

ARTICLE

"Authentic and Amazing": authenticity as an evaluative category in online consumer restaurant reviews

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Claims and evaluations of authenticity are a powerful resource in food discourse: reviewers use evaluations of authenticity to demonstrate their expertise, and restaurants viewed as authentic receive higher star ratings. But the multivalent nature of authenticity presents challenges for researchers. This contribution seeks to understand authenticity by combining computational and corpus driven discourse analysis methods. O'Connor et al. (2017) sought to quantify the impact of authenticity on consumer perception via four theoretical authenticity types (type, craft, moral, and idiosyncratic). This method is tested using a sample of US restaurant reviews and compared to sentiment analysis metrics computed from the same dataset. All types except for moral authenticity showed a positive effect on sentiment. Authenticity in restaurant reviews is further investigated by examining collocates of terms referring to authenticity and compiling keywords of subcorpora created from high and low scoring reviews. Reviewers most often topicalize authenticity in terms of place, taste, and descriptors of ethnicity. These findings illustrate how combining corpus driven discourse analytical and computational methods can illuminate evaluation from multiple perspectives and provide insights which may help to improve computational approaches in the

Introduction

While restaurant reviews have traditionally come from sanctioned experts such as food writers and restaurant critics, platforms such as Yelp, Google and TripAdvisor offer users a plethora of information on businesses created by other users. This has led to the rise of a now ubiquitous type of social discourse: the consumer review. Reviewers participate in online discourse communities in which cultural and culinary capital is built via evaluation and where reviewers challenge existing hierarchies in food discourse while also staking their own claims to culinary expertise (Vásquez and Chik). Reviewers are also concerned with their own identity construction and self-presentation over the course of a review, and employ various discursive strategies, such as "narratives to portray their own social or psychological characteristics, role or stance" to cast themselves in a positive light (Jurafsky et al., "Narrative Framing"). This means that restaurant reviews are not merely a sober evaluation of the dining experience, but messy, complex, and context dependent (Vásquez 28). This becomes especially clear when looking in detail at the particular aspects of their experience which reviewers evaluate and to which they draw attention. For instance, in the following excerpt from a consumer review, the author draws attention to the fact that the business is family owned, the family comes from Vietnam, and that they don't use MSG by grouping them together in one list. What do they have in common?

Ex. 1: This is the best pho you will ever have. They are straight from Vietnam, family owned, no msg, authentic and amazing. Been to los [sic] Angeles, little Saigon in Westminster, and all over California. This is by far the best. (5 stars)

I argue that their commonality lies in the fact that they all contribute, in different ways, to the construction of the restaurant as *authentic*.

In this paper I view authenticity from an attributional point of view, meaning that it is something assigned to the restaurant, food, or experience from the perspective of the reviewer as the result of dynamic social processes (Lacoste et al. 2). Rather than looking at how the reviewers authenticate or legitimize their own reviews, I am interested here in how reviewers topicalize authenticity and utilize it as an explicit or implicit evaluative concept. Authenticity as an evaluative concept has proven to be analytically challenging. Past research has clearly demonstrated that restaurants seek to influence consumers' perceptions of authenticity and that consumers consider it an important part of their dining experience. However, multiple meanings of the term make it challenging to assess the roles that various facets of authenticity play in consumer evaluations. This paper combines computational and corpus linguistic approaches to more fully understand the role that authenticity plays in the discourse of consumer reviews by addressing the following research questions:

RQ1: How do evaluations of authenticity relate to the overall sentiment of reviews?

RQ2: How are evaluations of authenticity realized in context and does this align with prior theoretical models of authenticity evaluations?

The role of authenticity in food discourse: distinction

The literature on authenticity is exceptionally broad and covers many disciplines, but two perspectives in the literature are relevant here: a discourse analytical approach grounded in sociolinguistics, and an applied approach grounded in organizational and management studies. While the two approaches come from very different backgrounds, the computational method developed by O'Connor et al. adds a useful perspective to the predominantly qualitative and discourse analytical approach taken in many studies on authenticity in food discourse, as well as the corpus driven analysis in the second half of this paper. The hope is that by combining two approaches a fuller picture of authenticity evaluations will emerge.

¹ See Jurafsky et al., "Linguistic Markers", Skibinsky, and Vásquez and Chik.

The work of Bourdieu has provided perhaps the most influential model for analyzing social processes in food discourse. He argues that language use, particularly "technical, archaic and esoteric" is a crucial distinguishing feature between the *connoisseur* and the common consumer (Bourdieu 279). Common choices in language about food by businesses or consumers can create social cohesion within the group in question in different class or social contexts, while also serving as grounds to distinguish one group from the other (Lakoff 150). Moreover, linguistic changes in menus over time, such as the semantic bleaching and subsequent disappearance of gourmet from menus or fluctuation in the length of menu item descriptions, can be seen as the result of a continual process of negotiation of cultural capital as previous markers of distinction become commonplace (Jurafsky et al., "Linguistic Markers"; Lakoff 156-57). One aspect that is consistently oriented to by both restaurants and customers as a source of distinction is authenticity, but the ways in which authenticity is invoked and the meanings of the term vary widely from context to context.

Sociolinguistic Approaches to Authenticity

In general, three to six senses or types of authenticity are common in the literature.² Coupland's influential model includes the five semantic dimensions of *ontology*, *historicity*, *systemic coherence*, *consensus*, and *value* (418-9). Van Leeuwen identifies four aspects which can be involved in creating or evaluating authenticity: genuine provenance or authorship, faithfulness of representation, authorization by some external authority, and the expression of a true sentiment or style (392-93). He stresses the social construction of authenticity as well as the role it plays in the reproduction of normative values and hierarchies. In this view, authenticity is an evaluation of the validity of an object or the actions of an agent, and is therefore tied to the cultural, social, and historical forces which enforce certain judgements as valid over others.

