics, dance, tourism, and clothing.

<sup>2</sup> More specifically, Jin and Leslie (2003) report that health grades had an impact on consumer demand, as measured by restaurant revenues.

This is certainly true in the restaurant context. Consumers regularly reference authenticity when describing dining establishments, using words such as “authentic,” “genuine,” “real,” “original,” and the like in the rhetoric used to label and describe eateries. Moreover, restaurants labeled as authentic tend to receive higher value ratings from their diners (Kovács et al. 2013). Similar language has become increasingly prevalent among food critics (Carroll and Wheaton 2009) and others engaged in public discourse (Jones et al. 2005). Moreover, restaurant owners reflexively recognize the value that may be accorded to their establishments if they are perceived as authentic restaurateurs, and they sometimes attempt to project an image of authenticity by conveying ties to meaningful places (Beverland 2005) or by cultivating myths surrounding their products (Guy 2002).

Authenticity in the restaurant context has become increasingly salient in recent years, likely due in part to the prevalence of the Internet and social media. Consumers can now quickly gather much more information about restaurants in attempts to interpret potentially relevant cues and to make attributions about authenticity. In addition, such attributions get conveyed with speed to other people through the use of online restaurant reviews and the like. Accordingly, we expect that consumer attributions of authenticity (indicating perceived compliance with the authenticity code) should enhance the value accorded a restaurant, findings uncovered previously by Kovács et al. (2013).

#### 2.4. Conflicting Social Codes

As the hanging duck account highlights, however, these two social codes may not necessarily be aligned. A restaurant might pass its health inspection with flying colors but be regarded by consumers as a poor representation of its purported type of cuisine. Similarly, a restaurant might fail its health inspection but be regarded by consumers as truly authentic. How do consumers resolve such conflicts when forming a value judgment of a restaurant? We posit that consumers resolve such conflicts by selectively applying one code and overlooking the other. How exactly does this process work?

We start with the view that the hygiene code is the default for most consumers in contemporary society. The “default standing [of a code] means that agents do not fully inspect or scrutinize each alleged member but instead fill in the feature values that fit their schemata, unless they see evidence to the contrary” (Hannan et al. 2007, p. 78). Defaults arise when there is an absence of complete information or when information is difficult or costly to access. Observers employ a minimal test and from it induce whether or not the alleged member entity is indeed a bona fide member of the form, assuming that the unknown and, thus, untested features of the member also conform to the schemata.

We believe the hygiene code is a default in the restaurant domain for two primary reasons. First, consumers have limited information about the hygiene practices of any given restaurant. They are simply unable to witness whether or not employees wash their hands, whether or not meat is cooked at the appropriate temperatures, whether or not insects or rodents occupy the food storage closets, and so on. Second, consumers rely on a convenient minimal test of the hygiene code in modern economies where local health departments are ubiquitous. More specifically, diners assume that if a restaurant is open and functioning, then its food is surely safe, taking for granted that an operating restaurant has been inspected and approved by health authorities. Moreover, consumers assume that such inspections are grounded in science and carry unquestioned authority.

We expect that when the default hygiene code is satisfied via this minimal test, consumers will be less concerned with the issue of hygiene altogether. Although consumers value compliance with the hygiene code, its default status implies automatic processing without deliberate or active cognition (Hannan et al. 2007). When in such an automatic processing mode, consumers will not be prompted to closely examine the establishment (Schneider and Shiffrin 1977, Fiske and Taylor 1991). Thus, if a restaurant has satisfied the hygiene code and is regarded as authentic, we expect that consumers will assign additional value for satisfaction of the authenticity code; however, this value will be limited because consumers will not closely examine such cues because of the automatic processing mode.

We expect that when a restaurant violates the hygiene code, however, consumers will seek more information. Violations of a default code serve as triggers for observers to expand the minimal test code (Hannan et al. 2007) and engage in a more active or controlled process (Schneider and Shiffrin 1977, Fiske and Taylor 1991). In other words, consumers will be prompted to seek more information when a restaurant passes the minimal test of the hygiene code (i.e., the local health authorities permit it to open its doors and serve food to the public) but also conveys contradictory evidence (e.g., a low health grade posted in the establishment by the local health department, if such information is available, or blatant visible evidence such as rotting food, unclean utensils, or rodent droppings on the floor). In such cases, consumers may undertake a closer examination of the establishment in an effort to make their own evaluation (e.g., Loftus et al. 1989, D’Andrade 1995, Petty and Wegener 1999). Such examinations may entail a more careful consideration of other aspects of the restaurant as well. For the restaurant with no (or very limited) authenticity appeal, we expect this process to end with the diner’s personal assessment of the hygiene of the place. For restaurants regarded as

authentic, perhaps detected by cues in the restaurant, we expect the process to unfold differently. Specifically, we posit that consumers in a restaurant regarded as authentic will not react as harshly in response to a violation of the hygiene code. Why?

First, when consumers actively tend to authenticity, they will likely be less focused on hygiene simply because attention is limited. Attention-based perspectives of judgment formation suggest that individuals find it taxing to consider multiple cues at once (Zuckerman 1999); they also tend to manage their limited attention by focusing on only the most salient cues (March and Simon 1958). Whereas the same set of food safety laws apply uniformly to all restaurants within a given jurisdiction, interpretations of a restaurant's authenticity will usually consider factors unique to the restaurant such as its particular cuisine type, its staff's cooking techniques, its food sourcing methods, certain elements of its history, and the like. Because of these specific factors, the authenticity code should be more salient once activated. Therefore, the hygiene code will carry less force if the context activates the authenticity code.

Second, consumers typically know that some aspects of authentic products, services, and other entities sometimes do not, or cannot, comply with modern regulations. Authentic entities often derive from alternative cultures and eras, where beliefs and values sometimes differ from those of advanced consumer economies and science-oriented societies. The Chinese way of preparing and storing duck is but one example; it is a culturally embedded practice that just happens to be incompatible with a modern law. Indeed, disjunctures of this kind between specific codes and generalized modern ones often underlie the appeal of authentic items for many consumers (Peterson 1997, Yi 2000, Grazian 2005). Consider the appeal of local craft brewed beer or barbecued meat in the contemporary United States.<sup>3</sup>

For both reasons, we propose that if a restaurant regarded as authentic violates the hygiene code, then many consumers will not react as negatively as they would in cases where authenticity is not in play. Many actual restaurant reviews encapsulate the essence of our position nicely. As one patron of Los Chorros Restaurant, which is located in Los Angeles County, comments:

Best pupusas outside of El Salvador.[...] If you don't like greasy food in unsanitary places stay away from here; the curtido is served out of a large garbage can (I'm serious)... Simple, authentic, Salvy food. Fills the

heart (and stomach) of a Salvy girl like me each and every single time.<sup>4</sup>

Or, as one patron of Best Fish Taco in Ensenada, which is located in Los Angeles, more succinctly writes:

The place itself isn't much to look at. It's a little messy, but the fast food prices with an authentic sit-down-restaurant-south-of-the-border flavor more than make up for it.<sup>5</sup>

In other words, we propose that the science-based hygiene code will lose force if the context provides salient cues about authenticity. For restaurants regarded as authentic, the salience of the authenticity code will overshadow the violation of the hygiene code and will result in an enhanced valuation. For restaurants regarded as inauthentic, however, the salience of the authenticity code will accentuate the violation of the hygiene code and will result in a more severe devaluation. Taking the arguments above together, we put forth the following hypothesis.

**HYPOTHESIS.** *Authenticity attenuates the effects of health grades on consumer value ratings at higher levels of authenticity and strengthens the effects at lower levels of authenticity.*

### 3. Research Design

We examined the extent to which consumers place value on each of the two social codes operative in the restaurant context—hygiene and authenticity—through an analysis of online consumer reviews of restaurants. We analyzed consumer reviews of restaurants in Los Angeles County posted on Yelp.com and also used data on health grades resulting from inspections conducted by the Los Angeles County Department of Public Health.

