Michelin Is Coming to Town: Organizational Responses to Status Shocks

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Abstract. What happens in the aftermath of the introduction of a new status ranking? In this study, we exploit the unique empirical opportunity generated by the release of the first edition of the Michelin Guide for Washington, DC, in the fall of 2016. We build on prior work on rankings as insecurity-inducing devices by suggesting that newly awarded high-status actors modify their self-presentation attributes to fit with what they believe audiences expect from the elite. Our results show that, depending on their standing prior to Michelin's entry, restaurants acted upon different attributes of their self-presentation. Restaurants with high prior standing emphasized attributes that channeled authenticity and exclusivity, which may imply that their Michelin designation triggered operational changes. Actors with low prior standing, on the other hand, acted on descriptive attributes that did not necessarily imply operational changes and could be easily manipulated to signal their belonging among the elite. We contribute to research on status and conformity by disentangling the sources and types of conformity behaviors that newly awarded high-status actors deploy.

Introduction

Organizational scholars have devoted substantial attention to the concept of status, defined as the position occupied by an actor in a social hierarchy (e.g., Podolny 1993 and Piazza and Castellucci 2014). Created by arbiters and critics who issue public judgements and evaluations, status hierarchies have been credited with influencing actors' performance and survival chances (Rao et al. 2005, Sauder 2006). Status brings increased visibility and informational control (Goode 1978, Cole and Singer 1991, Gould 2002) that ultimately provide access to resources and performance advantages (Simcoe and Waguespack 2011, Sauder et al. 2012). High-status firms command higher prices, face lower costs, obtain easier access to resources, and enjoy greater freedom to deviate from norms (Podolny 1993, Benjamin and Podolny 1999, Phillips and Zuckerman 2001, Sauder et al. 2012). Prior studies show that, once status is attributed, high-status actors automatically accrue disproportionate rewards and resources, and status positions become difficult to change (Gould 2002, Malter 2014). It, hence, comes as no surprise that these studies describe high-status actors as more willing to deviate, as the risk of diluting their status is weak (Phillips and Zuckerman 2001, Durand and Kremp 2016).

But is it, really? We are all familiar with stories of restaurants gaining or losing stars, premium carmakers seeing their appeal ascend or plummet, and elite schools and athletes climbing or falling in rankings.[1] The relative, unstable, and highly visible nature of status hierarchies has more recently been framed as a great source of insecurity for high-status actors (Sauder and Espeland 2009). Correspondingly, a more recent stream of literature has started to examine sources of instability in status hierarchies (Jensen and Roy 2008, Sauder and Espeland 2009, Phillips et al. 2013, Hahl and Zuckerman 2014, Kovács and Sharkey 2014, Hahl et al. 2017, Jourdan et al. 2017, Prato et al. 2019). In particular, prior work has discussed at least two reasons why an actor who lands a high-status position should not be immune to status insecurity. First, the process of attaining status encourages moral compromises and demands an assertion of superiority (Hahl and Zuckerman 2014), leading a suspicious public to perceive high-status actors as inconsiderate and inauthentic (Hahl et al. 2017, Jourdan et al. 2017). Second, recent studies have argued that high-status actors are not insulated from negative evaluations (Jensen and Roy 2008, Kovács and Sharkey 2014) and may be subject to penalties for deviance (Sauder and Espeland

2009, Prato et al. 2019). Faced with such insecurity, high-status actors have been shown to engage in compensatory actions aimed at resolving concerns about morality and authenticity and at recovering lost ground in the face of negative evaluations and penalties. In particular, prior work has discussed how high-status actors use ostensibly compensatory behaviors to counteract the tendency to "denigrate heroes" (Hahl and Zuckerman 2014); examples include lowbrow culture appreciation (Hahl et al. 2017) and low-profit arthouse investments (Jourdan et al. 2017). Other research suggests that actors react to status losses by reaffirming their worth through mimicking high-status value attributes, such as pricing (Askin and Bothner 2016) and categories (Delmestri and Greenwood 2016, Bowers and Prato 2018).

In this study, we focus our attention on actors who experience a positive change to their status, examining how the insecurity pressures generated by such an increase in status induce them to justify and defend their newly acquired position (Correll et al. 2017, Hahl et al. 2017, Wang and Jensen 2019). Studying responses to status changes demands specific empirical conditions. Most prior studies have examined changes within existing status hierarchies by looking at population data that lacked a clearly stipulated counterfactual and/or control population to establish causality (Azoulay et al. 2013). More recently, empirical work in this domain has started to employ laboratory experiments (Hahl and Zuckerman 2014, Hahl et al. 2017). Although crucial for identifying the causal mechanisms at play, these studies cannot provide us with real-world evidence of actors' behavior. To avoid these problems, while also overcoming identification issues, we leverage the unique empirical opportunity of an exogenous shock in the attribution of status—namely, the release of the first edition of the Michelin Guide for Washington, DC, in the fall of 2016. This approach allows us to move away from a simple discussion of status gains and losses, which could originate endogenously over time. Instead, the exogenous shock of Michelin's entry allows us to observe how focal actors respond to the status change, net of potential actions taken by actors to influence their status positions.

Although not easy to observe, exogenous status shocks are not uncommon. Bowers and Prato (2018), for example, leveraged one of these events to study the effects of changes in status hierarchies among financial analysts. In our case, Michelin is the most prestigious critic in the restaurant industry (Rao et al. 2003, 2005; Ferguson 2008), and the release of its signature red Guide is a significant event for the U.S. fine-dining scene. Washington, DC, was indeed only the fourth U.S. city to be acknowledged by Michelin as worthy of their attention. Such exclusivity clearly exacerbated insecurity pressures associated with the establishment of a new status hierarchy, as all restaurants included in the Guide were admitted for the first time to a ranking that allowed them to join an avant-garde of national restaurants and the elite of the industry worldwide. Using a difference-in-differences approach, we examine changes enacted by restaurants included in the Guide vis-à-vis similar DC restaurants that failed to be included. Arguably, these restaurants were also "treated" by their exclusion, and they are potentially subject to contamination effects. We, hence, further compare the behavior of included restaurants to a second control group, consisting of similar restaurants in Boston, a comparable city that Michelin has not entered. This allows us to more precisely link changes in restaurants' behavior to the status shock they experienced as the result of a new, influential hierarchy being introduced.

Beyond making a fundamental empirical contribution to the literature on status, this work extends current theory in new and important ways. We focus our attention on the behavior of actors who experience a sudden and positive increase in status—that is, a positive status shock—that elevates them to the elite of the industry worldwide. As such, it may seem they would not need to engage in compensatory actions to justify and defend their newly acquired positions. Still, we argue, these high-status actors will respond to a positive status shock by modifying their self-presentation attributes to conform to the expectations associated with their newly acquired status. Our results show that restaurants that experienced a positive status shock acted on three sets of self-presentation attributes. They modified the content of their menus to make their *descriptive* attributes consistent with the ethos of the elite. They better emphasized the techniques and ingredients used to display the *authenticity* that characterizes elite players. Finally, they adjusted pricing to signal awareness of the *value* they create for, and capture from, their customers. We further discuss how responses to status gains are not homogeneous across high-status actors. Results from our analyses suggest that, although all of the status-shocked restaurants acted on all three sets of attributes, the tendency to act was stronger for restaurants that were not placed at the top of the new ranking—that is, those that were not awarded a Michelin star. Contrary to our predictions, our results also suggest that restaurants with high prior standing—which should have been less concerned about proving their worth, but are potentially subject to the denigrating tendencies described by Hahl and colleagues (Hahl and Zuckerman 2014, Hahl et al. 2017)—also engaged in substantial changes to their self-presentation. In particular, they emphasized attributes channeling authenticity and value, implying that their new Michelin designation may have triggered operational changes. Restaurants with

low prior standing, on the other hand, mostly acted on descriptive attributes that did not necessarily imply operational changes, but signaled that they "fit the mold"—that is, that they belong to the elite (Askin and Bothner 2016). Overall, we believe this work complements prior studies on status insecurity and conformity by showing that high-status actors may conform to different pressures depending on the source(s) of their status insecurity—that is, on whether their insecurity originates from concerns about authenticity or belonging.

Theoretical Development

Higher status brings several advantages to actors. Prior literature has associated status with the ability to charge higher prices and generate higher revenues (Benjamin and Podolny 1999); to more easily access resources and, as a result, lower costs (Podolny 1993, Phillips and Zuckerman 2001); and to enjoy a higher likelihood of survival in general (Baum and Oliver 1992, Podolny et al. 1996, Park and Podolny 2000). It should, hence, come as no surprise that organizations actively seek status, and, once they gain it, they endeavor to capture all of the associated benefits (Benjamin and Podolny 1999). Most of prior work has looked at status as a relatively stable property of actors (Washington and Zajac 2005). This stability enables high-status actors to act against general expectations (Phillips and Zuckerman 2001, Durand and Kremp 2016) and span categories without experiencing punishment (Kovács and Johnson 2014, Goldberg et al. 2016).

Scholars have more recently started to question these assumptions and embrace a more nuanced view of status. As Sauder and Espeland (2009, pp. 74–75) observe, the same processes by which actors are placed in a status hierarchy are also "engines of status anxiety," with "perennial" insecurity fostered by the fact that status hierarchies are relative, unstable, and highly visible. Accordingly, recent work examines how actors behave when facing insecurity about their position in a status hierarchy (Askin and Bothner 2016) and the denigrating tendencies associated with status attainment (Hahl and Zuckerman 2014). These studies show that actors react to status losses by signaling that they belong in the high-status group (Askin and Bothner 2016) and that they address doubts about their fit by engaging in acts of deference (Jourdan et al. 2017). When status is not questioned, but authenticity is, they tend to publicly display appreciation for authentic products and practices (Hahl et al. 2017). We contribute to this line of work by uncovering how actors react to gaining status.

How Actors React to Gaining Status

If one were to adopt the traditional view of status as a relatively stable property that shields actors from negative evaluations and penalties, one may think that actors who suddenly *gain* status would feel no need to engage in actions aimed at signaling their worth. However, once we embrace the more recent and nuanced view of status, it follows that suddenly gaining status can trigger insecurity pressures, leading some actors to justify and defend their newly acquired positions (Correll et al. 2017, Hahl et al. 2017, Wang and Jensen 2019). That is precisely the conjecture our study explores.

Status signals an acknowledgment of capabilities and, in turn, triggers expectations from an audience (Ridgeway and Erickson 2000, Lynn et al. 2009). We argue that actors newly awarded with status will internalize these expectations, leading them to modify both ceremonial and material aspects of their offering to qualify as legitimate members of the elite group (Goffman 1959, Podolny 1993). An organization that reacts to a positive status shock by making changes to conform is essentially acting on its self-presentation, in an effort to better align with its perception of its audience's expectations (Ridgeway and Erickson 2000, Schlenker 2002, Jourdan et al. 2017, Wang and Jensen 2019). We, hence, refine the dominant idea that high-status actors are less likely to conform to what is "normal" or observable in their industry (Phillips and Zuckerman 2001) by suggesting that they will *also* display a tendency to conform (Prato et al. 2019). More specifically, our main hypothesis postulates that actors will react to positive status shocks by modifying their self-presentation, with the aim of conforming to what they believe audiences expect from high-status players:

Hypothesis 1. *Organizations that experience a positive status shock will modify their self-presentation with the aim of conforming to the expectations associated with their newly acquired status.*

In our specific empirical setting, we look at how restaurants included in the Guide modify their self-presentation by acting on their menus. Our intuition rests on the idea that restaurant menus play a fundamental role that goes well beyond the obvious provision of information about items and prices. Menus are the "first clear opportunity for the restaurant to identify itself to the patrons and give an indication about what kind of establishment it is" (Lakoff 2006, p. 151)—that is, they communicate the essential nature of an establishment. Indeed, there is increasing emphasis in the restaurant industry on the science behind "menu engineering,"[2] a topic that may sound obscure to us as restaurant customers, but that is nowadays part of the curriculum taught to industry professionals.[3] Fine-dining menus may use sophisticated names for each dish. They often provide details about ingredient sourcing or the story behind the creation of the dish itself

(see Figure 1 for an example). These choices help a restaurant set expectations with customers, and, as noted by Liberman (2004), they are used as status markers—tangible manifestations of the standing of the establishment. Viewing menus as a tangible manifestation of restaurants' efforts to mark their status is also practical from an empirical standpoint, as it allows us to compare changes within and across organizations (Rao et al. 2003). If menus can be used as markers of status, we suggest that restaurants will act to ensure that their

Figure 1. Example of Menu

MENU NOTES

ROASTED BANANA BAVAROIS
I was working on a truffle dish around the holidays when we happened upon this combination. I wanted something lighter than the traditional garlic or potato that might get paired with the truffles and started thinking about other ingredients that had depth and which make work with the truffles' earthiness. Sea urchin is what came to mind with its unctuousness and that feeling of "breath of ocean". In order not to overpower the sea urchin, we needed a medium that wasn't too savory. I often get chocolate undertones with truffles, and had been joking with my pastry chef about doing a banana-truffle dessert and figured that would be the obvious choice.