Mapes identifies five rhetorical strategies (historicity, simplicity, pioneer spirit, lowbrow appreciation, and locality/sustainability) used to evoke authenticity in food discourse in the New York Times. Her analysis focuses on the concept of 'elite authenticity' and the ways in which the rhetorical strategies employed by authors simultaneously normalize the privilege of the upper-class while disavowing elitism and romanticizing the food and practices of the lower-class. Thus, she argues that authenticity is a crucial way in which social distinction is produced and made attractive in media discourse (283). Building on Mapes, Skibinsky has found that Asian restaurants in the U.S. carefully mediate authenticity to produce an indistinct 'Asian' identity which is simultaneously exotic but non-threatening to appeal to the white, middle-class consumer.

² Compare Lacoste et al., which takes a sociolinguistic approach, with Lehman et al. and Newman and Smith from management and organizational studies.

The work of Jurafsky et al. ("Linguistic Markers") and Freedman and Jurafsky likewise focuses on authenticity as a driver of distinction between social classes. They argue that restaurants and advertisers cater to clientele of different socioeconomic status by emphasizing different aspects of authenticity with which their target customer can identify, and that these linguistic decisions, which highlight different markers of distinction, are domain and context dependent. Jurafsky et al. groups authenticity in restaurant menus into two primary metaphors: *naturalness* and *tradition*. Words referencing naturalness and the source or type of ingredients (*natural*, *heirloom*, *local*) were used by more expensive restaurants, whereas mentions of tradition and historicity (*old fashioned*, *mother*, *home style*) correlated with lower priced restaurants (Freedman and Jurafsky 51–52).

However, authenticity is not just something projected by restaurants and perceived by consumers. Karrebæk and Maegaard engage in a detailed study of the construction of authenticity in a single Danish fine-dining restaurant. Their article shows how intricately authenticity is discursively achieved in different frames and semantic dimensions by using a variety of multimodal resources and emphasizes the active role consumers play in co-constructing and determining the authenticity of their own experience. Also focusing on consumers, Vásquez and Chik observed how lay reviewers judged the authenticity of restaurants as part of building their 'culinary capital' in order to assert their expertise and belonging to a gastronomical social elite, i.e. to the ranks of connoisseurs. This was accomplished by the use of discursive resources such as referencing first-hand knowledge gained through travel and indicating a personal or heritage connection to the cuisine, especially in reviews of 'ethnic cuisine' (242).

For lay reviewers, discussing authenticity is an important resource in identity construction, and reviewers actively seek and co-construct authentic experiences. As Coupland notes, "Authentic things [...] are authenticating for people who recognize their authenticity, as well as in themselves being socially authenticated." (419). By eating at authentic restaurants and telling others about it, reviewers increase their own culinary and cultural capital, distinguishing themselves from other consumers who are not 'in the know' and marking themselves as having authentic taste, in all senses of the word. However, even if a reviewer deems the restaurant to be inauthentic, making such an evaluation involves claiming the knowledge and authority needed to make an evaluation of authenticity in the first place, thereby preserving the reviewer's positive self-presentation and cultural capital.

The Quantification of Authenticity

The motivation of management studies to quantify consumer perceptions of authenticity reflected in textual data has largely been to understand its effect on value judgments and consumer satisfaction. The model adopted for the quantitative analysis in this article divides authenticity into four subtypes: *type*,

moral, idiosyncratic, and craft authenticity. Type authenticity relates to fidelity to genre or archetype, whereas moral authenticity describes an evaluation of the sincerity of the views and choices expressed by individuals or organizations. Closely related to type authenticity, craft authenticity is tied to the skill and quality of production, while idiosyncratic authenticity concerns the perceived uniqueness and quirkiness of an organization or product, tying it to moral authenticity (O'Connor et al. 3–4).³

Both Kovács et al. and O'Connor et al. adopt a lexicon-based approach similar to sentiment analysis. Kovács et al. found that reviews with higher authenticity scores correlated to a higher star rating, and that consumers were willing to pay higher prices for products or experiences they considered more authentic (12, 17). Further research found that each of the authenticity subtypes mentioned above exerted a positive effect on the evaluation of restaurants measured by star rating and willingness to pay, but to a different degree. This more nuanced approach aimed to account for the ways in which evaluating authenticity involves multiple and overlapping context dependent meanings, as discussed in the previous section (O'Connor et al. 9–11).

The clarity provided by the framework of Newman and Smith is beneficial for any attempt to approach authenticity from a quantitative or 'big-data' perspective. In their typology of authenticity judgements they emphasize that the criteria against which authenticity is judged (external or internal) as well as the type of referent being evaluated (agent or object) shape the way authenticity is evaluated. In their model it is the interaction between these two dimensions which gives rise to different types of authenticity (614).

This insight allows us to make informed predictions regarding the types of authenticity evaluations likely to be made in the data here. For instance, five-star reviews have been found to focus most explicitly on the food, whereas one-star reviews tend to be narratives focusing on the actions of people (Jurafsky et al., "Narrative Framing"). Thus, evaluations of type and craft authenticity might be most prevalent in consumer reviews of restaurants with higher authenticity and sentiment scores, whereas references to moral and idiosyncratic authenticity may be more present in reviews with low sentiment and authenticity scores. As can be surmised from the discussion above, being or acting authentic is generally considered a positive attribute, so we can predict that authenticity in general will be correlated with an increase in positive sentiment. However, the impact that the different types of authenticity discussed above have on sentiment, as well as the way in which authenticity is evaluated in context—what is evaluated and how this evaluation is achieved—are still not fully understood.