#### 3.1. Study Context and Data

We use health inspection data from the Los Angeles County Department of Public Health (LADPH). The LADPH is responsible for monitoring and enforcing health regulations throughout the County of Los Angeles. Each restaurant in the county is governed by a set of rules pertaining to a wide range of activities such as food sourcing, cooking temperatures, storage, employee health practices, and so forth. A restaurant's compliance with these rules is assessed one to three

<sup>3</sup> Note that we are not claiming that a lack of hygiene by itself typically connotes authenticity but, rather, that authenticity-seeking consumers may be particularly aware that the hygiene and authenticity codes are sometimes at odds.

<sup>4</sup> Marina R., comment on Los Chorros Restaurant, Yelp, September 4, 2010, <http://www.yelp.com/biz/los-chorros-restaurant-inglewood>.

<sup>5</sup> Kalia C., comment on Best Fish Taco in Ensenada, Yelp, August 17, 2012, <http://www.yelp.com/biz/best-fish-taco-in-ensenada-los-angeles>.



times per year during routine health inspections.<sup>6</sup> A health inspector uses a variety of methods to assess compliance, including on-site observations, reviews of records from the restaurant managers, and interviews with the employees. Each rule violation results in a penalty ranging from zero to six points depending on the health risks associated with the particular violation. These point deductions are used to calculate a score ranging from 0 to 100, which is then translated into a letter-based health grade (A = 90–100 points, B = 80–89 points, C = 70–79 points). Restaurants receiving a score below 70 points are not given a letter grade but are instead simply assigned the numerical score (referred to hereafter as “grade F”); food facilities that receive a grade F twice within a 12-month period are subject to closure and the filing of a court case.

Restaurant compliance with health regulations came to the forefront of public attention in 1998 when the County of Los Angeles implemented a law requiring restaurants to post their health grades in their facilities for consumers to see. This public posting law was created in response to several media reports that highlighted unhygienic food-handling practices at local restaurants. The grading system and public posting law are widely considered successful in improving restaurant hygiene; subsequent studies have shown that inspection scores have increased, consumers have become more sensitive to the hygiene quality of restaurants, and the number of hospitalizations due to foodborne illnesses has decreased (Jin and Leslie 2003, 2009; Simon et al. 2005). These outcomes have garnered attention from officials from other cities around the world, and some have implemented similar systems.

We use consumer review data from Yelp.com. Yelp is “an online urban city guide that helps people find cool places to eat, shop, drink, relax and play, based on the informed opinions of a vibrant and active community of locals in the know.”<sup>7</sup> The website was founded in 2004 in San Francisco and quickly grew to include sites for reviews of restaurants in other cities along the West Coast and around the globe. Not only does the website aid consumers in discovering desirable places to eat, it also provides them an opportunity to register and describe their opinions of specific places. Yelp generates its reviews through a volunteer process in which any patron can create a profile and go online to write reviews; anyone can read the reviews without creating a profile. Each review consists of the reviewer’s

identification tag, the date of the review, a star rating of the restaurant ranging from one to five, and a commentary review with text of unlimited length. Among others, Luca (2011) uses data from Yelp reviews to examine consumer responses to organizations in the restaurant domain (see also Kovács and Hannan 2010).<sup>8</sup>

Online consumer review websites such as Yelp have provided a forum for public discourse about authenticity to grow quickly in recent years. The concept of authenticity is embedded within cultural language, and attributions of authenticity are made when a person uses words that invoke the concept. Most online consumer websites allow consumers to input free text, and reviews often contain authenticity-laden language. Yelp provides comprehensive coverage of restaurants and includes a wide range of customer reviews. Alternatives, such as Zagat, OpenTable, and TripAdvisor, not only cover fewer restaurants but also publish reviews from a narrower range of reviewers, often focusing on professional critics.

Each establishment in Los Angeles County that met the following four criteria was included in the sample: (1) it was listed in the “restaurant” category on Yelp, (2) its Yelp restaurant profile included at least one customer review, (3) it was still operating at the time of the data collection in October 2011, and (4) its Yelp restaurant profile could be unambiguously matched with a health inspection record from the LADPH.<sup>9</sup> A total of 9,734 restaurants were sampled.

The restaurants in the sample received 442,086 consumer reviews on Yelp and were inspected 52,740 times by the LADPH between 2004 and 2011 (see Table 1).<sup>10</sup> The reviews came from 91,528 unique reviewers, and the average number of reviews per reviewer

<sup>8</sup> The reader might worry that some of the reviews on Yelp are “fake.” More specifically, some reviews might be written by the restaurant staff or by people hired to do so on their behalf. This is especially likely to occur among restaurants performing poorly on Yelp (Luca 2013). However, the website has implemented from early on in its history a “fake review filter” that identifies abnormal reviewing patterns and removes the associated reviews. Independent research demonstrates that this filter is highly accurate (Mukherjee et al. 2013). Moreover, there is no clear reason to believe that those unfiltered fake reviews are systematically related to the hygiene grade or authenticity of the restaurant.

<sup>9</sup> Although all establishments appearing in Yelp should theoretically have a corresponding record with the LADPH, the matching is sometimes less than clear. For example, Yelp tends to keep one record for hotels, which encompasses all reviews about the hotel, including reviews about the hotel rooms as well as the hotel restaurant(s). The LADPH assesses only the restaurant and separately assesses each restaurant when a hotel contains multiple eateries. We excluded such cases from our sample.

<sup>10</sup> Data from the LADPH include health inspections from July 2004 through June 2010. Data from Yelp include reviews from October 2004 through June 2011. Each Yelp review was matched to the most recent health inspection in the LADPH database. Because the terminal date of the LADPH data precedes the terminal date of the Yelp data, not all Yelp reviews through June 2011 were included in the sample.

<sup>6</sup> The frequency of inspections is based on the level of risk associated with the establishment. For example, full-service restaurants that prepare food days in advance and that use utensils and dishes that must be cleaned are assigned higher risk ratings. Alternatively, fast-food restaurants that prepare food only for the current day and that use disposable utensils and dishes are assigned lower risk ratings. Higher risk ratings result in more frequent health inspections.

<sup>7</sup> See [http://www.yelp.com/faq#what\\_is\\_yelp](http://www.yelp.com/faq#what_is_yelp) (accessed February 28, 2013).



**Table 1** Joint Distribution of Consumer Value Ratings and Inspection Grades

|       | LADPH inspection grade |        |       |     | Total   |
|-------|------------------------|--------|-------|-----|---------|
|       | A                      | B      | C     | F   |         |
|       | No. of Yelp ratings    |        |       |     |         |
| 1     | 23,755                 | 2,999  | 291   | 34  | 27,079  |
| 2     | 37,702                 | 4,444  | 332   | 42  | 42,520  |
| 3     | 75,566                 | 9,959  | 730   | 91  | 86,346  |
| 4     | 150,962                | 18,505 | 1,151 | 173 | 170,791 |
| 5     | 103,587                | 11,016 | 673   | 74  | 115,350 |
| Total | 391,572                | 46,923 | 3,177 | 414 | 442,086 |

was 4.83; the distribution is highly skewed, however, because four individuals wrote more than 400 reviews. Restaurants also varied in the number of reviews they received; the average number of reviews per restaurant was 80.9 (standard deviation of 144), but a few restaurants received thousands of reviews.

Two caveats regarding the data are worthy of mention. First, the data potentially suffer from a survival bias: restaurants that failed prior to the sampling date are not included because these Yelp profiles are more difficult to access. Second, the data potentially suffer from a selection bias: online reviews are entered voluntarily. Each of these concerns is generally valid and worthy of further investigation; however, we believe that neither discredits the findings reported here. Indeed, Monte Carlo simulations exploring the possible effects of these biases suggest that the results presented here are likely an underestimation of the real effect (see Kovács et al. 2013).

### 3.2. Measures

**3.2.1. Consumer Value Rating.** The consumer value rating variable records the number of stars (out of five) assigned to the restaurant by the reviewer on the focal Yelp review. The average rating is 3.7; the mode is 4.