BOSTON MACKEREL
As we move into Fall, I wanted to make a fish course that, as the second course would be an early transition, much like summer to fall and lighter into richer. The richness and bigger flavor profile of mackerel is something I think of more in the fall and winter. Needing the garnish to have some intensity but also brightness of flavor, the South of France is used for inspiration. A little sweetness with the carrots and orange, a touch of brine from the olive, and cumin-spiced socca tie the dish together.

GARBURE
Garbure, the classic cabbage and meat stew, is one of the first dishes I ordered when I went to France as a stagiaire in 1998. I always hesitate to explain garbure to people because it's a stew that is more of a knife and fork type dish. In the southwest of France where the duck is king, the more upscale versions generally include duck confit. In order to make our version a little lighter I use slices of duck breast with confit of cabbage and La Ratte potatoes which provide the stewiness, and of course foie gras emulsion for richness and depth.

LOBSTER CASSOULET
I was once tasked with using Japanese adzuki beans to come up with a dish. The American in me said "Pork and Beans", the French in me said "Cassoulet". The fact that it is a Japanese bean drew me to Lobster Cassoulet. The lobster is poached in oil made with the roasted shells and herbs to give off a very savory depth in flavor. The beans are heated in stock flavored with bonito flakes, providing the depth and smokiness of a meat stock but much cleaner in flavor. It has all of the complexity of its western muse, but with a refinement and delicacy that is very Japanese to me.

KUROGE BEEF
Kuroge beef is special. It is one of those foods that you can do so much with and simultaneously need to make sure you don't ruin it. Frequently, with Kuroge I think of the sense of taste - sweet, sour, salty, bitter-fresh (umami) - and decide which accents to use. Moving into Fall, the use of potato, sunchokes, butternut squash, kale and persimmon are highlights for the dish.

CONCORD GRAPE ISPAHAN
Pierre Hermé is a giant in the modern pastry world and, some would say, singularly responsible for the resurgent popularity of macarons which he began to focus on while Pastry Chef at Ladurée in the 90s. One of his signature creations was inspired by the Iranian city of Isfahan, renowned for its gardens and roses. Titled 'Ispahan,' it featured flavors of raspberry, rose and lychee. I've drawn inspiration from Chef Hermé's approach to building flavor and creating pastries and pay homage to his signature creation here. My Ispahan replaces raspberry with autumn's concord grape, whose brightness marries nicely with the floral notes of the rose and lychee. A touch of cardamom nods at Iranian cuisine and accents the grape's tannins.

SAINT HONORÉ
I officially began my pastry career studying classic French technique at The French Culinary Institute in Manhattan. We studied the great canon of French desserts, including Gâteau St. Honoré, a choux-based cream tart named for the patron saint of bakers. In my inexperienced opinion, it was complicated to execute and seemed old-fashioned. I was sure it was the product of another era – the French version of a jello fruit salad. To my chagrin, I was assigned the cake as part of my graduation exam and even had to make them in miniature for display. Months later while apprenticing in France, I discovered the St. Honoré is still highly beloved in its native country. As my skill in and knowledge of pastry has grown, so has my appreciation of this classic gâteau.

— ERIC ZIEBOLD, Chef

— ANNE SPECKER, Pastry Chef

Notes. The figure displays an example of a restaurant menu. Prior work suggests that high-status restaurants tend to offer a high level of detail in their menus to convey a narrative that goes beyond a simple list of ingredients. The menu shown further exemplifies how menus can be used to provide details about ingredient sourcing or the story behind the creation of the dish itself.

menu reflects their new position (Rao et al. 2005; Gergaud et al. 2007, 2015). Changes in menus can be used by the newly recognized high-status actors as a simple, yet powerful, way to align their self-presentation with the perceived expectations of a status-conscious audience.

The Moderating Role of Prior Standing

We have argued that actors make changes in their self-presentation to conform to what they believe audiences expect from high-status players and to qualify as legitimate members of the elite. In doing so, we have conceived of newly recognized high-status actors as homogenous. Still, one could expect such changes to be particularly useful when audiences' perceptions are not perfectly aligned with the newly granted status position (Kovács and Sharkey 2014). This is consistent with arguments put forward by Gergaud et al. (2015) in their study of the effects of Michelin stars in New York City. According to the authors, when a restaurant increases its prices after being featured in Michelin, its chances of survival increase only when its *perceived* food quality (measured with consumer ratings) also goes up. In other words, producers' actions need to be aligned with audiences' perceptions. Our argument is that the standing of an actor *prior to* the shock will affect the extent to which the actor feels the need to make changes to their self-presentation.

Existing theories that link organizational status with actor behavior rest on several assumptions. One of these assumptions is the perceived sense of security that comes with a status position (Berkowitz and Macaulay 1961, Bowers and Prato 2018). Theory on middle-status conformity, for example, requires high-status actors to feel secure in their position before they feel free to deviate (Phillips and Zuckerman 2001, Durand and Kremp 2016). Applying this to our setting, we can expect that restaurants included in the Michelin Guide had different prior standing based on evaluations from prominent local critics. Michelin inspectors are undoubtedly the most prominent evaluators in the restaurant industry (Ferguson 2008), and they were clearly perceived as such when Michelin entered in Washington, DC (see Methods for a description). Yet, local critics from *The Washington Post* and *Washingtonian* magazine, among others, had been issuing reviews and ratings that arguably contributed to the standing of DC restaurants long before Michelin came to town. We would expect organizations that enjoyed high standing prior to a positive status shock to benefit from a heightened sense of security, in turn, receiving a positive status shock as an affirmation of an existing standing rather than as a change requiring adaptation. Thus, we predict that, in line with prior work, these organizations will feel less pressure to

mark their newly acquired position (Kim and Jensen 2011, Durand and Kremp 2016) and will be less likely to modify their self-presentation:

Hypothesis 2. *Organizations with high standing prior to a positive status shock will be less likely to modify their self-presentation in response to that shock.*

Methods
Setting and Data

We test our theory in the context of fine dining, a popular context of enquiry for organization studies (Rao et al. 2003, 2005; Demetry 2013; Di Stefano et al. 2014; Kovács and Johnson 2014; Di Stefano et al. 2015). On May 31, 2016, Michael Ellis, director of the Michelin Guide, announced that the first edition of the Washington, DC, Michelin Guide would be published in the fall of that year.[4] According to Michelin, the new Guide would "put the city more firmly on the world stage of great gastronomic destinations." Press interviews released by prominent chefs, and our own interviews with food critics and restaurant managers in the weeks following the announcement, substantially confirmed Michelin's expectations.[5] "I expect it will change consumers' expectations (about the culinary scene in DC); the Michelin Guide is so highly revered" was the first comment we received from the owner of a midrange restaurant in downtown DC. Another informant explained, "When a new review (or award) comes out, we tend to have an upsurge of people who are dining with us because of that, and so of course, we respect that they have a particular expectation." Similarly, the manager of another restaurant commented, "It is a significant standard for dining and so for DC to be included for the first time is a big deal." With the Guide's publication on October 13, 2016, Washington, DC, became only the fourth U.S. city after New York, San Francisco, and Chicago to have a Michelin Guide. The publication was clearly expected to elevate the status of the city's dining scene, which, at the time, suffered from "an outdated reputation of offering only fusty steakhouses."[6]

Only 106 of the city's restaurants were ultimately treated by inclusion in the Michelin Guide, with 12 being awarded a coveted Michelin star. The release of the Guide drew a clear line between restaurants that were included in the Guide and those that were not included, dividing a field of potential contenders that would have previously appeared similar based on factors such as local ratings, price point, and cuisine style. We will refer to this second group of restaurants as those that were "at risk" of making it to the Guide, but were, in fact, excluded by Michelin inspectors. Focusing our attention only on restaurants in the DC area, however, may not suffice, because, to some extent, the entire city was treated by Michelin's entry.

To mitigate this threat to identification, we created a matched sample of restaurants in a city that was comparable in geography, size, and dining scene, but in which the Michelin Guide was not present. We explain our empirical strategy next.

Empirical Strategy

Given our interest in studying the effects of Michelin's entry on the behavior of restaurants included in the Guide, our empirical strategy relies on a difference-in-differences (DID) framework, in which we compare treated restaurants in the Guide with two meaningful control groups: (1) restaurants *within* DC that were at risk of entering and (2) restaurants *outside* DC that were located in a comparable city (Boston) where Michelin did not enter.[7] The rationale behind the use of two control groups is that arguably all DC restaurants were treated by the entry of Michelin. (That is, it could be said that restaurants at risk of entering were treated with exclusion from the Guide.) Also, we cannot exclude contamination effects due to competition. The use of the second control group allows us to more precisely link changes in restaurants' behavior to the status shock they experienced. For our analyses, we build on the classic DID estimator (Wooldridge 2010):

$$Y_{it} = \beta_0 + \beta_1 * d_t^{Post} + \beta_2 * d_i^{Treat} + \boldsymbol{\beta_3} * \boldsymbol{d_t^{Post}} * \boldsymbol{d_i^{Treat}}$$
$$+ \alpha_i + \gamma_t + u_{it}, \tag{1}$$

in which Y_{it} is our dependent variable for restaurant i in year t, d_t^{Post} is a dummy variable indicating whether the observation occurs post-publication or pre-publication of the Guide, and d_i^{Treat} is a dummy variable indicating whether the restaurant is in the treated or control group. The term of interest in the above equation is the interaction between the two dummies for post-publication and treated (in bold). The coefficient (β_3) captures how restaurants in the treated group reacted to Michelin's entry compared with restaurants in the control group.

Control Group Within DC.

Our first control group consists of DC restaurants that were excluded from the first edition of the Michelin Guide, despite being similar on a number of visible parameters to those that were included. To build this control group, we started with more than 700 restaurants that were excluded from the Guide and for which we had complete information (name, location, cuisine type, price range, ratings, reviews, and menus) before and after Michelin's entry. Next, we analyzed common features of restaurants included in the Guide and decided to keep only restaurants with the following features: (1) a Yelp rating equal to or above the lowest of all Yelp ratings of

restaurants included in the Guide; (2) a price range equal to or above the restaurant with the lowest price range in the Guide; and (3) a cuisine type common to at least two other restaurants in the Guide. The resulting list of 143 restaurants composes our first control group.

It is important to highlight that our objective with this control group was not to create an exact match to the 83 treated restaurants.[8] Although an exact match would have been empirically ideal, it would not have made sense from a practical standpoint, given that, with few exceptions,[9] all restaurants usually considered the best in town were actually included in the Guide. We, hence, opted for a more inclusive list that represented the set of all other DC restaurants meeting the minimum requirements for inclusion in the Guide.

Control Group Outside DC.

We built our second control group by identifying restaurants located in a city that was comparable to DC in terms of geography and dining scene, but that was not covered by Michelin. The city of Boston proved to be the ideal candidate.[10] We identified control restaurants through a matched case-control approach based on the following set of pre-Guide covariates: (1) cuisine type, (2) price level, and (3) average Yelp rating. For each treated restaurant, we identified all exact matches based on cuisine type and price. This resulted in a set of potential matches, among which we picked the one whose average Yelp rating pre-Guide was within a ±0.5 range of the rating of the original restaurant. If this procedure still resulted in more than one match, we randomly selected one. We report the complete list of restaurants in our treated and control groups in Online Appendix 1, while Figure 2 shows their exact location on the map.

As shown in Table 1, matching between the treated group and the control group outside DC (control 2) was very effective on all relevant dimensions, with the only difference being in restaurant age (higher for control). On the other hand, the comparison between the treated group and the control group within DC (control 1) revealed significant differences in the average Yelp rating and price level (lower for control). This finding can be explained by the fact that control 1 is not an exact match, but was, rather, designed to keep track of the behavior of all restaurants potentially at risk of inclusion in the Guide. In light of this finding, we suggest extreme caution in formulating conclusions that are not supported by a comparison with control 2.