³ Examples from the data used here include: Type: "This place is *authentic real* Hawaiian poke." Moral: "Service was wonderful, extremely friendly and *genuine*." Craft: "My Hemingway was fantastic! thanks to their *expert* bartenders..." Idiosyncratic: "*Unique* blends of flavors - not your typical south of the border fare."

Thus far we have covered many different models of authenticity from different disciplinary perspectives. I view authenticity as an attributional concept which is the result of dynamic social processes, rather than an essential quality of an object or agent. It is an important means of distinction between consumers and classes, but because of its social contingency the meaning of and markers for authenticity must be continually negotiated. Different 'meanings', 'semantic dimensions' or 'types' of authenticity are relevant in different contexts, and often multiple types of authenticity are relevant simultaneously. I hope that by attempting to quantify aspects of authenticity we can gain a birds eye perspective which is complementary to the diverse research which has come before. In this paper, I will adopt the approach of O'Connor et al. for the quantitative investigation of the relationship between sentiment and authenticity because the scores they provide with their lexicon make it easier to operationalize and the types of authenticity they identify are largely compatible with the other models discussed above. This will allow us to answer RQ1. I will then construct corpora based on authenticity scores which will allow us to answer RQ2.

Data and Methods

The data set under analysis was provided free of charge for academic use by the company Yelp, which offers a platform for users to share reviews of businesses they have visited and to read the reviews of others, among other services. Using R, from a total corpus of N = 6,685,900 reviews from 10 metropolitan areas, I selected all English-language reviews of U.S. restaurants, leaving me with n= 2,595,487 reviews. From these reviews I created three corpora. Corpus 1 was created from a sample of n= 500,000 random English-language U.S. restaurant reviews for an initial investigation into the data. Filtering for reviews containing at least one item from the O'Connor et al. authenticity lexica resulted in n= 283,549 reviews for the analysis. Corpus 2 was used for the main quantitative analysis and consists of all English-language U.S. restaurant reviews from the original Yelp dataset with 5 or more instances of words from the authenticity lexica. This data selection process left me with n= 71,269 reviews, or 2.75% of the total number of English-language U.S. restaurant reviews. While this removed a considerable number of the reviews, the amount of data points collected per review provided an ideal data set for investigation. The aim here was to improve accuracy of the automatically generated authenticity score. To aid in a closer look at the realization of authenticity evaluations in the corpus, I constructed Corpus 3 from a sample of n= 70,887 reviews from Corpus 1. Reviews with an average authenticity score in the top quartile were grouped into the high authenticity review (HAR) subcorpus and reviews with scores in the bottom quartile into the low authenticity review

⁴ The data used for this analysis was obtained in 2019. The current version of the Yelp Dataset has been expanded, see www.yelp.com/dataset.

(LAR) subcorpus. Corpus 3 contains roughly 11 million tokens, with the HAR subcorpus containing 2.1 million tokens and the LAR subcorpus 3.4 million tokens.

The next task was to compute sentiment polarity score, authenticity type score, and average authenticity scores for each review. Since the concept of authenticity encompasses several different meanings, it is likely to be expressed with a variety of different lexical items, not merely using the word *authenticity* or authentic. For this reason, I adopted the full wordlist of 91 authenticity terms from O'Connor et al., along with the system scoring each word on a scale from 0-100 in terms of how much it expresses each one of the 4 authenticity types identified in their paper: moral, type, craft, and idiosyncratic authenticity. Items included high scoring terms such as *skilled* (type: 81, moral: 77, idio: 60, craft: 58) or pure as well as low scoring terms like false or bogus (moral: 14, craft: 14, idio: 16 type: 19).5 In order to minimize collinearity between the scales I developed another version (Appendix 1) which only contains the words most strongly associated with each subtype. If words had the same score in more than one scale, they were retained in all of the scales in which the score was the same. If a single word scored both above 50 in one scale but below 50 in another scale the word was retained in each scale.

Sentiment was analyzed at the review level using a lexicon-based approach. Using the sentimentr package in R, I computed the sentiment of each review with the included "Jockers-Rinker" lexicon modified to remove all terms which also appeared in the authenticity lexicons (Rinker). The authenticity type lexica were also loaded into sentimentr and used to compute an authenticity score for each review reflecting the overall valence of the authenticity type terms present in the review. An advantage of using sentimentr for computing authenticity and sentiment scores is that it uses a rule-based approach to detect negation, downgraders, upgraders, and other lexical items which can contribute to or modify sentiment in the text. In addition, I approximated a general authenticity score for each review by taking the average of the authenticity subtype scores. To make the authenticity and sentiment scores more comparable, I rescaled all scores between 1 and -1. Finally, I used linear regressions to predict the relationship between authenticity score and sentiment.

For the analysis of Corpus 3, I chose the quanteda package in R and Sketch Engine (Benoit et al.; Kilgarriff et al.). Sketch Engine was used as it provides a way to explore the data with a user-friendly graphical interface. This allowed me to quickly follow several lines of investigation as my familiarity with the data grew. Quanteda on the other hand is highly customizable, and so was an ideal environment for implementing the custom lexicons, calculating keyness

⁵ Detailed information is available in O'Connor et al. in Appendix S1, S2, and S3.

statistics not available in Sketch Engine and preparing the data for linear regressions. Keywords were computed with both the HAR and LAR subcorpora serving as target and reference corpus in turn. Keyword analysis is one of the central methods used in corpus driven research methodologies. It is usually aimed at uncovering salient frequency differences of words between the target corpus and a reference corpus which provides texts for comparison, but it can be done with other metrics, such as dispersion (Brezina 79; Egbert and Biber). This allows researchers to understand the 'aboutness' of a corpus through the analysis of these lists ranked by statistical significance or effect size to measure saliency (Baker 125). Following Gabrielatos, I used Difference Coefficient to measure effect size and G2 to measure statistical significance with a cutoff of 18.81 (Gabrielatos 225). After an initial analysis I introduced a cutoff of $n \ge 5$ for absolute frequency in the target corpus in order to remove extremely infrequent keywords. Based on the literature review and an examination of collocates and concordances, I then grouped the top 25 keywords according to semantic domain.