**3.2.2. Hygiene.** We measured a restaurant's hygiene score as a set of dummies based on the health grade assigned by the LADPH. We used the grade (i.e., A, B, C, or F) rather than the underlying numerical score given by the inspector (i.e., 0–100) because the grade is publicly posted and more salient to the consumer. We linked each Yelp review to the most recent health grade in the system.

We also constructed a hygiene score for each review by content analyzing (Weber 1990) the free commentary text entered by consumers on Yelp. We did so by

searching for hygiene-related keywords in the review texts; we compiled two lists of such words. The first list contained the 36 synonyms found in the 2012 *Webster's Thesaurus* for “clean” and “hygienic,” and the second list contained the 35 synonyms for “dirty” and “unhygienic.”<sup>11</sup> Each review was then assigned a count for the number of positive and negative words contained in it. (Positive hygiene words preceded by “not” or “no” were counted as negative hygiene words.)

**3.2.3. Authenticity.** We constructed an authenticity score for each review, again, by content analyzing (Weber 1990) the free commentary text entered by consumers on Yelp. We did so by searching for authenticity- and inauthenticity-related keywords in the review texts. We relied on the authenticity keyword list of Kovács et al. (2013), who conducted experiments using the “All Our Ideas” framework (Salganik and Levy 2012) to compile a list of 92 authenticity-related keywords. Each keyword was assigned a score ranging from –1 (highly inauthentic) to 1 (highly authentic) based on consumer responses. For example, the word “scam” scored –0.96, whereas “original” scored 0.80. We then assigned an authenticity score to each review based on the weighted sum of authenticity-keyword frequencies. We used this score in two ways. In one set of analyses, we estimated the Yelp rating of a given review based on the authenticity score of that same review. This approach directly captures the focal reviewer's perception of the restaurant's authenticity. However, it also potentially introduces concerns of endogeneity because reviewers can assign a star rating and offer comments in any order. Thus, in a second set of analyses, we estimated the Yelp rating of a given review based on the average authenticity score of all prior reviews, excluding the focal review. This approach reduces the concerns of endogeneity and, some may think, provides a more rigorous test.

**3.2.4. Control Variables.** We constructed nine control variables across three levels of analysis. At the review level, we calculated the *total number of words* in the focal review. At the reviewer level, we used the log of the *total number of prior reviews* that the reviewer had posted on Yelp. At the restaurant level, the variables include (1) the log of the *total number of prior reviews* received by the restaurant; (2) *restaurant size*, measured as the number of seats in the establishment according to LADPH records (0–10 seats, 8% of the restaurants; 11–30 seats, 23%; 31–60 seats, 31%; 61–100 seats, 18%; 101–150 seats, 9%; 151–200 seats, 4%; 201–400 seats, 5%; 401+ seats, 1%); (3) *restaurant age*, based on the number of years the restaurant

Instead, Yelp reviews were included up through the assumed timing of the next health inspection for each restaurant according to the restaurant's LADPH risk assessment code, which indicates the frequency of inspections. (Note that this is a conservative cutoff date for the Yelp reviews because health inspections are rarely carried out as frequently as their risk assessment codes suggest.)

<sup>11</sup> These lists are not included here but are available from the authors upon request.

appeared on Yelp;<sup>12</sup> (4) *restaurant price level*, based on categories from Yelp, indicating the average price per customer per meal, including tax and tips: \$ denotes less than \$15, \$\$ denotes \$15–\$30, \$\$\$ denotes \$31–\$60, and \$\$\$\$ denotes \$60 or more; (5) *chain affiliation*, based on the number of restaurants operating under the same brand name (12.42% of the restaurants were a part of a chain); (6) *family ownership*, based on whether or not the phrase “family owned” appeared in reviews for the restaurant; and (7) *number of cuisine categories* assigned to the restaurant (American, Mexican, Italian, Chinese, etc.) on Yelp (category assignment is conducted by the website, sometimes in consultation with the restaurant). Table 2 shows the descriptive statistics and pairwise correlations.

### 3.3. Analytic Approach

The structure of the data allowed for two possible approaches: (1) exploit within-restaurant variance or (2) exploit between-restaurant variance. The former approach would require an examination of changes in health grades and authenticity for a given restaurant over time by creating restaurant-month-level panel data and using restaurant fixed effects to control for possible heterogeneity between restaurants. The latter approach would require an examination of between-restaurant variance in health grades and authenticity and the use of reviewer, cuisine, and zip code fixed effects to control for possible heterogeneity between reviewers and restaurants.

We opted for the second approach for two reasons. First, it is most aligned with the proposed theoretical story, which is about how individuals resolve conflicting social codes. Second, there is not enough variance within restaurants for a restaurant fixed effects estimator to be effective. More specifically, the health grade for a given restaurant infrequently changes (65% of the restaurants in our sample do not experience a change in health grade during the study period), and authenticity is rather stable over time as well; thus, there is simply not enough variation to estimate properly within-restaurant effects.<sup>13</sup>

## 4. Findings

We conducted a series of analyses in an effort to uncover a wide-ranging set of evidence. First, we explored

<sup>12</sup> The date of the first review was used as a proxy for the founding date due to the lack of access to actual founding dates of the restaurants.

<sup>13</sup> We did conduct additional analysis consistent with the first approach. We did this by creating a subsample of restaurants that experienced a change in health grade and estimated restaurant-month level panel data models with restaurant fixed effects. The results are consistent across the two approaches. This additional analysis is available from the authors upon request.

**Table 2** Descriptive Statistics and Intercorrelations

| Variable                                     | Mean   | S.D.  | (1)    | (2)    | (3)    | (4)    | (5)    | (6)    | (7)    | (8)    | (9)    | (10)   | (11)   | (12)   | (13)   | (14)   | (15)   | (16)  |
|--|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| (1) Stars/Rating                             | 3.689  | 1.138 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| (2) Grade A                                  | 0.886  | 0.318 | 0.018  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| (3) Grade B                                  | 0.106  | 0.308 | −0.015 | −0.959 |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| (4) Grade C                                  | 0.007  | 0.084 | −0.014 | −0.237 | −0.029 |        |        |        |        |        |        |        |        |        |        |        |        |       |
| (5) Grade F                                  | 0.001  | 0.031 | −0.005 | −0.085 | −0.011 | −0.003 |        |        |        |        |        |        |        |        |        |        |        |       |
| (6) Authenticity                             | 0.162  | 0.133 | 0.084  | −0.022 | 0.021  | 0.004  | 0.003  |        |        |        |        |        |        |        |        |        |        |       |
| (7) No. of words in review (thousands)       | 0.138  | 0.117 | −0.080 | −0.007 | 0.007  | 0.002  | −0.002 | 0.034  |        |        |        |        |        |        |        |        |        |       |
| (8) No. of prior reviews (by reviewer)       | 1.812  | 1.373 | −0.080 | −0.017 | 0.018  | 0.001  | −0.004 | 0.000  | 0.144  |        |        |        |        |        |        |        |        |       |
| (9) No. of prior reviews (for restaurant)    | 5.226  | 1.176 | 0.085  | 0.007  | −0.009 | 0.007  | −0.001 | 0.002  | 0.064  | −0.007 |        |        |        |        |        |        |        |       |
| (10) Restaurant size                         | 25.651 | 1.586 | −0.096 | −0.005 | 0.001  | 0.007  | 0.023  | −0.105 | 0.052  | 0.013  | 0.163  |        |        |        |        |        |        |       |
| (11) Restaurant age                          | 2.541  | 1.363 | −0.001 | 0.025  | −0.027 | 0.006  | −0.009 | −0.018 | −0.049 | −0.012 | 0.236  | 0.077  |        |        |        |        |        |       |
| (12) Restaurant price                        | 1.837  | 0.697 | 0.016  | 0.108  | −0.100 | −0.035 | −0.017 | 0.033  | 0.120  | −0.015 | 0.261  | 0.325  | 0.048  |        |        |        |        |       |
| (13) Chain affiliation                       | 0.117  | 0.321 | 0.002  | 0.028  | −0.024 | −0.011 | −0.011 | −0.012 | 0.000  | 0.008  | 0.004  | −0.016 | −0.041 | −0.002 |        |        |        |       |
| (14) Family owned                            | 0.001  | 0.012 | 0.004  | −0.002 | 0.001  | 0.001  | 0.000  | 0.003  | 0.003  | −0.002 | −0.010 | −0.008 | −0.004 | −0.007 | −0.003 |        |        |       |
| (15) No. of cuisines                         | 1.634  | 0.701 | 0.007  | 0.069  | −0.069 | −0.013 | 0.006  | −0.096 | 0.020  | 0.003  | 0.127  | 0.101  | 0.018  | 0.142  | 0.041  | −0.002 |        |       |
| (16) No. of positive hygiene words in review | 0.043  | 0.223 | 0.014  | −0.011 | 0.008  | 0.008  | 0.005  | 0.025  | 0.109  | 0.018  | −0.045 | −0.006 | −0.042 | −0.037 | 0.000  | −0.002 | −0.017 |       |
| (17) No. of negative hygiene words in review | 0.071  | 0.314 | −0.144 | −0.026 | 0.024  | 0.009  | 0.004  | 0.017  | 0.140  | 0.026  | −0.022 | −0.001 | −0.007 | −0.053 | 0.002  | 0.005  | −0.018 | 0.060 |