Note that our identification strategy rests on the idea that some restaurants in Washington, DC, were treated with their inclusion in the Guide, whereas others—either in the same city (control 1) or in a

Figure 2. (Color online) Location of Treated and Control Restaurants
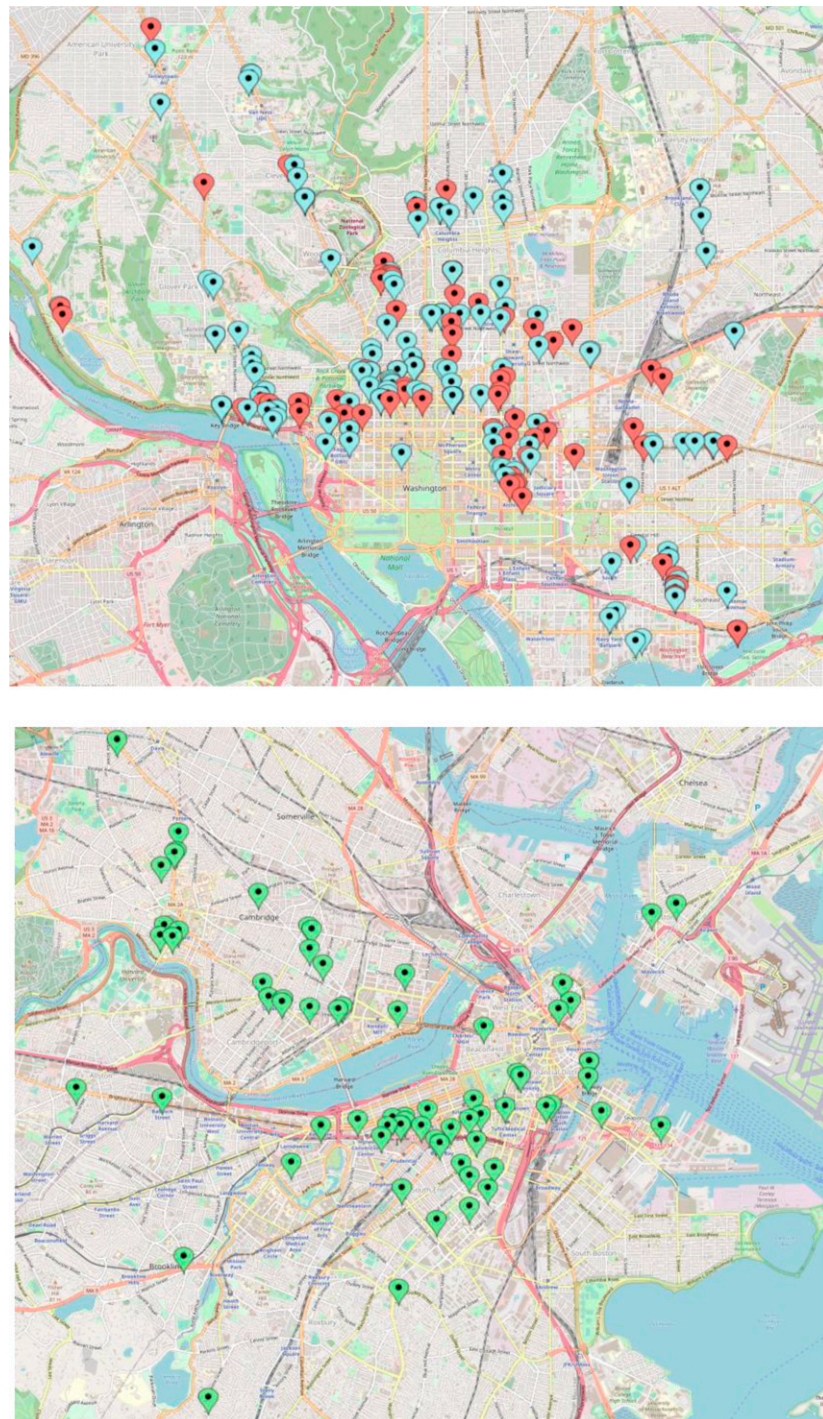
Notes. The upper map shows the location of restaurants in Washington, DC, with pins identifying both treated restaurants (color red online) and restaurants in control 1 (color blue online). The lower map shows the location of restaurants in Boston, with pins identifying restaurants in control 2. Two restaurants in control 1 (nos. 78 and 83; see Online Appendix 1) were included, despite being located outside Washington, DC, because of their frequent inclusion in local dining guides. These two restaurants are not visualized in the map due to scale constraints.

comparable city (control 2)—were not, and, hence, the control groups can act as a counterfactual to what we observe happening in the treatment group. For this approach to be credible, a series of conditions need to be satisfied, notably, the parallel trend assumption, as well as the absence of a contemporaneous event differentially affecting some restaurants or cities during our period of study. We will present evidence to check

Table 1. Summary Statistics for Treated and Control Samples

Variable	Treated		Control 1			Control 2		
	Mean	SD	Mean	SD	*p*-value	Mean	SD	*p*-value
Yelp rating (1–5)	3.948	0.032	3.661	0.027	0.000	3.924	0.035	0.608
Yelp price level (1–4)	2.614	0.074	2.147	0.031	0.000	2.639	0.074	0.819
Restaurant age (years)	7.157	0.422	7.825	0.307	0.196	8.711	0.437	0.012
Yelp reviewers experience	115.139	6.538	121.157	9.017	0.638	102.831	6.251	0.175
Local Yelp reviewers (%)	0.350	0.015	0.376	0.014	0.238	0.409	0.034	0.120

Notes. The figures in the table are from 2016, before the publication of the first edition of the Michelin Guide for Washington, DC. Yelp figures are computed on the previous 12 months. Yelp rating and Yelp price level were among the variables used to match restaurants. We report information about restaurant age, reviewer experience (measured as number of reviews published on Yelp), and proportion of local reviewers to compare across a broader range of characteristics.

for these crucial model assumptions after discussing our main results.

Variables and Measures

Our data collection began immediately after the announcement of the Guide's first Washington, DC, edition (May 31, 2016). In the time frame between the announcement and the actual publication of the Guide (October 13, 2016), while still ignorant about which restaurants would be included in the Guide, we collected information about restaurants in Washington, DC, and Boston from Yelp. Information for each restaurant included name, location, cuisine type, price range, ratings, reviews, and menus, when available. When menus were not available on Yelp, we searched restaurant websites. This procedure allowed us to compile a list of more than 1,500 restaurants located in Washington, DC, and Boston. Between June and September 2017 (approximately one year after the first data collection and before the publication of the second edition of the Guide), we conducted a new data collection on Yelp (and on restaurant websites when menus were not available through Yelp). We use the shock triggered by Michelin's entry to examine the behavior of restaurants that were included in the Guide vis-à-vis the two control groups, which we built following the procedure described in the previous section. We describe all variables and measures in Table 2 and report descriptive statistics and correlations in Table 3.

Our main independent variable is the interaction between two dummies, namely, *postpublication* (equal to one after the publication of the Guide and zero before) and *treated* (equal to one for treated restaurants and zero for control). We captured restaurants' reactions by looking at how restaurants modified attributes of their dinner menus. In order to determine which changes a restaurant would implement, we built on previous work in the areas of linguistics, taste, and culture by looking at the evolution of restaurant menus in the United States (Zwicky and Zwicky 1980, Liberman 2004, Lakoff 2006, Jurafsky

2014, Jurafsky et al. 2016). The study by Jurafsky et al. (2016), in particular, offers key insights on the characteristics of restaurant menus. The authors carefully analyzed the menus of 6,511 restaurants in seven U.S. cities (including Washington, DC) and the 591,980 dishes included in those menus. The results of this study, summarized in their James Beard finalist book and featured, among others, by *The New York Times*, *The Boston Globe*, and *The Financial Times*, offer a rich overview of the distinctive features and trends of restaurant menus. We leveraged this work to identify six relevant attributes in the menus in our sample.

The first two attributes we examined are associated with how menus look from a *descriptive* standpoint, in terms of the number of words used to describe menu items and explicit references to portion sizes. Prior work suggests that high-status restaurants tend to offer a high level of detail in their menus to convey a narrative that goes beyond a simple list of ingredients (as exemplified by the case displayed in Figure 1). We use *description length* to capture the level of detail provided in menus. The variable is measured as the number of words used in the menu, divided by number of dishes in the menu, to facilitate comparison across menus.[11] Moreover, according to prior work, high- and low-status restaurants differ from one another in that the latter are more concerned with giving an impression of abundance and, therefore, highlight the size of portions. Our second variable, *size description*, is a direct translation of Bourdieu's (1984) definition of plenty. In particular, we look at the number of words (divided by the number of dishes) used to characterize the size of portions, using the list compiled by Jurafsky (2014).

The next two attributes we examined are associated with how *authentic* menus look, as exemplified by the emphasis on mastery of culinary skills and the origin of ingredients. Prior work suggests that high-status restaurants tend to differ from low-status ones in terms of quality of raw materials and level of culinary skills used in the preparation of dishes (Rao et al. 2005). Our first variable, *craft authenticity*, captures the

Table 2. Variables and Measures

Variable	Measure	Operationalization
Independent variables		
Postpublication	Year of publication of first edition of the Michelin Guide for Washington, DC	Dummy (0, 1)
Treated	Restaurant included in first edition of the Michelin Guide for Washington, DC	Dummy (0, 1)
Dependent variables		
Description length	Length of dish description	Total number of words, divided by total number of dishes
Size description	Frequency of mentions to portion size (*big, bigger, biggest, bottomless, bountiful, colossal, endless, enormous, generous, generously, gigantic, ginormous, heaped, heaping, hearty, hefty, huge, largest, loaded, loads, lots, mammoth, massive, mega, oversized, overstuffed, piled, plentiful, plenty, refills, unlimited, and more, king sized, Texas sized, thick cut, tons of, with more*)	Number of related words, divided by total number of dishes
Craft authenticity	Frequency of mentions to cooking techniques (*sauté, fricassée, sous-vide, low-temperature, flambé, caramelizée, nappage, pasteurized, gelée, purée, confit, consommé, simmered, smothered, braised*)	Number of related words, divided by total number of dishes
Natural authenticity	Frequency of mentions to food origin (*natural, organic, farmhouse, wild caught, grass fed, local, market, farmed, free range, heirloom, ranch*)	Number of related words, divided by total number of dishes
Average price	Average price for a main dish (explicitly listed under main dishes or equivalent depending on cuisine type)	Average price of main dishes in the menu
Minimum price	Minimum price for a main dish (explicitly listed under main dishes or equivalent depending on cuisine type)	Minimum price of main dishes in the menu
Moderating variable		
Prior standing	Restaurant appears in any of the following in 2015 and/or 2016: (a) *Washington Post* Dining Guide; (b) 100 Very Best by the *Washingtonian*; (c) Rammy awards; or (d) James Beard Awards (national and mid-Atlantic region)	Dummy (0, 1)

Note. The table lists all variables employed in the analysis with their operationalization.

mastery of skills (Carroll and Wheaton 2009) by looking at the number of words (divided by the number of dishes) related to cooking techniques, using the list compiled by "The Professional Chef" from The Culinary Institute of America, one of the classic kitchen references for top U.S. chefs. Our second variable, *natural authenticity*, focuses on raw materials (Lakoff 2006) by measuring the number of words (divided by number of dishes) related to the provenance and origin of food, using the list compiled by Jurafsky (2014).[12]

The last two attributes we examined are associated with the *value* conveyed by menus, as signaled by prices. Prior work suggests that high-status actors can command higher prices (e.g., Podolny 1993 and Sands 2020) and use pricing to signal belonging (Askin and Bothner 2016).[13] To examine the pricing strategies of restaurants newly included in the Michelin Guide, while reducing the complexity associated with differences in menu structure and dish types across cuisines (e.g., a main course in a Korean restaurant corresponds to different menu entries, such as bibimbap, stew, grill, etc.; in an Italian restaurant, similarly, you have a first and/or a second course after the appetizer), we focused on main dishes only. Our first variable, *average price*, is the average of all dish prices

Table 3. Descriptive Statistics and Correlations

Variable	Mean	SD	Min	Max	1	2	3	4	5	6	7
1. *Description length*	13.464	4.940	3.320	34.890	1.000						
2. *Size description*	0.028	0.044	0.000	0.300	0.255	1.000					
3. *Craft authenticity*	0.086	0.094	0.000	0.600	0.306	−0.025	1.000				
4. *Natural authenticity*	0.057	0.088	0.000	0.550	0.136	0.078	0.172	1.000			
5. *Average price*	19.582	7.008	4.400	48.818	−0.115	0.095	0.131	0.321	1.000		
6. *Minimum price*	15.015	5.649	3.000	42.000	−0.095	0.084	0.119	0.305	0.905	1.000	
7. *Prior standing*	0.146	0.353	0.000	1.000	−0.111	0.001	−0.101	0.031	0.014	0.020	1.000

Note. The figures in the table are from 2016, before the publication of the first edition of the Michelin Guide for Washington, DC.

listed as "main dishes" (or equivalent) in the menu, where changes could potentially imply changes in the restaurant's operations (e.g., a newly awarded restaurant introducing more expensive ingredients). Our second variable, *minimum price*, is the minimum of all dish prices in the main dishes (or equivalent) section of the menu, where we would expect changes to mostly capture signaling behaviors (e.g., the newly awarded restaurant raising the bar to keep pace with the elite). Because some menus in our sample did not include price information, we include variables related to value attributes for 71 of the 83 treated restaurants (and their corresponding matches in control 2) and for 133 of the 143 restaurants in control 1.

Finally, we measured our moderating variable, *prior standing*, based on rankings and awards provided by the most prominent intermediaries before Michelin entered. Based on our understanding of the dining scene in the DC area, we identified three prominent local rankings and awards (*The Washington Post* Dining Guide, the *Washingtonian* 100 Very Best, and the *Rammy* awards by the Restaurant Association Metropolitan Washington). We also included the James Beard Awards presented by the eponymous foundation to recognize culinary professionals across the United States. A restaurant in our treated group received a *prior standing* score of one if it appeared at least once in any of these rankings in 2015 or 2016, and zero otherwise. This allowed us to identify a subgroup of 45 treated restaurants with high prior standing, while the remaining 38 had low prior standing.