Results

The Link between Sentiment and Authenticity

Comparing authenticity scores with sentiment polarity scores provided the opportunity to compare two lexicon-based text analysis techniques covering differing but overlapping semantic domains. This is particularly useful to gain a sense of how authenticity analysis, a relatively new technique, performs against a more established metric. The results from Corpus 1 show that an increase in authenticity score correlates with an increase in sentiment. Figures 1 and 2 show average authenticity score plotted against sentiment for two data selection scenarios. Figure 1 shows all reviews from Corpus 1, indicating a slight positive relationship between authenticity and sentiment while also showing considerable variance in the data. This could have been due to a lack of data points to accurately calculate the authenticity score per review since authenticity is a narrower domain of evaluation than sentiment in general. To see if this might be the case, the second model only used reviews with 5 or more matches for words in the O'Connor et al. lexica. This considerably reduced the variance in the authenticity scores, as visible in fig. 2, and the linear model predicted a slightly larger positive effect of authenticity on sentiment and was able to explain more of the variance in the data, as shown by the higher R2. However, one downside of this approach is that the number of reviews was reduced to n= 7,350. Since there is a notable bias towards positive language in restaurant reviews this most clearly impacted the lower range of authenticity and sentiment scores (Jurafsky et al., "Narrative Framing"). Because of this, Corpus 2 included all reviews with 5 or more authenticity terms to add as many data points as possible at the lower end of the authenticity and sentiment score range, while maintaining the benefits of the frequency cutoff.

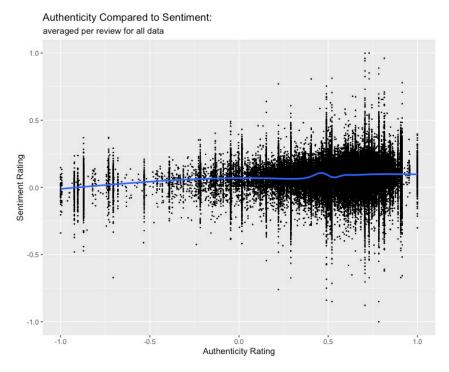


Figure 1. Average authenticity score compared to sentiment for all reviews in Corpus 1.

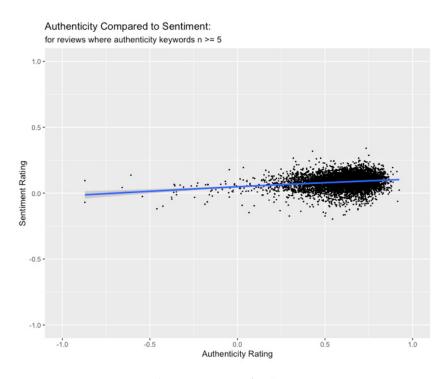


Figure 2. Average authenticity score compared to sentiment score for all reviews in Corpus 1 containing 5 or more authenticity terms.

As can be seen from <u>table 1</u> and <u>fig. 3</u>, this improved the model considerably. Expanding the size of the data set allowed for a slightly larger R2, smaller standard deviation, and showed stronger effect of authenticity on sentiment. These results show that the average authenticity rating of a review increases as the sentiment rating increases. This means that the more positive authenticity words are present in a review, the more the writer of that review uses positive

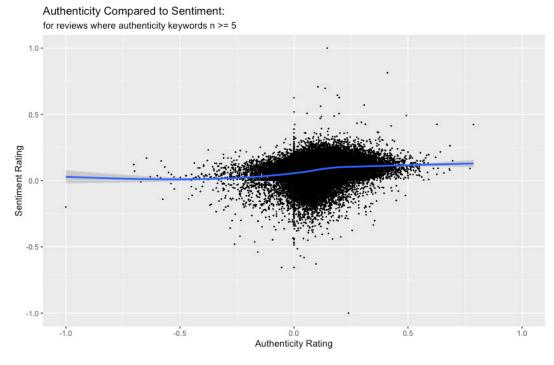


Figure 3. Average authenticity score compared to sentiment score for all reviews in Corpus 2.

Corpus	Model	Estimate	Std. Error	P-Value	F	DF	R2
Corpus 1	All Reviews	0.0473	0.0007	< 0.001	5082	283,547	0.0176
	N ≥ 5	0.0583	0.0039	< 0.001	218.9	7348	0.0289
Corpus 2	N ≥ 5	0.1467	0.0022	< 0.001	4422	71267	0.0584

Table 1. Results of the linear regression showing the predictive power of average authenticity score on sentiment score for three different data selection scenarios.

language overall. This finding adds to the body of research which has found numerous positive outcomes for organizations attached to an increased perception of authenticity, such as O'Connor et al. and Lehman et al.