Notes.  $N = 442,086$ . All values for which the absolute value is greater than 0.003 are significant at  $p < 0.01$ .

Figure 1(a) Proportion of Positive Hygiene Words in Review Text

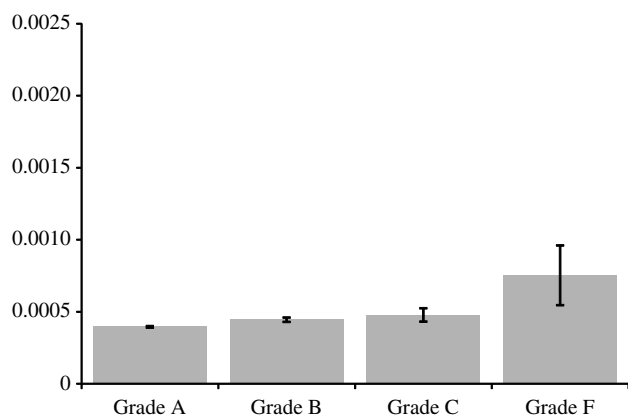
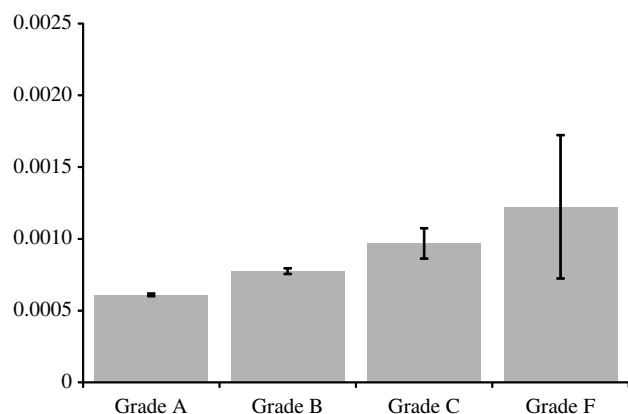


Figure 1(b) Proportion of Negative Hygiene Words in Review Text



whether consumers pay less attention to hygiene when the hygiene code is satisfied. Second, we examined whether consumers pay less attention to hygiene when they are focused on authenticity. Third, we tested the hypothesis by estimating a given consumer value rating based on the authenticity- and hygiene-related keywords appearing in that same review. Fourth, we tested the hypothesis by estimating a given consumer value rating based on the average authenticity score of all prior reviews for the restaurant. Finally, we tested an implication of the hypothesis by estimating the likelihood of a consumer complaint being filed with the local health department.

We set out first to examine whether consumers pay attention to hygiene. To do this, we compared across grade levels the mean values of the proportion of positive (Figure 1(a)) and negative (Figure 1(b)) hygiene words appearing in the reviews. Not surprisingly, the prevalence of negative hygiene words increases as the health grade decreases (for all comparisons except grades C and F,  $p < 0.05$ ). More interestingly, the prevalence of positive hygiene words also increases, albeit at a lower rate than for negative hygiene words, as the health grade decreases (for all comparisons except grades B and C,  $p < 0.05$ ). These findings suggest that

Figure 2(a) Proportion of Positive Hygiene Words in Review Text

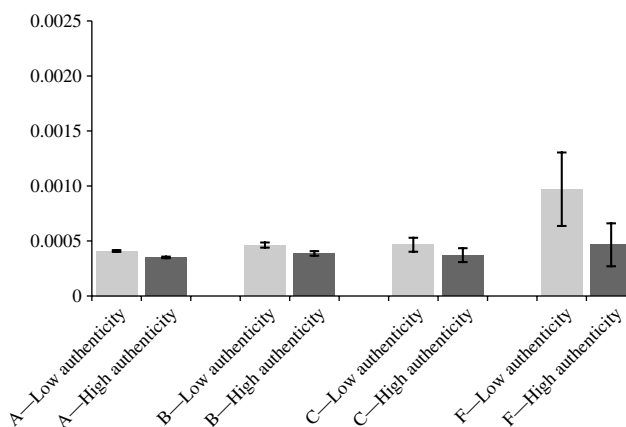
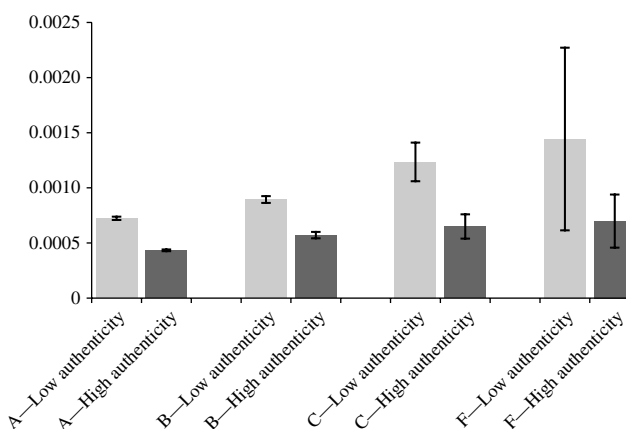


Figure 2(b) Proportion of Negative Hygiene Words in Review Text



consumers do indeed pay attention to—and comment on—the hygiene of the eateries that they frequent. More importantly, this pattern is consistent with one of the key mechanisms we believe underlies the hypothesis: consumers appear to tend to matters of hygiene less when the hygiene code is satisfied, suggesting that it indeed operates as a default.<sup>14</sup>

We then examined whether consumers pay less attention to matters of hygiene when they are focused on matters of authenticity. To do this, we compared across grade levels the mean values of the proportion of positive (Figure 2(a)) and negative (Figure 2(b)) hygiene words appearing in the reviews, conditional upon the use of authenticity-related words appearing in

<sup>14</sup> One possible interpretation of Figure 1(a) in isolation is simply that consumers use more positive hygiene words when reviewing a grade C restaurant than when reviewing a grade A restaurant. Although this is indeed true, it is important to consider Figures 1(a) and 1(b) together; consumers use more negative hygiene words than positive hygiene words to describe a grade C restaurant. The comparisons across grade A and grade C restaurants, then, seems to suggest that consumers simply do not pay attention to hygiene matters as much when assessing the former.



the same review<sup>15</sup> (“low authenticity” refers to reviews with an authenticity score of  $< 0.00$ , which represents the bottom quartile of scores and indicates the use of inauthentic keywords; “high authenticity” refers to reviews with an authenticity score of  $> 0.26$ , which represents the top quartile of scores and indicates the use of authentic keywords). A greater proportion of hygiene words appear in reviews with low authenticity scores; these differences are significant for grades A and B ( $p < 0.05$ ) in regard to positive hygiene words and for grades A, B, and C ( $p < 0.05$ ) in regard to negative hygiene words. (The same trend is also observed for grades for which the differences are not significant.) This pattern is consistent with the other key mechanism we believe underlies the hypothesis: consumers appear to overlook matters of hygiene (or at least they tend to discuss it less) when authenticity is on the mind.