Results
The Effects of Michelin's Entry on Restaurant Menus

We start by analyzing the main effect of the shock triggered by Michelin's entry on the behavior of restaurants, as captured by changes in their menus. To this end, we first ran our DID models to estimate the overall effect, then dove deeper to understand the sources of these changes both at the aggregate level and at the individual restaurant level. Table 4 reports the results of an ordinary least squares (OLS) regression with restaurant fixed effects and standard errors clustered at the restaurant level. Our variable of interest is the interaction term between *postpublication* and *treated*. We ran the analysis on all the restaurants that were included in the Guide and then distinguished between restaurants that were or were not awarded Michelin stars. Stars are an additional recognition awarded by Michelin to restaurants that offer a particularly good cuisine and are considered one of the top achievements in the career of a chef (Di Stefano et al. 2015). Because only eight of the 83 restaurants in our data set are starred, we do not report the results of a

regression on such a small sample; we focus instead on the results for non-starred restaurants only. Following a middle-status conformity argument (Phillips and Zuckerman 2001) applied to the context of a rarefied top, one could argue that, mutatis mutandis, non-starred restaurants represent middle-status organizations that can still improve their status position. In this case, we should observe that these restaurants have a higher propensity to conform compared with the broader population, which includes the starred restaurants.

As shown in Table 4, after Michelin's entry, we observe a significant positive effect on the length of dish descriptions ($\beta = 1.404$, $p = 0.005$ for control 1; and $\beta = 1.404$, $p = 0.018$ for control 2), emphasis on craft authenticity ($\beta = 0.021$, $p = 0.013$; and $\beta = 0.019$, $p = 0.043$), and minimum prices charged for main dishes ($\beta = 0.777$, $p = 0.024$; and $\beta = 0.779$, $p = 0.059$) compared with restaurants in both control groups and independent of whether restaurants were awarded stars. These results are consistent with Hypothesis 1 and the idea that organizations experiencing a positive status shock will modify their self-presentation to conform with expectations associated with their newly acquired status. Interestingly, in the case of non-starred restaurants, we also observe a significant increase in emphasis on the origin of ingredients ($\beta = 0.016$, $p = 0.033$; and $\beta = 0.011$, $p = 0.100$) and a significant decrease in the emphasis on portion sizes (only compared with control 2: $\beta = -0.009$, $p = 0.037$). These results are consistent with the idea that restaurants that were included in the Michelin Guide, but did not make it to the top, were particularly insecure in their position and, hence, felt the need to better mark their newly acquired status.[14]

How Big Are the Effects? To better gauge the economic significance of these results, in Table 5, we compute effect sizes and decompose the overall DID effect into (a) the effect that Michelin's entry had on treated restaurants and (b) the effect that Michelin's entry had on control restaurants. The table produces a few interesting observations. First, across both control groups (control 1 and control 2) and both samples (all restaurants and non-starred restaurants only), Michelin's entry increased the difference between treated and control group restaurants by 10%–12% for the length of dish descriptions and 15%–24% for mentions of craft authenticity. Within the subgroup of non-starred restaurant, we also observe an increase of 18%–27% in mentions of natural authenticity and a 38% decrease in mentions of portion sizes, when comparing treated restaurants to those in control 2. As for prices, we detect a significant 5% increase in the difference in minimum prices between treated versus control restaurants in the entire sample, but not in the non-starred subgroup,

Table 4. Changes in Menu Features, Main Results

| | All restaurants | | | | Non-starred restaurants | | | |
| | Control 1 | | Control 2 | | Control 1 | | Control 2 | |
Variable	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Description length								
Postpublication	−0.877***	0.277	−0.877**	0.428	−0.877***	0.277	−0.751	0.457
Postpublication × treated	**1.404***	**0.491**	**1.404**	**0.590**	**1.613***	**0.510**	**1.487**	**0.627**
Constant	13.605***	0.115	12.982***	0.147	13.517***	0.117	12.753***	0.157
N	452		332		436		300	
F	5.853		2.947		6.486		2.825	
Adjusted R^2	0.043		0.030		0.051		0.030	
Size description								
Postpublication	0.007	0.007	0.001	0.003	0.007	0.007	0.006*	0.003
Postpublication × treated	−0.011	0.008	−0.006	0.005	−0.011	0.008	**−0.009**	**0.004**
Constant	0.028***	0.002	0.027***	0.001	0.027***	0.002	0.024***	0.001
N	452		332		436		300	
F	1.204		0.77		1.183		2.393	
Adjusted R^2	0.004		0.004		0.003		0.024	
Craft authenticity								
Postpublication	−0.008**	0.004	−0.007	0.006	−0.008**	0.004	−0.003	0.005
Postpublication × treated	**0.021**	**0.008**	**0.019**	**0.010**	**0.018**	**0.007**	**0.013***	**0.008**
Constant	0.085***	0.002	0.088***	0.002	0.086***	0.002	0.0087***	0.002
N	452		332		436		300	
F	3.482		2.142		3.179		1.481	
Adjusted R^2	0.027		0.021		0.024		0.016	
Natural authenticity								
Postpublication	−0.002	0.004	−0.002	0.005	−0.002	0.004	0.002	0.003
Postpublication × treated	0.012	0.007	0.012	0.008	**0.016**	**0.007**	**0.011***	**0.007**
Constant	0.053***	0.002	0.068***	0.002	0.051***	0.002	0.059***	0.002
N	452		332		436		300	
F	1.497		1.458		2.658		2.711	
Adjusted R^2	0.010		0.014		0.021		0.044	
Average price								
Postpublication	0.385**	0.177	0.495***	0.185	0.385**	0.177	0.552***	0.168
Postpublication × treated	0.482	0.294	0.372	0.312	0.149	0.256	−0.018	0.250
Constant	18.753***	0.071	21.190***	0.075	18.702***	0.067	21.001***	0.0625
N	408		284		394		256	
F	9.185		10.350		6.553		9.549	
Adjusted R^2	0.077		0.131		0.048		0.123	
Minimum price								
Postpublication	0.249*	0.150	0.246	0.271	0.249*	0.150	0.383	0.244
Postpublication × treated	**0.777**	**0.342**	**0.779***	**0.410**	0.326	0.293	0.192	0.351
Constant	14.483***	0.072	16.050***	0.102	14.493***	0.065	16.021***	0.088
N	408		284		394		256	
F	6.955		5.975		3.974		3.817	
Adjusted R^2	0.083		0.080		0.038		0.050	

Notes. The table reports results of an OLS regression with restaurant fixed effects and standard errors clustered at the restaurant level. The analyses are run on all the restaurants that were included in the Guide (all restaurants) and then on the subsample of restaurants that were not awarded Michelin stars (non-starred restaurants). Control 1 includes restaurants at risk of inclusion from Washington, DC; control 2 includes matched restaurants in Boston. Coef, coefficient.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

thus suggesting that the increase is driven by starred restaurants becoming less accessible.

The effects for *description length* and *minimum price* are easy to interpret. The former tells us how many words, on average, are used to describe a dish on the menu; the latter tells us how many dollars are charged for a main dish, on average or at a minimum. The changes related to *size description*, *craft authenticity*, and *natural authenticity*, on the other hand, are more

difficult to put in context, as they refer to how many words related to portion sizes, cooking techniques, or ingredient provenance are used, on average, for describing a dish. To help with the interpretation, it may be useful to consider that these words are not very frequent: In 2016, restaurants in our sample used at most approximately three words related to *size description*, approximately five related to *craft authenticity*, and approximately three related to *natural authenticity*. This

Table 5. Changes in Menu Features, Effect Sizes

Variable	All restaurants				Non-starred restaurants			
	Mean 2016	Mean 2017	Diff, %	Effect size, %	Mean 2016	Mean 2017	Diff, %	Effect size, %
Description length								
Treated	12.885	13.413	4		12.552	13.288	6	
Control 1	14.023	13.147	−6	**10**	14.023	13.147	−6	**12**
Control 2	13.078	12.201	−7	**11**	12.954	12.203	−6	**12**
Size description								
Treated	0.027	0.022	−16		0.023	0.020	−16	
Control 1	0.029	0.036	25	41	0.029	0.036	25	41
Control 2	0.027	0.029	6	21	0.025	0.031	22	**38**
Craft authenticity								
Treated	0.087	0.100	14		0.089	0.099	11	
Control 1	0.084	0.075	−10	**24**	0.084	0.075	−10	**21**
Control 2	0.088	0.081	−8	**22**	0.085	0.081	−4	**15**
Natural authenticity								
Treated	0.068	0.078	15		0.063	0.077	22	
Control 1	0.045	0.043	−5	20	0.045	0.043	−5	**27**
Control 2	0.068	0.066	−3	18	0.055	0.057	4	**18**
Average price								
Treated	20.405	21.272	4		20.370	20.830	2	
Control 1	17.871	18.256	2	2	17.871	18.256	2	0
Control 2	21.971	22.466	2	2	21.572	22.124	3	0
Minimum price								
Treated	15.600	16.626	7		15.750	16.220	3	
Control 1	13.887	14.135	2	5	13.887	14.135	2	1
Control 2	16.500	16.747	1	5	16.290	16.672	2	1

Notes. Values for all variables are expressed in words per dish, except in the case of price variables, expressed in USD per dish. The analyses are run on all the restaurants that were included in the Guide (all restaurants) and then on the subsample of restaurants that were not awarded Michelin stars (non-starred restaurants). Control 1 includes restaurants at risk of inclusion from Washington, DC; control 2 includes matched restaurants in Boston. Figures in bold correspond to significant effects as per Table 4. Diff, difference.

implies that, when we talk of a 20%–40% variation, we are talking, at best, about a one-word change in the difference between two menus. This is a small, but noticeable, effect: adding even a single word such as "generous," "hearty," "sous-vide," "sauté," "organic," or "grass-fed" to a 12-word description (on average) has been shown to dramatically affect customers' perceptions (Wansink et al. 2002).[15] A second interesting observation that emerges from looking at Table 5 is that the effects we detect with our DID estimator come from treated restaurants moving against trends that are common to control restaurants across both control groups. This is the case for all variables except *minimum price*, where the trends we observe for treated restaurants are in line with those we observe for control restaurants, only stronger. We will come back to this evidence when discussing the assumptions behind our DID models.

Where Do the Effects Come From? Once we established that Michelin's entry had a significant effect on the difference between treated and control restaurants and assessed the size of this effect, we next explored the extent to which the patterns we identify are caused by the majority of restaurants in our sample moving in this

direction or a few individual restaurants driving the effect. To this end: (a) We plotted all restaurants on scattered boxplots to examine how treated restaurants changed pre/post as compared with their matched counterparts; (b) we graphed the empirical Cumulative Distribution Function (eCDF) of the pre/post difference for treated and control restaurants; and (c) we plotted the pre/post behavior of individual restaurants using lollipop plots. Figure 3 reports results related to (a) and (b) for the significant effects detected in Table 4 for all restaurants (*description length*, *craft authenticity*, and *minimum price*), with the rest of the analyses being reported in Online Appendix 3. Graphs in Figure 3 show that most restaurants are moving in line with the significant effects we previously identified. For *description length*, we observe an upward shift in the entire distribution and a decrease in the number of outliers, with opposite trends for control restaurants. For *craft authenticity* and *minimum price*, the interquartile range shifts toward higher values, and the maximum goes up, with opposite (*craft authenticity*) or weaker (*minimum price*) trends for control restaurants. The overall patterns in the eCDF are in line with our expectations, despite few negligible areas of overlap between treated and control restaurants after the Guide's publication.

The Moderating Role of Prior Standing

We next studied the influence of prior standing on our main effect. To this end, we ran a split-sample analysis comparing treated restaurants, with high versus low prior standing, to all 143 restaurants in control 1 and to all 83 restaurants in control 2.[16] We then conducted post-estimation tests for the equality of coefficients across the two specifications (i.e., low and high prior standing), while clustering the standard errors at the restaurant level. Remember that our main results, as per Table 4, show that, compared with control restaurants, restaurants included in the Guide experienced a significant increase in *description length*, *craft authenticity*, and *minimum price*. Results from our split-sample analysis, shown in Table 6, seem to suggest that restaurants mark their newly acquired status positions in different ways, depending on their prior standing. In particular, restaurants with low prior standing are somewhat more likely to emphasize descriptive attributes: They exhibit higher levels of *description length* (control 1: $\beta = 1.764$, $p = 0.010$; control 2: $\beta = 1.764$, $p = 0.021$), even if the difference with high-prior-standing restaurants is not significant (control 1: $p = 0.243$; control 2: $p = 0.416$). Restaurants with high prior standing, on the other hand, are somewhat more likely to emphasize authenticity attributes: They exhibit higher levels of *craft authenticity* (control 1: $\beta = 0.029$, $p = 0.016$; control 2: $\beta = 0.028$, $p = 0.033$), even if the difference with low-prior-standing restaurants is, again, not significant (control 1: $p = 0.222$; control 2: $p = 0.172$). Restaurants with high prior standing are also more likely to emphasize value attributes: Their *minimum price* is higher (control 1: $\beta = 1.317$, $p = 0.005$; control 2: $\beta = 1.319$, $p = 0.013$), and significantly more so compared with restaurants with low prior standing (control 1: $p = 0.049$; control 2: $p = 0.049$).[17]

In Table 7, we compute effect sizes and decompose the overall DID effect into the effect that Michelin's entry had on treated restaurants with high prior standing, treated restaurants with low prior standing, and control restaurants. As shown in the table, the size of the effect of Michelin's entry is larger for low-prior-standing restaurants in the case of *description length* (13% versus 8%–9% for high prior standing) and for high-prior-standing restaurants in the case of *craft authenticity* (41%–43% versus 10%–12% for low prior standing) and *minimum price* (8%–9% versus 1% for low prior standing). Overall, we find some support for the intuition that prior standing matters in how organizations react to positive status shocks. However, contrary to our expectations, we find that prior standing may actually reinforce the need to modify some self-presentation attributes. In particular, our results suggest that restaurants with high prior standing focused on attributes aimed at signaling authenticity and value, whereas restaurants with low prior standing mostly acted on descriptive attributes.