While the previous analysis was done with the original lexica from O'Connor et al., the analysis of the individual subtypes was done with the modified lexica. Looking at table 2, which shows the results of the linear model comparing the four types of authenticity evaluations, a more complex picture emerges: craft authenticity emerges as the strongest predictor of review sentiment, followed by idiosyncratic authenticity. This suggests that both positive evaluations of food and the quality of production, as well as the unique and inexplicable appeal and identity of a restaurant play an important role in shaping reviewers' evaluations of their dining experience. Type authenticity plays a smaller role but still contributes positively to sentiment. These findings support the

Authenticity Type	Estimate	Std. Error	P-Value
Craft	0.081	0.005	< 0.001
Type	0.035	0.005	< 0.001
Idiosyncratic	0.055	0.006	< 0.001
Moral	-0.036	0.008	< 0.001
		R-Squared	0.045
		F	107.9
		DF	4 and 9004

Table 2. Predictive power of authenticity subtype on sentiment in Corpus 2.

assertion that reviewers seek to establish culinary capital in their texts by highlighting aspects of restaurants which contribute to social distinction—especially if reviewing a restaurant positively. While words associated with type authenticity such as *delicious* or *real* are typically used positively, affirming something as *real caramel* or *real milk* offers the reviewer less of an opportunity to display their culinary knowledge and create distinction than describing a dish as having *creative spicing*.

Contrary to the findings of O'Connor et al., which found that all subtypes of authenticity contributed positively to star ratings, moral authenticity contributed negatively to sentiment. One potential explanation for this slightly negative effect is that the positive associations which survey respondents had with words such as decent or pure when the scores were generated for the authenticity lexica of O'Connor et al. are related to abstract or prototypical meanings that are less readily transposed to the restaurant domain than those of the other authenticity types. Specifically in relation to authenticity, whether someone is evaluating an object or an agent has been found to shape the type of evaluation made (Newman and Smith 614). For example, saying someone is a decent person is a positive evaluation of authentic moral character, whereas saying that the sandwich was decent is much less positive, and could be understood as a neutral or even slightly negative evaluation of the taste or quality of the food depending on the context.6 This is confirmed by a look in Corpus 3 at collocates of *decent* (n = 6,927, FPM = 618.68), the most frequent word from the moral authenticity lexicon.7 When sorting by LogDice, the strongest left and right noun lemma collocates within a three-word window include objects such as *price* (LogDice = 9.82), *selection* (LogDice = 9.53), and

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⁶ See also Vásquez 34-5 for a discussion of lukewarm evaluations in consumer reviews.

⁷ FPM = frequency per million words

food (LogDice = 9.14), whereas references to agents who could be evaluated on moral authenticity appear less often and collocate less strongly. The only reference to an agent in the top 20 collocates was *service* (LogDice = 8.73).

In addition, positive scoring moral authenticity terms have a considerably higher relative frequency in one-star reviews (FPM = 700.63) than five-star reviews (FPM = 282.18) as well as in the LAR subcorpus (FPM = 992.54) than in the HAR subcorpus (FPM = 321.3). The highest scoring moral authenticity term, *caring* (FPM = 8.57), is indeed used to evaluate the moral authenticity of agents in the reviews in Corpus 3, but appears infrequently compared to the other terms. As noted above, since one star reviews are more likely to focus on people and their actions rather than the food, it would follow that words tied to moral authenticity, or rather a lack thereof, are more likely to appear in these contexts (Jurafsky et al., "Narrative Framing"). Moreover, types of negation which are not detectable by the current methodology, such as sarcasm or other complex forms of negation, may lead to inaccurate results—a common challenge in automated text analysis (Taboada 333). This is why tools from corpus linguistics were used to gain a deeper understanding of authenticity evaluations in context.

Corpus Analysis

Authentic cuisine and authentic fare: Evaluations with 'authentic'

To better understand the way authenticity was topicalized and evaluated in the data, and to better understand and assess the results of the quantitative metrics adapted from O'Connor et al., a small-scale corpus driven investigation was completed using Corpus 3 and the HAR and LAR subcorpora. This was partially inspired by Vásquez, who found that top down, automated text analysis techniques, such as the ones used in the previous section, can be improved with a closer qualitative corpus driven analysis (30).

To begin, a "word sketch" of *authentic* in Sketch Engine was created for the entire corpus to gain a better sense of how the most explicit reference to authenticity was used in the data. Word Sketches are particularly useful for this type of initial investigation because the data is classified into subcategories such as "nouns modified by 'authentic" or "subjects of 'be authentic". Unsurprisingly perhaps, the most frequent noun modified by *authentic* and the most common subject of *be authentic* was *food*. Other common subjects of *be authentic* include *place* and *taste*. After *food*, the most frequent nouns modified are *restaurant*, *cuisine*, *dish*, *place*, *taco*, *pizza*, *flavor*, *experience* and *taste*. Even at this early stage in the analysis, the presence of words such as *cuisine* and *experience* show the close relationship between authenticity and

⁸ For information on LogDice see Rychlý.

⁹ i.e. Michael the manager is helpful, caring and nice as well!

distinction, and indicate that consumers who style themselves as food connoisseurs expect to enjoy an 'experience' rather than just a meal (Mapes; Karrebæk and Maegaard). Likewise, *cuisine* and other synonyms for food (*fare*, *cooking*) which collocated strongly with *authentic* are distributed unevenly based on the authenticity score of reviews. All synonyms except for *fare* appeared more frequently in the HAR corpus than the LAR corpus. However the most pronounced difference was between the Germanic origin *fare* and the French *cuisine* in a manner echoing the register shift between French and Germanic origin English words noted in Mapes (281). In the HAR corpus the word *cuisine* (FPM = 25.9) appeared more than twice as frequently as *fare* (FPM = 10.63), while in reviews with the lowest authenticity scores *cuisine* (LAR FPM = 20.63) appeared less frequently than *fare* (LAR FPM = 22.51), as well as less frequently overall.

By referring to food as *fare*, authors emphasize the typical but unremarkable nature of the food served. This points to the difficulty in using type authenticity as a means to build prestige—being typical, the restaurant is also not unique.