We next tested the basic assumptions of our arguments—namely, that consumers would assign higher value ratings to restaurants that they view as hygienic and that they regard as authentic. Table 3 presents linear regressions predicting the number of stars (out of five) assigned to each review; a linear regression model framework was used because it allowed for the specification of fixed effects.<sup>16</sup> Model (1) presents a baseline model with control variables. Model (2) includes the number of hygiene words appearing in the review as well as the authenticity score of the review. As expected, restaurants received higher ratings to the extent that they were viewed as hygienic (*no. of positive hygiene words*:  $\beta = 0.172$ ,  $p < 0.01$ ) and lower ratings to the extent that they were viewed as unhygienic (*no. of negative hygiene words*:  $\beta = -0.387$ ,  $p < 0.01$ ). Also as expected, restaurants received higher ratings to the extent that they were regarded as authentic ( $\beta = 0.269$ ,  $p < 0.01$ ). The two baseline assumptions thus hold: hygiene and authenticity both apparently exert significant main effects on consumer value ratings.

We then tested the hypothesis that authenticity attenuates the effects of poor hygiene on consumer value ratings at higher levels of authenticity and that it strengthens the effects at lower levels of authenticity. Model (3) includes interaction terms between the hygiene word counts and the authenticity score (*no. of positive hygiene words*  $\times$  *authenticity*:  $\beta = -0.058$ ,  $p < 0.01$ ;

<sup>15</sup> Mean comparisons conditional upon the use of authenticity-related words appearing in all previous reviews, excluding the focal review, were also conducted; the results were consistent with what is reported here.

<sup>16</sup> We did conduct additional analyses to address concerns about possible ceiling effects given that the modal consumer rating is 4 and the mean is 3.7. We thus ran logistic regression models with a cutoff of five stars (i.e., 1, 2, 3, or 4 versus 5). The results are entirely consistent with what is reported here. This additional analysis is available from the authors upon request.

**Table 3** Linear Regression Estimates of Consumer Value Ratings

|   | (1)                  | (2)                  | (3)                  |
|---|----------------------|----------------------|----------------------|
| <i>No. of words in review</i><br>(in thousands)   | −0.722***<br>(0.020) | −0.811***<br>(0.020) | −0.812***<br>(0.020) |
| <i>ln(No. of reviews by reviewer)</i>   | −0.043***<br>(0.003) | −0.042***<br>(0.003) | −0.042***<br>(0.003) |
| <i>No. of prior reviews for restaurant</i>  | 0.134***<br>(0.002)  | 0.131***<br>(0.002)  | 0.131***<br>(0.002)  |
| <i>Restaurant size</i>  | −0.079***<br>(0.001) | −0.077***<br>(0.001) | −0.077***<br>(0.001) |
| <i>Restaurant age</i>   | −0.023***<br>(0.002) | −0.020***<br>(0.002) | −0.020***<br>(0.002) |
| <i>Restaurant price</i>   | 0.072***<br>(0.004)  | 0.060***<br>(0.004)  | 0.060***<br>(0.004)  |
| <i>Chain affiliation</i>  | 0.002<br>(0.006)     | 0.003<br>(0.006)     | 0.003<br>(0.006)     |
| <i>Family owned</i>   | 0.062***<br>(0.013)  | 0.056***<br>(0.013)  | 0.056***<br>(0.013)  |
| <i>No. of cuisines</i>  | −0.001<br>(0.003)    | −0.001<br>(0.003)    | −0.001<br>(0.003)    |
| <i>No. of positive hygiene words in review</i>  |                      | 0.172***<br>(0.008)  | 0.184***<br>(0.008)  |
| <i>No. of negative hygiene words in review</i>  |                      | −0.387***<br>(0.006) | −0.406***<br>(0.006) |
| <i>Authenticity score of review</i>   |                      | 0.269***<br>(0.005)  | 0.261***<br>(0.005)  |
| <i>No. of positive hygiene words in review</i> $\times$ <i>Authenticity score of review</i> |                      |                      | −0.058***<br>(0.015) |
| <i>No. of negative hygiene words in review</i> $\times$ <i>Authenticity score of review</i> |                      |                      | 0.105***<br>(0.011)  |
| Reviewer FE   | Yes                  | Yes                  | Yes                  |
| Zip code FE   | Yes                  | Yes                  | Yes                  |
| Cuisine FE  | Yes                  | Yes                  | Yes                  |
| Month FE  | Yes                  | Yes                  | Yes                  |
| Observations  | 442,086              | 442,086              | 442,086              |
| No. reviewer ID   | 91,528               | 91,528               | 91,528               |
| Log likelihood  | −585,456             | −579,887             | −579,822             |

Notes. Robust standard errors are shown in parentheses. FE, fixed effects.

\*\*\* $p < 0.01$ .

*no. of negative hygiene words*  $\times$  *authenticity*:  $\beta = 0.105$ ,  $p < 0.01$ ). These findings offer preliminary support for the hypothesis: consumers appear to overlook poor hygiene in a restaurant when they view the establishment as authentic. Yet this analysis based only on data from the focal review is mainly suggestive because Yelp reviewers can assign a star rating and offer comments in any order.

We therefore conducted a more rigorous test of the hypothesis using measures of hygiene and authenticity exogenous to the focal review. Again, we first tested the basic assumptions of our arguments. Table 4 presents linear regressions predicting the rating.<sup>17</sup> Model (1) includes indicator variables for grades B, C, and F; grade A serves as the omitted baseline. As expected, restaurants generally received lower ratings when their health grades were lower (grade B:  $\beta = -0.038$ ,  $p < 0.01$ ;

<sup>17</sup> A baseline model is not included because it would be the same as Model (1) in Table 3.

grade C:  $\beta = -0.144$ ,  $p < 0.01$ ; grade F:  $\beta = -0.058$ , n.s.). Model (1) also includes the average authenticity score for the focal restaurant based on prior reviews up to, but not including, the focal review. Again as expected, restaurants received higher ratings to the extent that they are regarded as authentic ( $\beta = 0.550$ ,  $p < 0.01$ ). The two baseline assumptions again hold.

We then tested the core hypothesis. Model (2) includes interactions between each grade indicator and the authenticity score. Two of the three interaction terms are positive and significant (*grade B*  $\times$  *authenticity*:  $\beta = 0.086$ ,  $p < 0.05$ ; *grade C*  $\times$  *authenticity*:  $\beta = 0.142$ , n.s.; *grade F*  $\times$  *authenticity*:  $\beta = 0.942$ ,  $p < 0.05$ ), and these coefficients are each significantly different from each other.<sup>18</sup> Model (3) presents a comparison of grades A and B in a sample omitting all cases with other grades. This simple contrast provides an intuitive way to see that the coefficients for grades A and B not only differ significantly from zero but also differ from each other. Model (4) provides a different contrast: it uses the full sample but omits grades A and B and uses a dummy variable combining grades C and F (*grade C/F*). It shows that the two lower grades differ significantly from the two higher grades. Overall, the findings in Table 4 offer further support for the hypothesis: consumers appear to overlook low health grades when authenticity is high.

Figure 3 presents a plot of Model (2) in Table 4, depicting the marginal effect of authenticity across the four grades. The  $x$  axis represents the authenticity of the restaurant; the plotted interval contains the 5th to 95th percentile of the distribution of observed authenticity scores. This plot shows that less authentic restaurants receive lower ratings for each health grade below grade A. However, among more authentic restaurants, these effects cancel out. In other words, the model estimates predict that authentic restaurants receive basically the same ratings irrespective of their health grades.