Robustness Checks for Model Assumptions

Our identification strategy rests on the idea that some restaurants in Washington, DC, were treated with inclusion in the Guide, whereas others—either in the same city (control 1) or in Boston (control 2)—were not and, as such, can act as a counterfactual to what we observe happening in the treatment group. For this approach to be credible, a series of conditions need to be satisfied.

Contemporaneous Events. A first important concern is whether another, contemporaneous event might have differentially affected some restaurants or cities during our study period. Given our empirical strategy of using two controls, one from Washington, DC, and one from Boston, and given that the comparison with both control groups yields similar results, for a contemporaneous event to drive the results, we would need to have either (i) a contemporaneous event affecting only the treated group; or (ii) a contemporaneous event affecting the two control groups jointly. Indeed, if an event were affecting only restaurants in Washington, DC, the control group from Boston should enable us to circumvent the problem, and vice versa. In other words, one could argue that if the comparison with both control groups yields similar results, these results are not an artifact of the control we use, but are more likely to be the product of an actual difference between treated and control restaurants. This is the reason why, despite our strong preference for using the control group from Boston—a city not directly affected by Michelin's entry—we show results from both controls.

Clearly, one may argue that Boston was also affected by the publication of the Guide in ways that accentuate the effects we observe. Our understanding, however, is that Michelin's entry in Washington was received with a certain degree of annoyance by the Boston culinary industry,[18] given the similarity between the culinary scenes of the two cities. We, hence, tried to understand whether the trends we observe among control restaurants in Washington, DC, and Boston are in line with broader industry trends. We address this question in Online Appendix 4, where we engage in a detailed examination of trends related to our outcome variables at the national level. Results from this qualitative examination, while purely descriptive in nature, are consistent with what we observe systematically in Table 5: an increased emphasis on leaner, shorter menus, with simpler dish descriptions. We discuss how the issue of portion sizes has been attracting a lot of attention, in particular, among casual-dining operators; that restaurants have tried to

Figure 3. (Color online) A Visual Inspection of Differences Across Treated and Control Restaurants
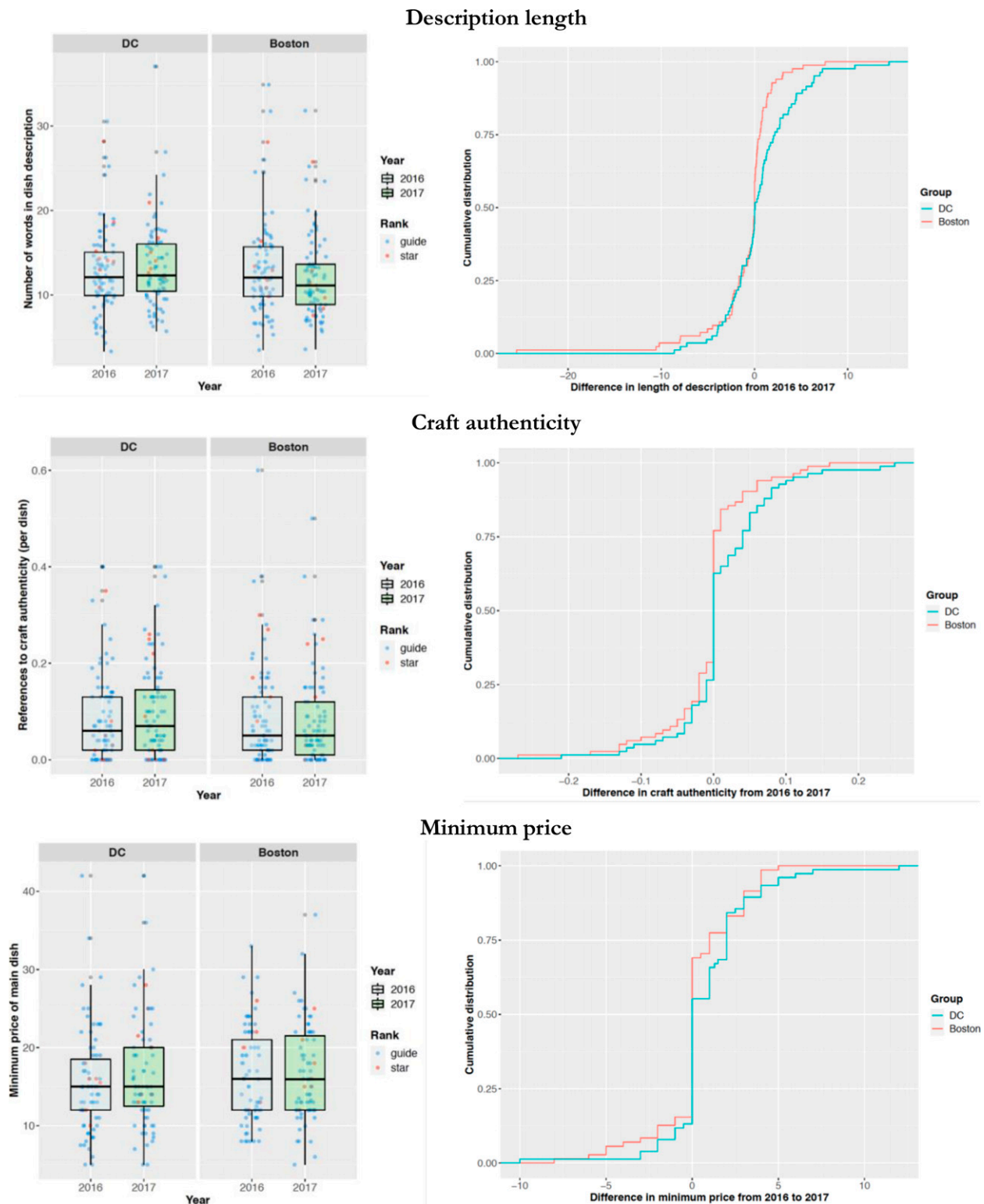
Notes. The figure shows (a) scattered boxplots (panels on the right); and (b) empirical Cumulative Distribution Function of the pre/post difference (panels on the left). Online Appendix 3 includes results for all six outcome variables for all restaurants and non-starred restaurants only.

address the related health concerns, but faced resistance among customers; and that in the years of our study, there seems to be a decline in the attention chefs paid to related topics. Our examination of the reports issued annually by the National Restaurant Association, which every year surveys around 1,300

Table 6. Changes in Menu Features, Prior Standing as a Moderator

	Control 1				Control 2			
	Prior standing				Prior standing			
	High		Low		High		Low	
Variable	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Description length								
Postpublication	−0.877***	0.277	−0.877***	0.277	−0.877**	0.428	−0.877**	0.428
Postpublication × treated	**1.101***	**0.599**	**1.764***	**0.679**	1.101	0.683	**1.764***	**0.755**
Constant	13.570***	0.123	13.970***	0.127	12.748***	0.167	13.295***	0.176
N	376		362		256		242	
F	5.087		6.020		2.185		3.112	
Adjusted R^2	0.045		0.057		0.028		0.042	
Size description								
Postpublication	0.007	0.007	0.007	0.007	0.001	0.003	0.001	0.003
Postpublication × treated	−0.013	0.009	−0.010	0.009	−0.007	0.006	−0.004	0.006
Constant	0.028***	0.003	0.028***	0.003	0.027***	0.001	0.026***	0.001
N	376		362		256		242	
F	1.102		0.664		0.667		0.232	
Adjusted R^2	0.003		0.002		0.004		0.004	
Craft authenticity								
Postpublication	−0.008**	0.004	−0.008**	0.004	−0.007	0.006	−0.007	0.006
Postpublication × treated	**0.029***	**0.012**	0.011	0.009	**0.028***	**0.013**	0.009	0.010
Constant	0.079***	0.002	0.090***	0.002	0.079***	0.003	0.097***	0.002
N	376		362		256		242	
F	3.667		1.997		2.325		0.663	
Adjusted R^2	0.041		0.017		0.035		0.004	
Natural authenticity								
Postpublication	−0.002	0.004	−0.002	0.004	−0.002	0.005	−0.002	0.005
Postpublication × treated	0.012	0.009	0.012	0.011	0.012	0.009	0.012	0.012
Constant	0.049***	0.002	0.051***	0.002	0.067***	0.002	0.070***	0.002
N	376		362		256		242	
F	1.181		0.594		1.141		0.557	
Adjusted R^2	0.006		0.003		0.010		0.004	
Average price								
Postpublication	0.385**	0.177	0.385**	0.177	0.495***	0.186	0.495***	0.186
Postpublication × treated	**0.915***	**0.415**	−0.017	0.293	**0.805***	**0.420**	−0.127	0.299
Constant	18.300***	0.080	18.513***	0.075	21.213***	0.089	21.695***	0.074
N	342		332		218		208	
F	8.358		3.611		9.500		4.781	
Adjusted R^2	0.096		0.033		0.172		0.078	
Minimum price								
Postpublication	0.249	0.150	0.249	0.150	0.246	0.272	0.246	0.272
Postpublication × treated	**1.317***	**0.467**	0.154	0.421	**1.319***	**0.521**	0.157	0.479
Constant	14.190***	0.076	14.307***	0.072	16.064***	0.118	16.343***	0.112
N	342		332		218		208	
F	7.624		1.892		6.627		0.933	
Adjusted R^2	0.125		0.018		0.123		0.008	

Notes. The table reports results of an OLS regression with restaurant fixed effects and standard errors clustered at the restaurant level. We split treated restaurants according to whether they had high or low prior standing and compare them to the 143 restaurants at risk of inclusion from Washington, DC (control 1), and the 83 matched restaurants in Boston (control 2). Coef, coefficient.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

professional chefs to ask them about trends they expect to observe for the following year, shows a decreased emphasis on trends that can be associated with craft and natural authenticity. Finally, with respect to prices, we look at the increase in prices witnessed by U.S. urban consumers (Consumer Price Index for all Urban consumers) between the fall of 2016 and the fall of 2017. Overall, this overview seems to indicate that restaurants in both control groups were moving in line with national and regional trends, whereas restaurants in the treatment group were actively counteracting or emphasizing those dynamics.

A remaining doubt one may have is whether treated restaurants were responding to another event that may have affected treated restaurants only. This seems implausible, given that restaurants in control 1

Table 7. Changes in Menu Features with Prior Standing as a Moderator, Effect Sizes

Variable	High prior standing				Low prior standing			
	Mean 2016	Mean 2017	Diff, %	Effect size, %	Mean 2016	Mean 2017	Diff, %	Effect size, %
Description length								
Treated	12.140	12.364	2		13.768	14.655	6	
Control 1	14.023	13.147	−6	**8**	14.023	13.147	−6	**13**
Control 2	13.078	12.201	−7	9	13.078	12.201	−7	**13**
Size description								
Treated	0.028	0.022	−20		0.025	0.022	−10	
Control 1	0.029	0.036	25	−45	0.029	0.036	25	−35
Control 2	0.027	0.029	6	−26	0.027	0.029	6	−16
Craft authenticity								
Treated	0.063	0.084	33		0.116	0.118	2	
Control 1	0.084	0.075	−10	**43**	0.084	0.075	−10	12
Control 2	0.088	0.081	−8	**41**	0.088	0.081	−8	10
Natural authenticity								
Treated	0.064	0.074	16		0.073	0.083	14	
Control 1	0.045	0.043	−5	21	0.045	0.043	−5	19
Control 2	0.068	0.066	−3	19	0.068	0.066	−3	17
Average price								
Treated	19.799	21.099	7		21.102	21.470	2	
Control 1	17.871	18.256	2	4	17.871	18.256	2	0
Control 2	21.971	22.466	2	4	21.971	22.466	2	−1
Minimum price								
Treated	15.250	16.816	10		16.004	16.407	3	
Control 1	13.887	14.135	2	**8**	13.887	14.135	2	1
Control 2	16.500	16.747	1	**9**	16.500	16.747	1	1

Notes. Values for all variables are expressed in words per dish, except in the case of price variables, expressed in USD per dish. We split treated restaurants according to whether they had high or low prior standing and compare them to the 143 restaurants at risk of inclusion from Washington, DC (control 1) and the 83 matched restaurants in Boston (control 2). Figures in bold correspond to significant effects as per Table 6. Diff, difference.

are similar to our treated restaurants for every aspect but inclusion in the Guide—hence, we find it improbable that another contemporaneous event, independent of Michelin's entry, would have affected only restaurants selected by Michelin. Still, we tried to qualitatively address this possibility by looking at other local rankings, in the attempt to understand whether there was any significant change in 2015 or 2016 that could have indicated a "targeted" additional shock to our treated restaurants. The analysis, reported in Online Appendix 4, is very descriptive, but shows a pattern of stability in other status rankings. This reassures us that there was no particular shakeout affecting the treated restaurants in the months preceding the Guide's publication.