Ex. 4 If you're looking for the standard run-of-the-mill class *fare*, stay away. In fact you're better off going to pizza hut across the street. If you want to push the edge of your comfort zone, you've found the right spot. [...] Go, have fun, take a risk! (HAR, 4 stars)

In ex. 4 the reviewer uses the typicality and simplicity associated with *fare* to create a rhetorical contrast between what most people eat and the cuisine they enjoyed, constructing a basis for distinction and building culinary capital. They identify the restaurant they are reviewing as a place to "push the edge of your comfort zone" with an atypical culinary experience, and not for the culinary naive or faint of heart who might be used to less adventurous fare. This illustrates how reviewers use subtle language shifts to draw boundaries between experiences using type authenticity.

Taste and the Burden of Authenticity

Looking at adjectives used with *authentic* points us in a different direction. The most frequent adjectives used in combination with *authentic* were *Mexican*, *Italian*, *Chinese*, *delicious*, *great*, *good*, *fresh*, *tasty*, *Thai* and *Korean*, such as in in ex. 5.

Ex. 5 Highly recommended to everyone who likes HK style cooking and authentic Chinese cuisine.

In fact, many more mentions of ethnicity were included, and examining the strongest 1R collocates *authentic* of showed that mentions of ethnicity made up 19 of the top 25 strongest collocates when sorted by LogDice. Together these data indicate that lay concepts of authenticity are closely intertwined with ethnicity, and that these evaluations often concern type authenticity.

When most explicitly evaluating authenticity, reviews are concerned with the taste of the food as an authentic representation of ethnic cuisine. Newman and Smith's model suggests that reviewers are assessing authenticity in this manner according to an internal reference, in this case based on their own history of dining experiences and evaluating the fit of the taste of the food to a specific category.

Therefore, most of the food judged explicitly on authenticity is food which is marked: perceived by the reviewer as being ethnic cuisine of some kind and therefore subjected to an additional evaluation other than tasting just good or bad. This is oriented to explicitly by reviewers who chain evaluations together such as *authentic and delicious* or *authentic and amazing* in ex. 6 (already included as Example 1 above):

Ex. 6 This is the best pho you will ever have. They are straight from Vietnam, family owned, no msg, authentic and amazing. Been to los [sic] Angeles, little Saigon in Westminster, and all over California. This is by far the best. (5 stars)

In this excerpt, the reviewer gives us a list of attributes which contribute to their evaluation of the restaurant as authentic. This encompasses the assumed ethnicity and history of the people who own the restaurant (i.e. *straight* from Vietnam, emphasizing a close connection to the country where the cuisine originates), the type of business (family owned vs. chain) as well as their cooking techniques (no MSG), therefore evaluating the restaurant in terms of type, moral, and craft authenticity. In the eyes of the reviewer, these attributes not only contribute to the Pho tasting *amazing* but also legitimize the taste as *authentic*. While reviewers also occasionally evaluated American cuisine in terms of authenticity, the only references found in the data from the United States in connection with authenticity mentioned regional cuisines, which can also be considered culturally marked (*Chicago*, *BBQ*, *Southern*).

Restaurants seen as producing "non-American" cuisine are therefore placed under a burden of authenticity, where food must be perceived as authentic while also being non-threatening and not too strange. If the reviewer in ex. 6 found out that the owners were not from Vietnam, or that it was a franchise, they might also revise their opinion of the taste or be inclined to account for their positive evaluation despite a potential lack of authenticity, as in ex. 7:

Ex. 7 OK, I don't want to hear that PJ Cheung's¹⁰ is not authentic Chinese.....everybody knows that. The family enjoys coming here. (LAR, 3 stars)

¹⁰ Names appearing in the data have been changed.

Here, the reviewer defends against imagined criticism for their positive evaluation of the restaurant despite its inauthenticity. This insulates the reviewer from criticism, since it is the family and not the reviewer that enjoys the restaurant, while also marking family enjoyment as a more salient evaluative criteria than authenticity, which would typically be the most salient evaluative criteria for an ethnic restaurant.

If reviewers are not able to integrate the taste or experience into their expectations, they may provide a justification for their negative review by ascribing this mismatch to different cultural norms or standards between them and the ethnic group represented, describing the food or restaurant as being too authentic. This dynamic can be seen in one reviewer's justification of their dislike of an unfamiliar dish in ex. 8.

Ex. 8 croquetas - we weren't sure what these were because there wasn't a description on the bar menu. Unfortunately, as soon as I took a bite I spat it back out into my napkin. Maybe this was a little too authentic for me. (2 Stars)

The reviewer in the above example was clearly somewhat self-deprecating when declaring that the dish they spat out was "too authentic"—since they admit unfamiliarity with the cuisine they are eating, they blame themselves for not being able to adequately judge or appreciate the food. Nonetheless, describing the food as *too authentic* emphasizes the mismatch between their expectations and the unfamiliar food they received, which contributed to their negative review. This also plays a role in ex. 9 below, which is an extract from a longer review where the author describes seeing the chef re-serve food they rejected to other customers.

Ex. 9 Since we were sitting on the line, we watched the server take it back to the Chef Tournant and show him – he took the plate, walked around to the wok side of the line - added what was left on our plate (that we'd returned) and put it on another order. [...] Sadly as a result, this restaurant became a bit too authentic for my repeat business...