In a last step of the analysis, we explored a potential alternative consumer response following a dining experience—a complaint to the LADPH. A complaint filed with the local health department represents an active assertion by a consumer that the restaurant is

**Table 4** Linear Regression Estimates of Consumer Value Ratings

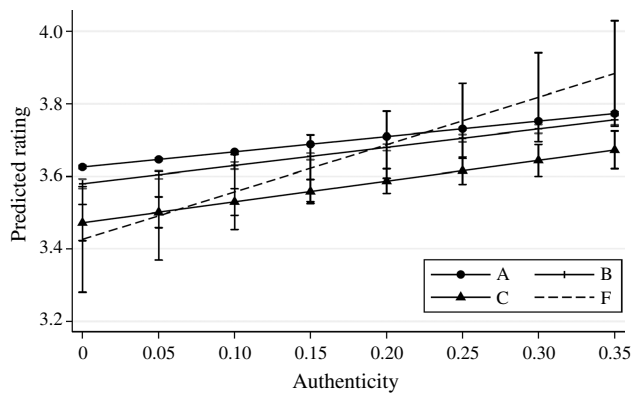
| Subsample:  | (1)<br>All           | (2)<br>All           | (3)<br>A&B grades only | (4)<br>All           |
|---|----------------------|----------------------|------------------------|----------------------|
| <i>No. of words in review</i><br>(in thousands)   | −0.743***<br>(0.020) | −0.743***<br>(0.020) | −0.742***<br>(0.020)   | −0.743***<br>(0.020) |
| <i>Ln(No. of reviews<br/>by reviewer)</i>         | −0.044***<br>(0.003) | −0.044***<br>(0.003) | −0.043***<br>(0.003)   | −0.043***<br>(0.003) |
| <i>No. of prior reviews<br/>for restaurant</i>    | 0.131***<br>(0.002)  | 0.132***<br>(0.002)  | 0.131***<br>(0.002)    | 0.132***<br>(0.002)  |
| <i>Restaurant size</i>                            | −0.075***<br>(0.001) | −0.075***<br>(0.001) | −0.075***<br>(0.001)   | −0.075***<br>(0.001) |
| <i>Restaurant age</i>                             | −0.020***<br>(0.002) | −0.020***<br>(0.002) | −0.020***<br>(0.002)   | −0.020***<br>(0.002) |
| <i>Restaurant price</i>                           | 0.057***<br>(0.004)  | 0.057***<br>(0.004)  | 0.057***<br>(0.004)    | 0.058***<br>(0.004)  |
| <i>Chain affiliation</i>                          | 0.003<br>(0.006)     | 0.003<br>(0.006)     | 0.004<br>(0.006)       | 0.004<br>(0.006)     |
| <i>Family owned</i>                               | 0.048***<br>(0.013)  | 0.047***<br>(0.013)  | 0.047***<br>(0.013)    | 0.048***<br>(0.013)  |
| <i>No. of cuisines</i>                            | 0.002<br>(0.003)     | 0.002<br>(0.003)     | 0.003<br>(0.003)       | 0.003<br>(0.003)     |
| <i>Authenticity</i><br>(running average<br>score) | 0.550***<br>(0.014)  | 0.535***<br>(0.015)  | 0.537***<br>(0.015)    | 0.548***<br>(0.014)  |
| <i>Grade B</i>                                    | −0.038***<br>(0.006) | −0.053***<br>(0.009) | −0.052***<br>(0.009)   |                      |
| <i>Grade C</i>                                    | −0.144***<br>(0.021) | −0.168***<br>(0.031) |                        |                      |
| <i>Grade F</i>                                    | −0.058<br>(0.057)    | −0.226**<br>(0.092)  |                        |                      |
| <i>Grade C/F</i>                                  |                      |                      |                        | −0.161***<br>(0.030) |
| <i>Grade B</i> $\times$<br><i>Authenticity</i>    |                      | 0.086**<br>(0.038)   | 0.085**<br>(0.038)     |                      |
| <i>Grade C</i> $\times$<br><i>Authenticity</i>    |                      | 0.142<br>(0.140)     |                        |                      |
| <i>Grade F</i> $\times$<br><i>Authenticity</i>    |                      | 0.942**<br>(0.403)   |                        |                      |
| <i>Grade C/F</i> $\times$<br><i>Authenticity</i>  |                      |                      |                        | 0.220*<br>(0.132)    |
| Reviewer FE                                       | Yes                  | Yes                  | Yes                    | Yes                  |
| Zip code FE                                       | Yes                  | Yes                  | Yes                    | Yes                  |
| Cuisine FE  | Yes                  | Yes                  | Yes                    | Yes                  |
| Month FE  | Yes                  | Yes                  | Yes                    | Yes                  |
| Observations                                      | 442,086              | 442,086              | 438,495                | 442,086              |
| Log likelihood                                    | −584,413             | −584,405             | −579,258               | −584,438             |

*Notes.* The omitted baseline category is grade A. Robust standard errors are shown in parentheses. FE, fixed effects.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ .

in violation of the hygiene code. Our core hypothesis implies that a consumer is less likely to file a complaint about a restaurant when it is regarded as authentic. Although we do not have data about all consumer complaints to the LADPH, we do know the reason prompting each recorded inspection (i.e., whether it is a complaint-based inspection as opposed to a routine inspection), and the LADPH claims to follow up on all serious complaints about poor hygiene. Of the 52,740 health inspections, 2,708 (4.9%) were due to a consumer complaint. We thus examined whether complaint-based inspections were less likely to occur for more authentic restaurants.

<sup>18</sup> The lack of significance for grade F in Model (1) and the significance for the grade F interaction in Model (2) suggests that the effect of this grading category is highly dependent on authenticity. However, some degree of caution should be taken in interpreting this especially strong interaction effect. First, such cases represent a small proportion of the observations (hence, the large standard errors). Second, such cases cannot exist for long because restaurants receiving a grade F must either improve or be closed down. It is even possible that the findings for grade F are due to patrons who are seeking to “save” an unhygienic restaurant from being closed down or from suffering irreparable reputational loss. Nevertheless, these effects are indeed consistent with our theoretical position and also with the effects of the other grades.

**Figure 3** Predicted Consumer Value Ratings

Note. The point estimates shown here are derived from Model (2) in Table 4.

This analysis used a logistic regression framework to predict the likelihood of a complaint-initiated inspection based on inspection-level data. These models control for the previous health grades of the restaurant as well as the organization-level controls shown in Table 4. We found that a restaurant is more likely to undergo a complaint-based inspection to the extent that its most recent health grade is lower (*grade B*:  $\beta = 0.520$ ,  $p < 0.01$ ; *grade C*:  $\beta = 0.901$ ,  $p < 0.01$ ; *grade F*:  $\beta = 1.517$ ,  $p < 0.01$ ; *grade A* was again the omitted baseline category). More interestingly, we also found that a restaurant is less likely to undergo a complaint-based inspection to the extent that it is regarded as authentic ( $\beta = -0.393$ ,  $p < 0.01$ ). These findings lend additional support for the hypothesis.

## 5. Discussion

Institutional theorists emphasize how individuals in modern social life are drawn to rationality in that they often invoke rationalistic explanations and tend to adopt apparently rational models and solutions in a taken-for-granted manner (Meyer and Rowan 1977). Common among the explanations these individuals offer for their behavior are scientific theories and evidence, which are assumed to be authoritative (Drori and Meyer 2006). Accordingly, science can be viewed as a social code.

Institutional theories usually posit science as a default code, meaning that individuals typically assume that it applies unless they encounter evidence to the contrary. This is especially true when it is also of imperative standing in the form of legal obligations. Yet little is known about the conditions under which default codes are suspended and another—possibly conflicting—code is applied instead. Institutional theorists are generally silent on the matter, implying that the spread of norms of rationality involves little friction, yet examples from everyday life suggest otherwise.

The aim of this study was to explore a specific case of conflicting social codes in the restaurant domain.