Parallel Trends. A second relevant concern regards a critical assumption on which DID models rely—the parallel trend assumption—according to which the control group acts as a counterfactual by showing what would have happened to the treatment group had the treatment not been administered. From a qualitative standpoint, the results we discussed above suggest that our control restaurants were behaving in line with more general industry trends, whereas

treated restaurants were departing from those trends. The question, hence, becomes: How were treated restaurant behaving before Michelin announced it was coming to town? This brings us to a quantitative examination of the parallel trends assumption. The complication with our data is that, once we learned in May 2016 that Michelin was going to be launched in Washington, DC, and started collecting menus, we found it challenging to retrieve menus from before the announcement. We, hence, decided to leverage web-archiving services, such as WebArchive, and transcribe photos of menus that had been published online by reviewers. This arduous procedure allowed us to retrieve two additional menus for 25 of the 83 treated restaurants in Washington, DC, and for 22 of the 83 control restaurants in Boston. Figure 4 shows the timing of data collection for this subsample of treated and control restaurants, while Table 8 compares them to the population of restaurants on which we ran our main analyses, showing no significant differences. Although the small N does not grant sufficient power for rigorous tests, examining these trends allows us to obtain some descriptive empirical evidence that may complement the qualitative evidence presented above and discussed in greater detail in Online Appendix 4.

Figure 4. (Color online) Timeline of Observations for Robustness Test of Parallel Trends Assumption
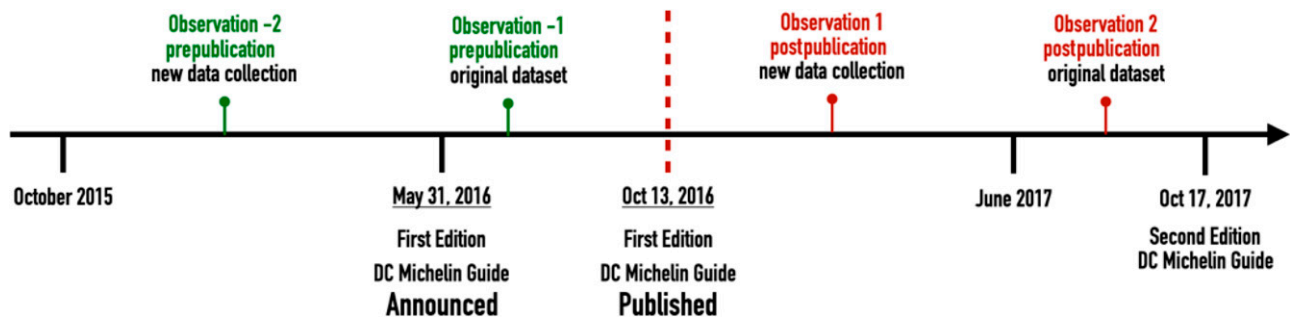
Note. The figure shows the timeline of observations for the subsample of treated ($n = 25$) and control 2 ($n = 22$) restaurants for which we can visually inspect pre/post trends, as per Figures 5–7.

Remember that our main results, as per Table 4, show that, compared with control restaurants, restaurants included in the Guide experienced a significant increase in *description length*, *craft authenticity*, and *minimum price*. In Figures 5–7, we focus on these three main outcome variables and compare treated and control restaurants in three different ways. First, we visually inspect the evolution of the differences between the subsample of treated and control restaurants. In Figure 5, we plot two periods before and two periods after the publication of the Guide, an event marked with a vertical line. In the case of this subsample of restaurants, the charts show general stability in differences between periods −2 and −1, followed by a significant increase in favor of treated restaurants in period 1. Two things are worth emphasizing here. First, the pre-Michelin observation we leverage in our main analyses is the one from period −1, which corresponds to the weeks immediately after the Guide's release was announced. The stability in differences between periods −2 and −1 should, hence, mitigate concerns about the presence of an announcement effect captured by our data. Second, the post-Michelin observation we leverage in our main analyses is the one from period 2. We had made this choice to account for seasonality and compare menus from similar periods in the year (summer 2016 versus summer 2017). However, it should be noted that period 2 falls immediately before the publication of the following edition of the Guide, when the ranking was arguably the most unstable. This may explain why our effects seem to peak in period 1. In light of this descriptive evidence, the estimates from our main analyses seem somewhat conservative. One could indeed argue that they capture the persistent, long-term effects of the status shock. Still, given the size of the subsample of restaurants on which these analyses are based, we do not feel comfortable generalizing these conclusions to the full population of restaurants.

Next, we look at from where the differences displayed in the previous graphs come, by separating the trends for treated and control restaurants. Figure 6 shows that, at least in this subsample, treated and control restaurants were moving in the same direction before the publication of the guide and then parted ways after the guide was released (vertical line). The patterns in the graphs are in line with what we observed when discussing variations in treated and control groups. For minimum prices, we do see treated restaurants from this subsample increase prices for a narrower time span compared with what we observe for the full population of treated restaurants in the paper. Last, we perform a leads and lags analysis, in which we examine the effect of treatment on the main outcome variables during the four periods. We set the pre-treatment period −1 as the reference value. Figure 7 shows the results of this analysis, which are consistent with what we observed in our graphical inspection of the differences. The parallel trends assumption seems not to be violated in pre-treatment periods, at least for the subsample of restaurants from which we can inspect the data, as the treatment effect is not significantly different in periods −2 and −1 for any of the three outcome variables. Once again, we see some evidence of a treatment effect that peaks after the Guide came out and seems to fade off over time, in anticipation of the next release in October 2017. If confirmed for the full population of restaurants, this evidence could suggest that the effects detected in the paper are smaller than those observed immediately following the Guide's publication. But, again, given the size of the subsample, we suggest caution when drawing conclusions. More generally, we recommend reading the evidence presented across the sets of figures as showing no suspicious violation of the parallel trends assumption, as opposed to showing support for it.

Synthetic Control. One last concern could be related to our choice of control groups. The presence of two controls should partially mitigate this concern, particularly in light of the trends we discussed above when commenting on the behavior of control restaurants.

Table 8. Summary Statistics for Robustness Test of Parallel Trends Assumption

	Treated		Subsample Treated			Control 2		Subsample Control 2		
Variable	Mean	SD	Mean	SD	p-value	Mean	SD	Mean	SD	p-value
Yelp rating (1–5)	3.957	0.040	3.928	0.056	0.692	3.938	0.042	3.883	0.066	0.498
Yelp price level (1–4)	2.621	0.095	2.600	0.115	0.899	2.639	0.084	2.636	0.155	0.986
Average restaurant age (years)	7.448	0.516	6.480	0.726	0.296	8.672	0.494	8.818	0.939	0.884
Share of starred restaurants	0.103	0.040	0.080	0.055	0.744	0.098	0.038	0.091	0.063	0.920

Notes. The figures in the table are from 2016, before the publication of the first edition of the Michelin Guide for Washington, DC. Yelp figures are computed on the previous 12 months. Yelp rating and Yelp price level were among the variables used to match restaurants from Boston to generate control 2. We report information about restaurant age and share of starred restaurants to compare across a broader range of characteristics.

We, nevertheless, decided to include an additional robustness test using a synthetic control group. The method is based on the construction of a synthetic control unit that represents a weighted combination of many untreated cases (Abadie and Gardeazabal 2003, Abadie et al. 2010), with weights calculated to maximize the similarity between the synthetic control and the treatment unit in terms of prespecified matching variables. Synthetic controls offer a formal and more objective approach compared with traditional, manual selection of control cases, and they maximize the observable similarity with the treatment unit (Pierce et al. 2020). In our case, we constructed a synthetic control group using restaurants from both control 1 and control 2 and matching on pre-treatment values for cuisine type, price level, rating, and self-presentation attributes (i.e., *description length*, *size description*, *natural authenticity*, *craft authenticity*, *average price*, and *minimum price*). The estimated models based on 100,000 permutations yielded the same results from a comparison with our original control groups, as reported in Table 4. In particular, we observe a significant increase in *description length* (+8.6%, $p = 0.015$), *craft authenticity* (+24.4%, $p = 0.022$), and *minimum price* (+5.4%, $p = 0.015$). We graph these results in Figure 8, while Online Appendix 5 includes results

Figure 5. (Color online) Differences Between Treated and Control 2 Before and After the Guide's Publication
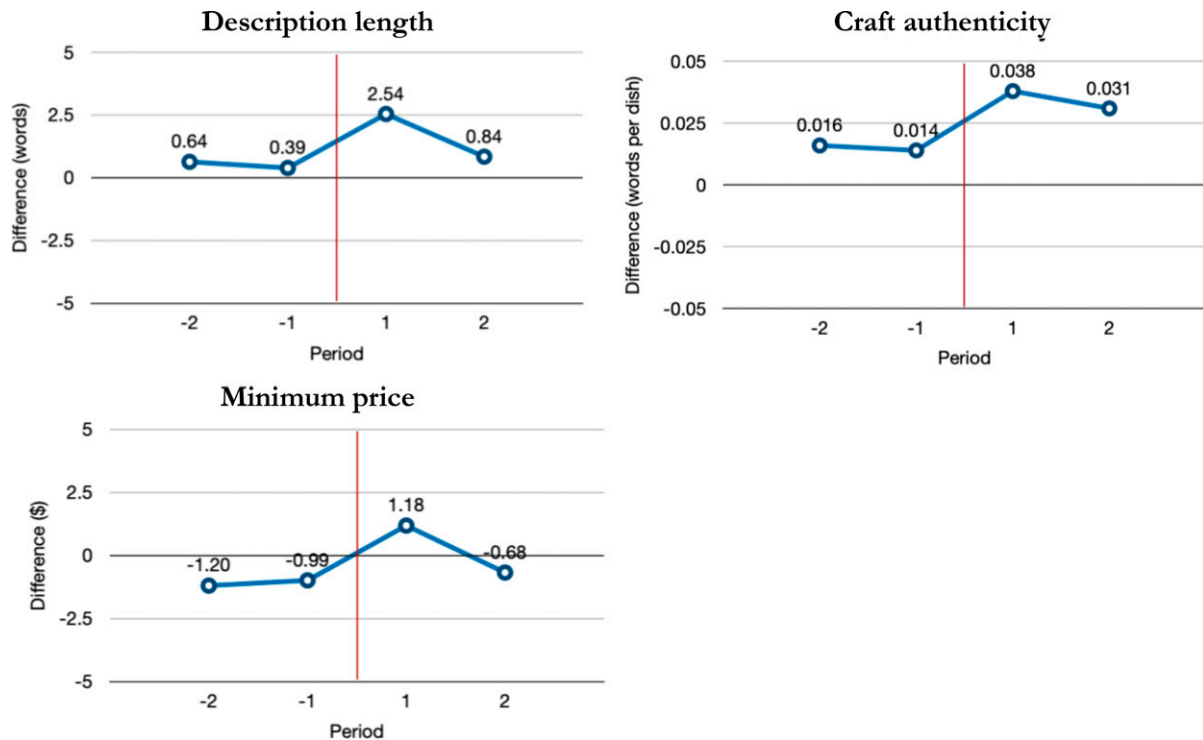
Notes. The figure shows the evolution of the differences between the subsample of treated ($n = 25$) and control 2 ($n = 22$) restaurants. We plot two periods before and two periods after the publication of the Guide (vertical line).