While the conclusion may likewise be a bit tongue-in-cheek, the reviewer's focus on authenticity is telling. The association of an unhygienic practice with 'authenticity' in the context of a Chinese restaurant draws on a long history of discourse in the United States which stigmatizes Asian cooking practices in general and Chinese cuisine in particular as exotic, deviant and unclean (Mosby 135). By referring to the restaurants as too authentic, both reviewers are discursively constructing a boundary between themselves and the readers of the review as part of the hegemonic culture on one side, and the culture represented by the cuisine they are eating on the other. The examples above illustrate the double-bind restaurants are placed in by the burden of authenticity: ethnic restaurants which match consumers preconceptions of

Top 25 Keywords by Semantic Domain

Domain	HAR Corpus	LAR Corpus Surprise, Zapps	
NAMES	ABC, Dora, Butterfly, Erika		
FOOD: ETHNIC OR CACHÉ	kebabs, agua, s'mores, broccolini, carbonara, chilaquiles		
FOOD: PROVENANCE OR TYPE	hangar, Ethiopian, pacific, squeezed	frosty, uneaten	
EVALUATIVE WORDS	thoughtful, talented, 10/10, hospitable, inventive, scrumptious, welcoming, beautifully, delectable	(a) bust, filthy, rudely, downhill, disrespectful, rudeness, miserable, horribly	
EMOTION WORDS		pissed (off), grossed (out), tick (off),	
NARRATIVE WORDS	celebrated, complementary	refund, poisoning, attempts, denied, file, arguing, gloves, behavior, repeated, insult	

Table 3. Top 25 keywords when comparing HAR and LAR subcorpus from Corpus 3, arranged by semantic domain and by keyness according to difference coefficient. Words also appearing in the authenticity lexicons have been removed.

type authenticity are praised for it, but a negative experience may just as well be ascribed to (taste) preferences or cultural norms of the group represented by the restaurant being reviewed. While infrequent in the data (n = 4), these examples provide an interesting insight to the ways in which type authenticity judgements interact with prior beliefs and prejudices. As Lehman et al. note, "authenticity is a good thing—so long as the referent carries appeal" to the consumer (22).

Keyword analysis: authenticity types and distinction

In the next phase of the analysis, I computed keyword lists for the HAR and LAR subcorpora by comparing them to each other in turn. This was done primarily to provide a more detailed understanding of the types of discourse uncovered by high and low authenticity scores, and it acts as a check on the quantitative methodology used above. For example, while type authenticity came to the foreground in the previous discussion of the realization of evaluations using *authentic*, craft and idiosyncratic authenticity showed more of a positive effect on sentiment than type authenticity. By examining how authenticity is evaluated in context in subcorpora made up of either very high or very low authenticity scores, we will more effectively be able to answer RQ2.

<u>Table 3</u> shows the results of the keyword analysis. Since words which are included in the lexicon of O'Connor et al. are the basis of the authenticity scores which were used to create the two subcorpora, I removed them from this analysis and the next keyword was selected until 25 keywords per subcorpus was reached. The full keyword rankings by difference coefficient including any keywords from the authenticity lexica are in <u>Appendix 2</u>.

There are a number of differences which emerge between the two keyword lists in the analysis. Globally, there is a clear contrast in the emotional tenor of the two lists. The keywords from HAR reviews are clearly more positive overall. Words reviewers used as part of narratives illustrate this fundamental difference, with words such as *celebrated* or *complementary* signaling more positive experiences than *denied* or *refund*, as can be seen by comparing ex. 10 and 11.

Ex. 10 After my meal, I was brought some *complementary* and homemade coconut-pineapple ice cream. F@*\$ing delicious. Thank you Chippy's. I will be back. (HAR, 5 stars)

Ex. 11 I wasn't looking for a refund or freebie, but he didn't even offer one, just denied all accountability... (LAR, 1 star)

The category of EVALUATIVE WORDS contains keywords which were used in explicit evaluations, such as typical evaluative adjectives and adverbs, as well as some more creative evaluative resources like 10/10 or a bust, as in It was a bust of a dinner. Comparing the HAR and LAR keyword lists reveals an absence of positively connoted evaluative words in the top keywords of the LAR reviews. Words in this category could potentially be used to expand the authenticity lexica, as they are often tied to one of the four authenticity types. Evaluative words in the LAR corpus such as miserable and disrespectful, as in ex. 12, evaluate the behavior of agents and describe a perceived lack of authenticity in their actions, and are therefore a negative evaluation of moral authenticity.

Ex. 12 The waiter, an older man perhaps in his 60s, was downright *miserable*. He took our order and was reluctant to offer any information about any of the choices. (LAR, 1 star)

In the HAR corpus, evaluative resources such as *thoughtful*, *welcoming*, and *hospitable* indicate sincerity in the actions of employees, and therefore indicate positive moral authenticity.

Ex. 13 Janine and her team more than exceeded our expectations! The dishes she created were *thoughtful*, inspired and absolutely delicious! (HAR, 5 stars)

Ex. 14 The service here is warm and *welcoming* (they are actually Thai!). (HAR, 5 stars)

ex. 14 is particularly interesting because of the causal relationship the reviewer draws between moral and type authenticity: the warm welcome is all the warmer because the staff at the restaurant are actually Thai, and so much like in ex. 6 the lamination of type and moral authenticity strengthens the overall perception of authenticity by the reviewer. Craft authenticity was also emphasized by items such as *talented* and *beautifully*, which collocated

strongly with participle adjectives such as *presented*, *decorated*, *plated*, and *crafted*. These lexical resources emphasize the skill tied to the preparation of the food or the design of the restaurant. Finally, the use of *inventive* was tied to evaluations of idiosyncratic authenticity and *scrumptious* primarily to type authenticity.