Food and dining provides a ripe context for exploring the issue because modern dining consumers generally embrace science-based health regulations as a default, and recent public posting laws make violations especially salient. At the same time, diners also often hold the authenticity of certain restaurants in high regard, and this provides an alternative code for evaluating dining establishments. We therefore started with the base assumption that compliance with each of the two social codes has an additive effect on consumer value ratings. We then proposed that, in cases of conflicting codes, consumers overlook cues pertaining to one code and focus their attention more on cues pertaining to the other. More specifically, we hypothesized that the effects of noncompliance with the hygiene code on consumer value ratings will attenuate among restaurants regarded as authentic but strengthen among restaurants regarded as inauthentic.

Empirical analysis of online restaurant reviews lends support for this hypothesis. Compliance with health regulations, on the one hand, and authenticity, on the other hand, interact to shape consumer value ratings such that unhygienic yet authentic restaurants are valued just as much as their hygienic and authentic counterparts; however, less hygienic and less authentic restaurants are valued significantly lower than their hygienic counterparts.<sup>19</sup>

More generally, these findings offer insights into understanding how consumers make value judgments in light of conflicting social codes. The codes of hygiene and authenticity can be regarded as potentially oppositional, and the empirical findings suggest that restaurant patrons resolve the apparent conflict by attending to the authenticity code and overriding the default hygiene code. This study thus provides evidence that consumers resolve contradictory social codes by selectively applying one code and sidestepping the other.

More practically, contexts where consumers selectively apply social codes should be of interest to managers and executives. Offering attractive products and services in such contexts means that it is important to know the social codes and that it may not be necessary to adopt all of the social codes at play. Rather, tough strategic choices seem to be required to present

<sup>19</sup> We acknowledge here that we did not account for the particulars of hygiene violations. We have argued that any hygiene violation is more likely to be overlooked when authenticity is at play. However, it is possible that these effects may be stronger in light of some hygiene violations (e.g., hanging ducks) compared to others (e.g., cockroaches). Such an analysis would require a classification of hygiene violations that was not readily apparent. (Note that the hanging ducks would be marked as a violation of food temperature rules, so even the cultural element here is not evident in the inspection reports.) However, we view this as a potential avenue for future inquiry. (We thank an anonymous reviewer for raising this interesting idea.)



a coherent and consistent set of offerings to consumers and enjoy enhanced performance.<sup>20</sup>

At a metatheoretical level, the microanalytical approach used here differs from extant macrolevel studies of conflicting institutional logics (cf. D'Aunno et al. 1991, Thornton 2002, Greenwood et al. 2010) in that it involves the analysis of individual decisions, allowing us to offer insights into the processes at play. It also differs from recent sociological theories of valuation that emphasize the structural aspects of the context, such as the degree to which producers or evaluators are concentrated (Lamont 2012, Zuckerman 2012). We believe that such an approach may help facilitate the subsequent development of a more general theory of the diffusion of norms of rationality.

This study also illustrates how legal environments may be endogenous to organizational practice. Edelman et al. (1999) highlight this endogeneity by pointing to the ways in which various professional groups frame solutions to managerial problems that subsequently become adopted by organizations and then enforced by the courts (see also Edelman 2004, Dobbin and Kelly 2007). In food and dining, we see here that the law may be deemphasized or ignored because the organization at hand presents another identity—one of an authentic producer of a particular cuisine—that some consumers accept in its place. In a similar vein, some consumers also support purveyors of raw milk and raw milk products such as cheese and yogurt, even when these restaurant owners have faced raids and threats of closure by governmental health officials (Greene 2012; U.S. Food and Drug Administration 2012a, b).

In extreme cases, consumer reactions can be so strong as to engender real changes in the law. For instance, as a result of the pushback from the crackdown of the Chinese hanging ducks in California in 1981, Jerry Brown, then governor of the state of California, signed into law a newly adopted legislation that exempted “Chinese-style roast” (including but limited to Chinese-style barbecue duck, dry-hung duck, and Peking duck) from Section 113996 of the Health and Safety Code. This exemption stands to this day, and ducks hang in Chinese restaurants and shops all over California. For like reasons, California recently enacted explicit exemptions for Korean rice cakes and freshly made Asian rice-based noodles (Thompson 2010). Similarly, New York City now exempts hanging ducks in Chinese restaurants and also allows fermented kimchi to sit at room temperature in Korean restaurants (Collins 2012).

Even though formal legal changes such as these may be rare (Renteln 2004), the rejection of default rational

codes by certain individuals in particular contexts is not. Looking beyond food and dining, we would suggest that the continued contemporary popularity of practices as different as feng shui, home schooling, and the anxious shunning of vaccination may arise from a similar process of rejection of the default code of rationality in favor of an alternative. We look forward to future research that analyzes the decisions and attributions made in these and other social contexts where social codes potentially collide.

## Acknowledgments

All authors contributed equally to this project. The authors thank the following friends and colleagues for helpful comments on earlier versions of this paper: Gary Ballinger, Nathan Betancourt, Gianluca Carnabuci, Amanda Cowen, Isabel Fernandez-Mateo, Henrich Greve, Rebeka Johnson, Özgecan Koçak, Rose Luo, Giacomo Negro, Kieran O'Connor, Matteo Prato, Matt Rabin, and Adelaide Wilcox-King. This project was graciously supported by research grants from Stanford University and the University of Virginia. Earlier versions of this paper were presented at the Annual Academy of Management Meeting in Orlando and at the Annual Ecology Conference in Budapest.

## References

- Baron JN (2004) Employing identities in organizational ecology. *Indust. Corp. Change* 13(1):3–32.
- Barro J (2012) Restaurant letter grades make your food worse. *Forbes* (February 29), <http://www.forbes.com/sites/joshbarro/2012/02/29/restaurant-letter-grades-make-your-food-worse/>.
- Berquist LM (1982) Peking duck attacked as dangerous. *Los Angeles Times* (July 24) B2.
- Beverland MB (2005) Crafting brand authenticity: The case of luxury wines. *J. Management Stud.* 42(5):1003–1029.
- Brown ER (1979) *Rockefeller Medicine Men: Medicine and Capitalism in America* (University of California Press, Berkeley).
- Carroll GR, Wheaton DR (2009) The organizational construction of authenticity: An examination of contemporary food and dining in the U.S. Staw BM, Brief A, eds. *Research in Organizational Behavior*, Vol. 29 (Elsevier/JAI, New York), 255–282.
- Collins G (2012) Even the A students sometimes break health rules. *New York Times* (February 28) <http://www.nytimes.com/2012/02/29/dining/new-york-city-restaurants-skirt-inspections-finer-points.html>.
- D'Andrade R (1995) *The Development of Cognitive Anthropology* (Cambridge University Press, New York).
- D'Aunno T, Sutton RI, Price RH (1991) Isomorphism and external support in conflicting institutional environments: A study of drug abuse treatment units. *Acad. Management J.* 34(3):636–661.
- Davies S (2001) *Musical Works and Performances: A Philosophical Exploration* (Clarendon Press, Oxford, UK).
- Dobbin F, Kelly EL (2007) How to stop harassment: Professional construction of legal compliance in organizations. *Amer. J. Sociol.* 112(4):1203–1243.
- Dobbin F, Sutton JR, Meyer JW, Scott WR (1993) Equal opportunity law and the construction of internal labor markets. *Amer. J. Sociol.* 99(2):396–427.
- Drori GS, Meyer JW (2006) Scientization: Making a world safe for organizing. Djelic M, Sahlin-Andersson K, eds. *Transnational Governance: Institutional Dynamics of Regulation* (Cambridge University Press, Cambridge, UK), 31–52.

<sup>20</sup> The impact of Yelp ratings on restaurant performance is documented by Luca (2011), who reports that a one-star increase in ratings generates an increase in revenues of up to 9%. Findings such as these suggest that the findings reported here are indeed of substantive significance for organizational success, growth, and even survival.