Figure 6. (Color online) Variations in Treated and Control 2 Before and After the Guide's Publication
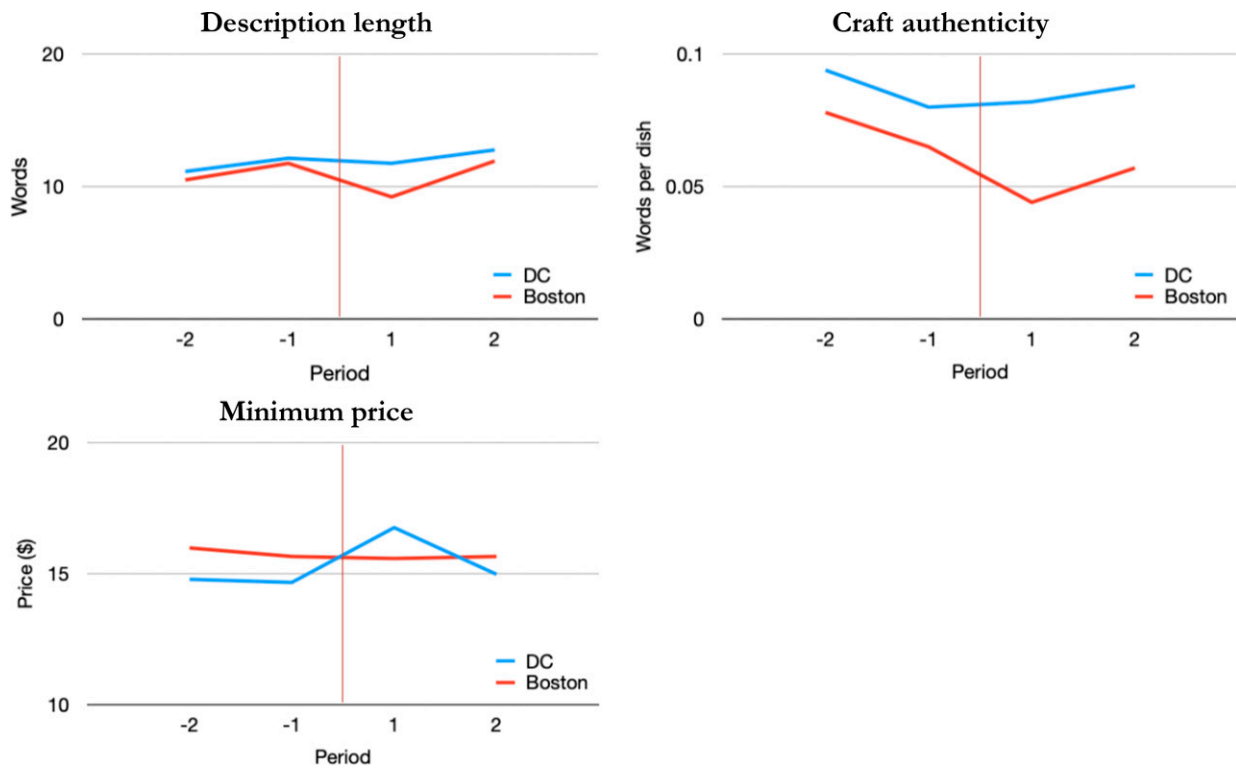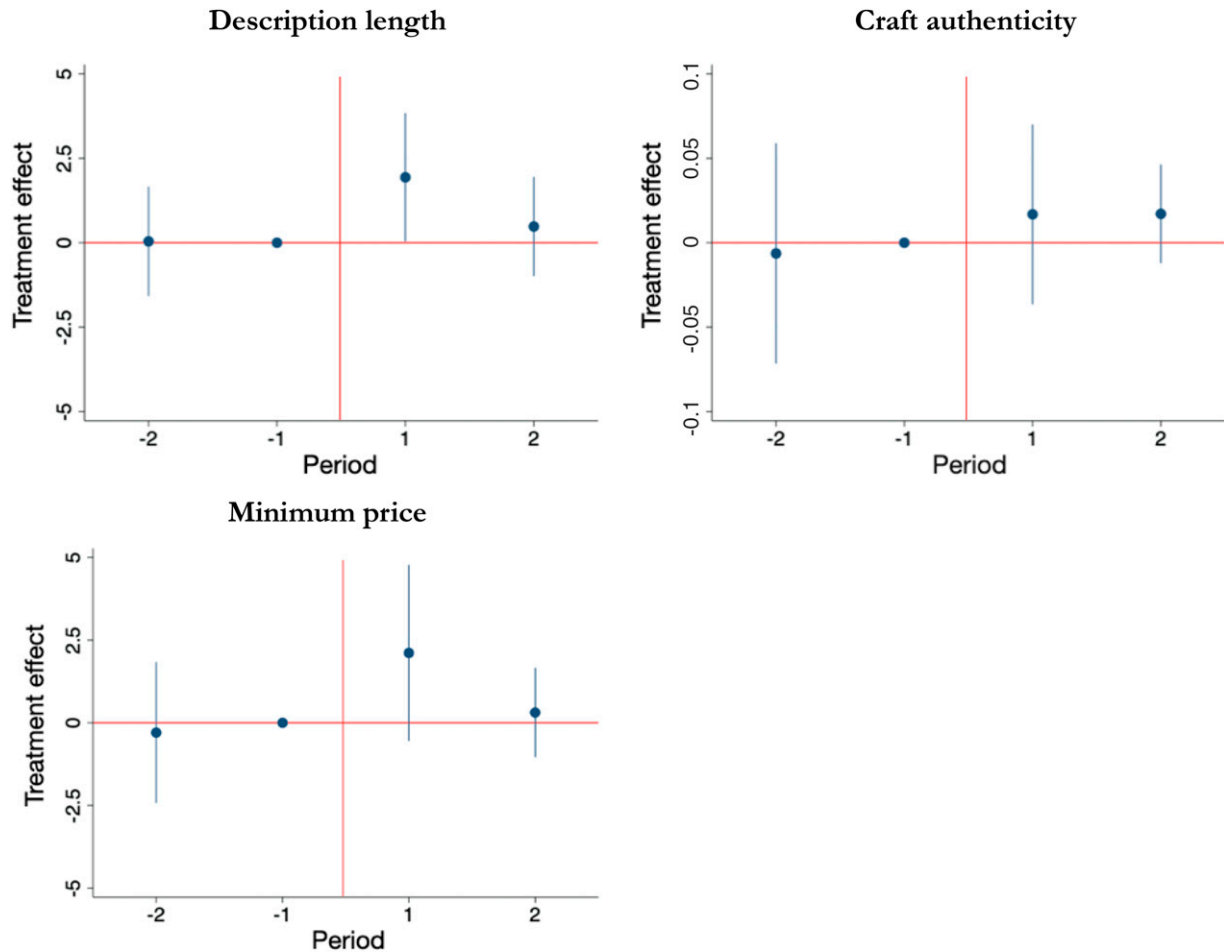

Notes. The figure shows the trends for the subsample of treated ($n = 25$) and control 2 ($n = 22$) restaurants. We plot two periods before and two periods after the publication of the Guide (vertical line).

for all six outcome variables, both in the case of all restaurants and in the case of non-starred restaurants only.

Discussion

We are used to thinking of high-status actors as enjoying the great benefits that come from their position, without a worry in the world. High-status actors can command higher prices, face lower costs, have easier access to resources, and enjoy greater freedom to deviate from norms (Podolny 1993, Benjamin and Podolny 1999, Phillips and Zuckerman 2001, Sauder et al. 2012). But previous work also tells us that there is a dark side to the attribution of status: Status comes, but status can also go. And so, high-status actors may experience insecurity, feel the need to conform, and take actions to justify their position and show that they belong (Jensen and Roy 2008, Sauder and Espeland 2009, Phillips et al. 2013, Hahl and Zuckerman 2014, Kovács and Sharkey 2014, Hahl et al. 2017, Jourdan et al. 2017, Prato et al. 2019). In this paper, we exploited the exogenous shock produced by the Michelin Guide's entry to Washington, DC, in the fall of 2016. We illustrate how, following a status gain, organizations enacted a series of changes to their self-presentation, an effort to conform to what they believe audiences expect from high-status players.

Our results suggest that newly recognized high-status restaurants reacted to their new status position by acting on three sets of self-presentation attributes. They modified how their menus looked, by making their *descriptive* attributes consistent with the ethos of the elite. They emphasized their techniques and ingredients, to display the *authenticity* that characterizes elite players. And, finally, they adjusted pricing to signal awareness of the *value* they created for their customers. Results from our analyses suggest that all status-shocked restaurants acted on all sets of attributes, but that the tendency to act was stronger for organizations that did not occupy the top of the ranking—that is, restaurants that were not awarded Michelin stars. We also looked at how an organization's standing prior to the status shock affected their need to modify self-presentation attributes. Contrary to our expectations, our results suggest that restaurants with high prior standing, which should have been less concerned about showing their worth, emphasized attributes that channeled authenticity and value—a tendency we explain in light of their being potentially subject to the denigrating tendencies described by Hahl and colleagues (Hahl and Zuckerman 2014, Hahl et al. 2017). Actors with low prior standing, on the other hand, acted on descriptive attributes that

Figure 7. (Color online) Treatment Effect Estimates Before and After the Guide's Publication


Notes. The figure reports the results of a leads and lags analysis, in which we examine the effect of treatment on the main outcome variables for the subsample of treated ($n = 25$) and control 2 ($n = 22$) restaurants. We plot two periods before and two periods after the publication of the Guide (vertical line) and set pre-treatment period -1 as the reference value. Circles indicate treatment coefficient estimates, with confidence bands at 95%.

signaled an ability to "fit the mold" and their belonging among the elite (Askin and Bothner 2016).

Our theory is about modifications to self-presentation attributes and does not necessarily imply that status-shocked restaurants made operational changes. However, we have reasons to believe that, at least in some cases, changes in self-presentation could reflect material changes in operations. Intuitively, the extent to which a change in presentation can also reflect a change in operations varies depending on the type of menu attributes we examine. For instance, one could argue that while a change in the length of a description does not imply changes in operations, removing references to portion sizes could potentially reflect a choice to limit the amount of food served per dish. Similarly, a change in authenticity attributes could potentially reflect an actual operational change in the cooking techniques used and, hence, the tools needed in the kitchen or the ingredients sourced. Finally, our intuition with

respect to value attributes is that while changes in minimum prices mostly act as a signaling device, average prices may potentially capture operational changes. Results from the analyses above show significant changes in *description length* and *minimum price*, which are the least likely to imply changes in operations. We also have no evidence of a significant change in *average price*, which could have reflected the need to adapt pricing to cover for expensive operational changes. On the other hand, we do report significant changes in *craft authenticity*, and in the case of non-starred restaurants, *size description* and *natural authenticity*—all changes that could potentially reflect changes in a restaurant's operations. In light of this intuition, our findings about the moderating role of prior standing could be suggestive of another fundamental difference in the behavior of status-shocked restaurants, depending on their prior standing. The finding that restaurants with high prior standing mostly emphasized authenticity

Figure 8. (Color online) Synthetic Control Estimates of Treatment Effects
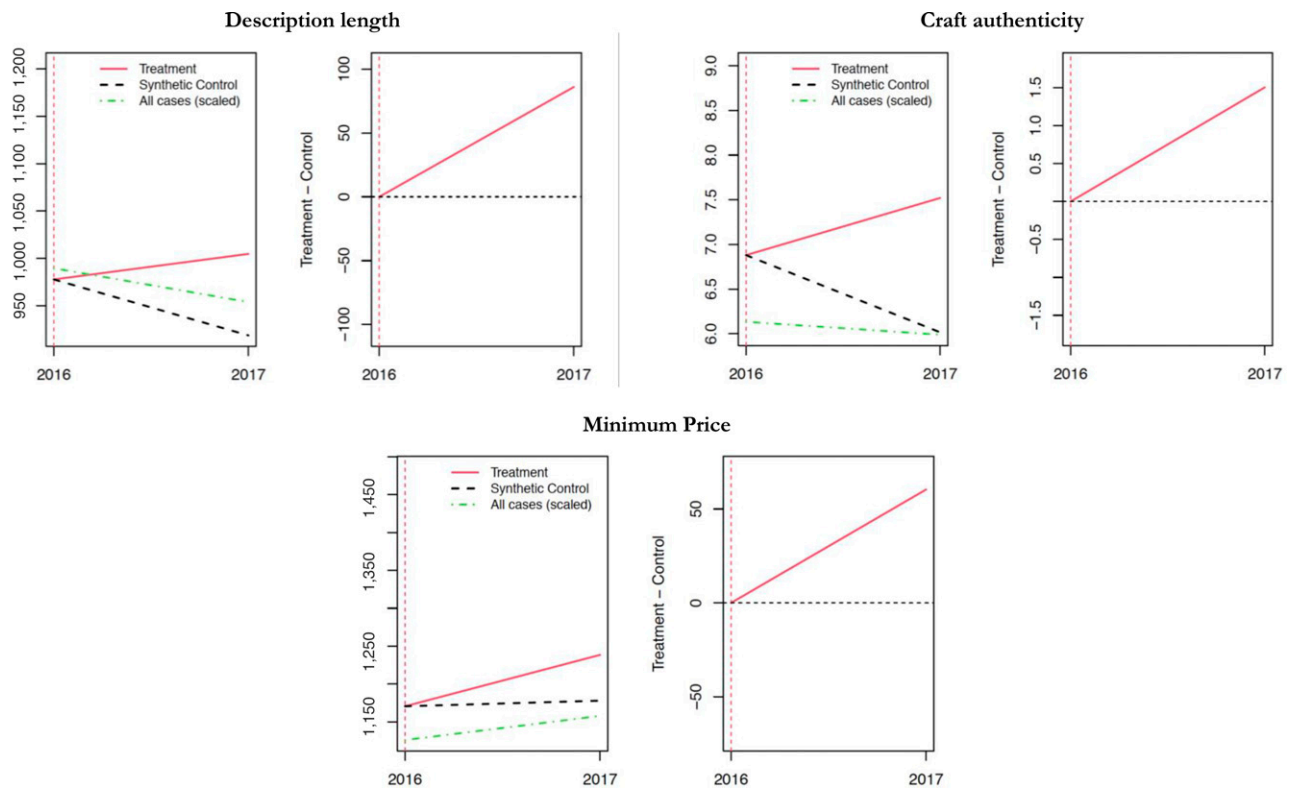
Notes. We construct a synthetic control group using restaurants from both control 1 and control 2 and matching on pre-treatment values for cuisine type, price level, rating, and self-presentation attributes. The estimated models are based on 100,000 permutations. For each variable, the panels on the left compare treated and control groups, while panels on the right show changes from the pre-Michelin level for treated restaurants only. Values on the vertical axes should be divided by 100. Online Appendix 5 includes results for all six outcome variables, both in the case of all restaurants and in the case of non-starred restaurants only.

and value attributes could suggest that, in their case, the Michelin designation triggered operational changes. This seems not to be the case for restaurants with low prior standing, which mostly acted on descriptive attributes that did not necessarily imply operational changes and could be easily manipulated to signal belonging among the elite.