- Dutton D (2003) Authenticity in art. Levinson J, ed. *The Oxford Handbook of Aesthetics* (Oxford University Press, New York), 258–274.
- Edelman LB (2004) The legal lives of private organizations. Sarat A, ed. *The Blackwell Companion to Law and Society* (Blackwell, London), 231–252.
- Edelman LB, Suchman MC (1997) The legal environments of organizations. *Annual Rev. Sociol.* 23:479–515.
- Edelman LB, Uggen C, Erlanger HS (1999) The endogeneity of legal regulation: Grievance procedures as rational myth. *Amer. J. Sociol.* 105(2):406–454.
- Fine GA (2004) *Everyday Genius: Self-Taught Art and the Culture of Authenticity* (University of Chicago Press, Chicago).
- Fiske ST, Taylor SE (1991) *Social Cognition*, 2nd ed. (McGraw-Hill, New York).
- Galperin I, Sorenson O (2012) Of categories and attributes. Working paper, Yale School of Management, New Haven, CT.
- Grazian D (2005) *Blue Chicago: The Search for Authenticity in Urban Blues Clubs* (University of Chicago Press, Chicago).
- Greene J (2012) In fight over raw milk, FDA says no whey. *National Law J.* 34(March 19), <http://www.nationallawjournal.com/id=1202545950264/In-fight-over-raw-milk-FDA-says-no-whey>.
- Greenwood R, Díaz AM, Li SX, Lorente JC (2010) The multiplicity of institutional logics and the heterogeneity of organizational responses. *Organ. Sci.* 21:521–539.
- Guy KM (2002) *When Champagne Became French: Wine and the Making of a National Identity* (Johns Hopkins University Press, Baltimore).
- Hannan MT, Pólos L, Carroll GR (2007) *Logics of Organization Theory: Audiences, Codes and Ecologies* (Princeton University Press, Princeton, NJ).
- Hedström P (1994) Contagious collectivities: On the spatial diffusion of Swedish trade unions, 1890–1940. *Amer. J. Sociol.* 99(5):1157–1179.
- Hosking R, ed. (2006) *Authenticity in the Kitchen: Proceedings of the Oxford Symposium on Food and Cookery 2005* (Prospect, Devon, UK).
- Jin GZ, Leslie P (2003) The effect of information on product quality: Evidence from restaurant hygiene grade cards. *Quart. J. Econom.* 118(2):409–451.
- Jin GZ, Leslie P (2009) Reputational incentives for restaurant hygiene. *Amer. Econom. J.: Microeconom.* 1(1):237–267.
- Jones C, Anand N, Alvarez JL (2005) Manufactured authenticity and creative voice in cultural industries. *J. Management Stud.* 42(5):893–899.
- Kovács B, Hannan MT (2010) The consequences of category spanning depend on contrast. Hsu G, Negro G Koçak Ö, eds. *Categories in Markets: Origins and Evolution*, Research in the Sociology of Organizations, Vol. 31 (Emerald Group Publishing, Bingley, UK), 175–201.
- Kovács B, Carroll GR, Lehman DW (2013) Authenticity and consumer value ratings: Empirical tests from the restaurant domain. *Organ. Sci.* 25(2):458–478.
- Lamont M (2012) Toward a comparative sociology of valuation and evaluation. *Annual Rev. Sociol.* 38:201–221.
- Lindholm C (2008) *Culture and Authenticity* (Wiley-Blackwell, New York).
- Loftus EF, Donders K, Hoffman HG, Schooler JW (1989) Creating new memories that are quickly accessed and confidently held. *Memory Cognition* 17(5):607–616.
- Los Angeles Times (1982) Battle over Peking duck heating up. (March 3) A14.
- Luca M (2011) Reviews, reputation, and revenue: The case of Yelp.com. Working paper, Harvard Business School, Boston.
- Luca M (2013) Fake it till you make it: Reputation, competition, and Yelp review fraud. Working paper, Harvard Business School, Boston.
- March JG, Simon H (1958) *Organizations* (John Wiley & Sons, New York).
- Meyer JW, Rowan B (1977) Institutionalized organizations: Formal structure as myth and ceremony. *Amer. J. Sociol.* 83(2):340–363.
- Mukherjee A, Venkataraman V, Liu B, Glance N (2013) What Yelp fake review filter might be doing? *Proc. Seventh Internat. AAAI Conf. Weblogs Soc. Media* (AAAI Press, Palo Alto, CA), 409–418.
- Peterson RA (1997) *Creating Country Music: Fabricating Authenticity* (University of Chicago Press, Chicago).
- Peterson RA (2005) In search of authenticity. *J. Management Stud.* 42(5):1083–1098.
- Petty RE, Wegener DT (1999) The elaboration likelihood model: Current status and controversies. Chaiken S, Trope Y, eds. *Dual Process Theories in Social Psychology* (Guilford Press, New York), 41–72.
- Phillips DJ (2013) *Shaping Jazz: Cities, Labels and the Global Emergence of an Art Form* (Princeton University Press, Princeton, NJ).
- Potter A (2010) *The Authenticity Hoax* (HarperCollins, New York).
- Powell WW, Colyvas JA (2008) Microfoundations of institutional theory. Greenwood R, Oliver C, Suddaby R, Sahlin K, eds. *Handbook of Organizational Institutionalism* (Sage, London), 276–298.
- Renteln AD (2004) *The Cultural Defense* (Oxford University Press, Oxford, UK).
- Salganik MJ, Levy KE (2012) Wiki surveys: Open and quantifiable social data collection. Working paper, Princeton University, Princeton, NJ <http://arxiv.org/abs/1202.0500>.
- Schneider W, Shiffrin RM (1977) Controlled and automatic information processing: I. Detection, search, and attention. *Psych. Rev.* 84(1):1–66.
- Seiler M (1982) Controversy over Peking duck finally laid to rest. *Los Angeles Times* (July 7) SD3.
- Simon PA, Leslie P, Run G, Jin GZ, Reporter R, Aguirre A, Fielding JE (2005) Impact of restaurant hygiene grade cards on foodborne-disease hospitalizations in Los Angeles County. *J. Environ. Health* 67(7):32–36.
- Starr P (1982) *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry* (Basic, New York).
- State of California (2014) California Retail Food Code: Excerpt from California Health and Safety Code (Effective January 1, 2012). Report, State of California, Sacramento.
- Suchman MC (1995) Managing legitimacy: Strategic and institutional approaches. *Acad. Management Rev.* 20(3):571–610.
- Sutton JR, Dobbin F, Meyer JW, Scott WR (1994) The legalization of the workplace. *Amer. J. Sociol.* 99(4):944–971.
- Sweeney JC, Soutar GN (2001) Consumer perceived value: The development of a multiple item scale. *J. Retailing* 77(2):203–220.
- Thompson D (2010) Senate OKs keeping rice noodles out of cold. *San Francisco Chronicle* (May 25) <http://www.sfgate.com/restaurants/article/Senate-OKs-keeping-rice-noodles-out-of-cold-3263214.php>.
- Thornton PH (2002) The rise of the corporation in a craft industry: Conflict and conformity in institutional logics. *Acad. Management J.* 45(1):81–101.
- U.S. Food and Drug Administration (2012a) Federal government gains permanent injunction against raw milk producer. Press release (February 22), Food and Drug Administration, Washington, DC.

- U.S. Food and Drug Administration (2012b) The dangers of raw milk: Unpasteurized milk can pose a serious health risk. Food Facts newsletter (August), Food and Drug Administration, Washington, DC.
- Weber RP (1990) *Basic Content Analysis* (Sage, London).
- Yi D (2000) Health codes often at odds with ethnic tastes. *Los Angeles Times* (September 6), <http://articles.latimes.com/2000/sep/06/news/mn-16263>.
- Zeithaml VA (1988) Consumer perceptions of price, quality, and value: A conceptual model and synthesis of research. *J. Marketing* 52(3):2–22.
- Zuckerman EW (1999) The categorical imperative: Securities analysts and the illegitimacy discount. *Amer. J. Sociol.* 104(5): 1398–1438.
- Zuckerman EW (2012) Construction, concentration and (dis)continuities in social valuations. *Annual Rev. Sociol.* 38:223–245.