Unfortunately, our data do not allow us to further disentangle this interesting link between changes in self-presentation and changes in operations. Based on prior work (e.g., Rao et al. 2003, 2005), our own expertise, and interviews conducted for this study, our intuition is that the mere inclusion in the Guide does not require restaurants to make costly investments to "raise their game." However, for restaurants whose position in the ranking is more prominent, material changes may indeed be required for self-presentation changes to be credible. This may explain why restaurants with high prior standing were more likely to change attributes that could imply a change in operations. Similarly, chefs from Michelin-starred restaurants explained to us how their customers expected "Easter eggs" (i.e., an amuse bouche before the starter or petit fours and chocolate pralines with coffee). An

accomplished chef compared two colleagues who had been recently awarded their second star and explained to us how one chef, located in a rural village, could have used the star as an opportunity to grow his business, while the other chef, located in the center of a major city, would have been "forced" to make costly investments that would have substantially shrunk his margins. One of the interviewees quoted in Sands (2020) similarly mentioned how the chefs of a newly starred restaurant sought better and better ingredients, with a disastrous effect on profitability, because of their focus on being "the Michelin star" restaurant. Consistent with this intuition, the very few starred restaurants in our sample raised minimum and average prices well above their non-starred counterparts (respectively, +36% and +19% versus +3% and +2%). Future work could further explore this conjecture.

From a theoretical standpoint, our findings speak to two areas of broad interest. First, we contribute to a better understanding of how organizations react to status changes. We show that high-status actors do not simply exploit the opportunities that status provides, but enact changes to align their operations and

identity to the ethos of the elite—a representation that gets reinforced as actors with newly acquired status positions implement the corresponding changes (Goffman 1959, Jourdan et al. 2017). By providing evidence of how producers' perception of status alters and directs their behavior, we offer a perspective that is complementary to the traditional emphasis on how audiences perceive high-status producers (and how the latter accrue rents from audiences' perceptions). In this respect, we find it telling that establishments with high prior standing also engaged in substantial modifications of their self-presentation attributes. Future research could further investigate how producers' perceptions of their own identity and group membership influence their behavior.

Second, we contribute to research on status and conformity by disentangling the sources and types of conformity behaviors that newly awarded high-status actors deploy. By suggesting that status insecurity may drive high-status actors to conform to what they believe audiences expect from high-status players, we refine the dominant idea that high-status actors are less likely to conform to what is normal or observable in the industry (Phillips and Zuckerman 2001). By showing that the high-status group conforms in order to be perceived as a worthy member of the elite, we go beyond the traditional view of conformity as passive imitation (Philippe and Durand 2011, Bromley and Powell 2012, Carlos and Lewis 2018) and introduce a notion of *aspirational* conformity. By emphasizing the complex interplay between self-presentation and operational changes, we also contribute to recent work on the strategic use of conformity (Kim and Jensen 2011, Durand and Kremp 2016). We believe future research could further unpack these dynamics and provide robust empirical evidence on the operational implications of aspirational conformity.

From an empirical standpoint, the use of a DID approach with multiple control groups enables us to more precisely link changes in restaurants' behavior to the status shock they experienced following the introduction of a new, influential status hierarchy. In doing so, we overcome the identification issues that may be associated with examining changes within existing status hierarchies without a clearly stipulated counterfactual and/or control population (Azoulay et al. 2013). By providing real-world evidence of actors' behavior, we also complement recent empirical work conducted in the laboratory (Hahl and Zuckerman 2014, Hahl et al. 2017). Notwithstanding these advantages, the paper is not without limitations. Our analysis is restricted to a single city and based on two observations per restaurant (one *pre-* and one *post*-treatment). This means that our sample size and the number of observations from which we draw inferences is relatively small. Although we adopted several measures to

achieve a convincing identification strategy, replicating these results in other geographical areas with larger samples would substantiate and add validity to our results. Second, we examined the introduction of a status ranking produced by the most prominent evaluator in our industry of reference. Washington, DC, was indeed only the fourth city in the United States to be acknowledged by Michelin as worthy of their attention. Such exclusivity clearly exacerbated insecurity pressures associated with the establishment of the new status hierarchy, as all restaurants included in the Guide were admitted for the first time to a ranking that allowed them to join the elite of the industry. Third, we focus on an industry characterized by uncertainty in the assessment of quality (Sharkey and Kovács 2018). The higher uncertainty that surrounds the assessment of quality in experience goods, like a restaurant meal, compared with physical goods may further exacerbate the insecurity experienced by actors following a positive status shock.

Future research could lead to a better understanding of how restaurants react to the rapidly evolving landscape of status evaluations. Nowadays, the evaluations provided by Michelin or prominent local critics coexist with customer evaluations from food bloggers, influencers, and ordinary customers contributing to Google, OpenTable, TripAdvisor, or Yelp. Another interesting extension of our work would involve its replication in other settings. Although an obvious choice would be to replicate these results in industries that have been frequently investigated by status scholars in the past, we believe these results have a broader appeal and generalizability. Rankings and ratings generate status ladders that impact every firm in any industry, no matter whether based on performance excellence or normative criteria, such as environmental protection or fair human treatment (Chatterji and Toffel 2010). When extending this research to other industries, it may be worth considering how positive status shocks affect the audience of the awarded actor. In some cases, changes may be driven by the need to appeal to different audiences rather than please one single critical audience (Kovács and Sharkey 2014). Finally, a natural development of this study would examine the performance implications of the changes we observe. Our data do now allow us to tackle this point, but we would expect to observe a positive effect on performance, driven by a reduction in the dissonance between the market identity of the restaurant and the expectations of customers (Wang et al. 2016). Future studies could test such an effect and identify the associated scope conditions, mechanisms, and moderators.

Acknowledgments

Endnotes

1 See, for instance: https://www.theguardian.com/food/2020/jan/27/michelin-launches-2020-guide-controversy-bocuse-auberge-du-pont-de-collonges-third-star (restaurants); https://www.economist.com/leaders/2007/02/22/losing-their-vrroooom (carmakers); https://www.economist.com/international/2018/05/19/how-global-university-rankings-are-changing-higher-education (universities); https://www.theatlantic.com/health/archive/2019/10/the-power-of-momentum/601063/ (athletes).

2 See: https://www.nytimes.com/2009/12/23/dining/23menus.html; https://www.finedininglovers.com/article/menu-engineering-art-and-science-perfect-menu; https://www.bbc.com/future/article/20171120-the-secret-tricks-hidden-inside-restaurant-menus.

3 See, for instance, the following article from 2006, in which the president of the Culinary Institute of America shared that menu engineering was being taught to all CIA students: https://www.nytimes.com/2006/10/21/dining/21plate.html.

4 See: https://michelinmedia.com/Michelin-guide-dc/.

5 We conducted phone interviews with three restaurant managers and one email interview with a prominent food critic in the period between the announcement and the publication of the guide.

6 See: https://www.washingtonpost.com/news/food/wp/2016/10/13/washington-gets-its-first-michelin-starred-restaurants-today/.

7 An alternative empirical approach could have entailed the use of a regression discontinuity design. This was not feasible in our context, as we did not have information about subjects that nearly missed inclusion in the guide. Out of curiosity, we tried to identify a set of control restaurants that could have expected to be included in the guide based on their price level, cuisine type, Yelp rating, and local critical acclaim. This led us to single out 20 restaurants that were ultimately not included in the guide. Descriptively, we observed no difference in behavior between these 20 and other restaurants in the control group.

8 The 2017 edition of the Michelin Guide featured 106 restaurants, 12 of which were awarded stars. One restaurant was closed within one year from the publication of the guide. We were able to obtain accurate information for the years 2016 and 2017 for a total of 83 restaurants (eight with stars and 75 without stars), which constituted our treated group.

9 See: https://www.washingtonpost.com/lifestyle/food/what-Michelin-gets-wrong-about-dcs-dining-scene–starting-with-rasika/

2016/10/13/3fb750de-90c0-11e6-9c52-0b10449e33c4_story.html?utm_term=.edb9d879502e.

10 Washington and Boston, in 2016, had a comparable population (675,254 versus 678,430 (U.S. Census Bureau)) and a comparable number (1,312 versus 1,209 (Yelp)) of medium- and high-end restaurants (average meal price above $10).

11 One anonymous reviewer correctly pointed out that our results could be driven by a decrease in the number of dishes, because our dependent variables are calculated "per dish." To rule out this possibility, we ran our model using number of dishes as a dependent variable and found no significant change from 2016 to 2017. We also replicated all analyses using the raw word count for *description length*, *size description*, *craft authenticity*, and *natural authenticity*. Results are in line with those presented in the paper.

12 In the classification of authenticity by Carroll and Wheaton (2009), natural authenticity could be interpreted as part of what they describe as craft authenticity or, alternatively, as moral authenticity, to the extent that restaurants want to signal ethical behavior. However, these classifications are not fixed or universally adopted. Dutton (2003), for instance, associates natural authenticity with nominal authenticity. We, hence, chose to adapt existing classifications to our empirical context. Following Rao et al. (2005), we distinguish between natural and craft authenticity to represent the dichotomy between raw materials and cooking techniques.

13 We are thankful to the editorial team for inspiring us to include this additional dimension of analysis.

14 Given the size of our sample, and related concerns about power, we conducted ex post power computations, as per Online Appendix 2. Results suggest that our power is within reasonable ranges, but we do tend to be slightly underpowered (~60%–70%) in the case of non-starred restaurants. The values are still above the averages reported by Cashen and Geiger (2004); we, nevertheless, suggest some caution in drawing inferences from our results for non-starred restaurants, given the higher risk of type II errors.

15 In their study on the effect of names of menu items on customers' perceptions, Wansink et al. (2002) found that adding one or two evocative words to the names of two items in the menu of the faculty cafeteria at the University of Illinois generated a 27% increase in the sales of those items and benefited the overall attitude toward both the food and the restaurant. The experimenter manipulated a total of six menu items by adding the words in italics: *Traditional Cajun* Red Beans with Rice; *Succulent Italian* Seafood Filet; *Tender* Grilled Chicken; *Home-style* Chicken Parmesan; *Satin* Chocolate Pudding; and *Grandma's* Zucchini Cookies.

16 We considered the alternative of adding prior standing as a moderator in our Equation (1) through a three-way interaction. We ultimately decided against this empirical strategy, however, for two reasons. First, in the case of Washington, DC, there is high overlap between *treated* and *prior standing*, whereas only 11 out of the 143 control restaurants had high prior standing. Such an unbalanced distribution would have made the three-way interaction uninformative. Second, we attempted to collect a measure of prior standing for the matched restaurants in control 2, but soon realized that the evaluations available for Boston were not directly comparable with those available for Washington, DC. The rankings published by *The Washington Post* and the *Washingtonian* are very consistent with our notion of prior standing. The former identifies the top 10 and top 50 restaurants in DC; the latter ranks the top 100. The evaluations provided by *The Boston Globe* and *Boston Magazine*, on the other hand, reward restaurants that are trending for specific features (such as healthy lunch, new arrival, etc.), thus failing to provide an overall evaluation that ranks top restaurants and sets them apart.

17 Results from ex post power computations, reported in Online Appendix 2, suggest that our power is within reasonable ranges,

but relatively lower (~60–70%) only for *craft authenticity* and *minimum price* (control 2 only) in the case of restaurants with low prior standing. The values are above the averages reported by Cashen and Geiger (2004), but still suggest caution in drawing inferences.

[18] See https://www.bostonglobe.com/lifestyle/food-dining/2016/10/10/getting-its-first-michelin-restaurant-guide-why-not-boston/NT1eXE8L30OKlaM8BldpCI/story.html.

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