One domain which was unique to low authenticity reviews in this analysis was EMOTION WORDS. These three verbs are all colloquial ways of expressing strong negative emotional reactions either to the behavior of others, to the food, or to some other aspect of their experience. As already noted, this feature of negative reviews was observed more generally by Jurafsky et al. from which they concluded that "one–star reviews are narratives of negative emotion, stories about something bad that happened involving what other people said and did" (Jurafsky et al., "Narrative Framing"). Likewise, the emotion words in the present data were tied to negative interpersonal experiences or where reviewers felt the moral order or cultural norms had been breached, such as in ex. 15.

Ex. 15 Can't complain to anyone when your server is the owner and on top of that she charged us for the "so called extras" boy was I *pissed*. Told her we'll never go back to this cheating place again.

Even the verb *grossed out*, which on a surface level appears to directly reference a strong negative gustatory reaction, was most often used as part of a narrative where being grossed out was the reaction to or result of moral transgressions.

Ex. 16 After only a couple of bites I was *grossed out* by the whole thing, I turned and gave it to my dog. Sub Factory was a total waste of my money and time. Note: When you own a little independant [sic] food chain, you are supposed to "kick butt" and go the extra mile with your food, and your customers. I wasn't satisfied or impressed as a customer, I will NOT be back, not even for free food, it's that gross...

In Example 16, the initial target of the evaluation is the taste of the food, but the reviewer quickly shifts to expressing moral outrage. In the aside, the reviewer accuses the business owner of a lack of moral authenticity since the actions of the business owner did not live up to the criteria by which the reviewer evaluates independent local businesses: not only did the food not taste good, but the reviewer felt there was no sincere effort in the production of the food or customer service, since the businesses did not go "the extra mile". This demonstrates how taste can also become a moral matter for reviewers when evaluations are negative.

Finally, the two domains FOOD: ETHNIC OR CACHÉ and FOOD: PROVENANCE OR TYPE illustrate a clear overlap between previous findings concerning authenticity and social distinction and those of O'Connor

et al. For example, *frosty* in LAR reviews is used to describe the drinks or glasses the drinks are served in and echoes the more explicit language found in the menus of less expensive restaurants. Keywords in this category from the HAR corpus on the other hand were associated with the provenance (*pacific*), preparation (*squeezed*) or type (*hangar*, *Ethiopian*) of food. In addition, specific dishes mentioned were mostly foreign or foreign sounding words, such as *agua* (*fresca*), *chilaquiles*, *carbonara*, or *broccolini*. These findings closely echo Jurafsky et al. who noted that the most expensive restaurants in their data focused on natural authenticity and used more complex and sophisticated language (Jurafsky et al., "Linguistic Markers"). This is also seen clearly in ex. 17, where there is considerable specificity in the description of the dish as well as a focus on the skill involved in the preparation of the dish. Scallops are not just cooked, but *perfectly seared* and *silver dollar-sized*, and they were not just served with broccolini but *nestled* on a *bed* of broccolini.

Ex. 17 I ordered the scallops (on his recommendation) and they were delicious. Silver dollar-sized, perfectly seared, nestled on a bed of broccolini, sweet grape tomatoes, apricots, and capers.

Taken together, these findings show that reviewers who use more positive authenticity words also emphasize aspects of their experience and types of authenticity which have been linked to more expensive restaurants, thereby drawing attention to their own culinary capital. This also suggests that craft authenticity may have had the strongest effect on review sentiment because it is the type of authenticity which provides the most effective means for reenforcing class distinction.

Discussion and Conclusion

Overall, the results of the quantitative and qualitative analyses show that authenticity has a net positive effect on sentiment. Reviewers who viewed their overall experience as positive also tended to view the restaurant they visited, the food they ate, or the experience they had as more authentic. While this finding may seem trivial, it is not always treated by reviewers as a foregone conclusion, as the presence of phrases such as *authentic and awesome* and ex. 7 illustrate. This finding was strengthened by looking at moments where the burden of authenticity comes to the foreground: restaurants which serve 'ethnic' cuisine undergo additional scrutiny in terms of their authenticity, which is often treated by reviewers as a separate evaluative category. While previous research has investigated the relationship between authenticity, increased star ratings and price, sentiment analysis is such a ubiquitous technique in computational approaches to language data that it was instructive to compare the two approaches and ask what authenticity adds to our understanding of evaluation in restaurant reviews. From this quantitative comparison we see the small but discernible positive effect that authenticity has on sentiment.

Different types of authenticity also showed different contributions to the overall sentiment polarity. As expected, craft authenticity showed the strongest impact on sentiment, while contrary to earlier findings, moral authenticity had a small negative impact on sentiment. The potential reasons for this are varied, and likely it is a combination of factors: both the fact that negative reviews are more likely to discuss agents and issues of moral behavior, as well as the domain specific meaning of some of words in the moral authenticity lexicon, such as *decent*.

While it was expected that type and craft authenticity would have the largest effect on sentiment and that reviews with higher authenticity and sentiment scores would mostly contain evaluations of type and craft authenticity, this did not prove to be the case. Instead, craft and idiosyncratic authenticity showed the greatest effect on sentiment. This was also borne out by the corpus analysis, which mostly found evaluative resources related to idiosyncratic, craft, and moral authenticity in the subcorpus of reviews with high authenticity scores. When viewed through a Bourdieuian lens however, we can see that type authenticity provides a poor basis for distinction, as having professional staff cooking with genuine ingredients would be assumed for any high-class restaurant. Therefore, emphasizing craft and idiosyncratic authenticity provides a stronger foundation for distinction, both for the restaurant and for the reviewer to establish themselves as a knowing connoisseur. These findings provide further evidence that the effort of restaurants to create value through emphasizing certain types of authenticity according to their target customer are picked up on and embraced by consumers as part of their own identity construction.

The corpus analysis also provides insights which could be used to improve the detection of both positive and negative authenticity evaluations. Regarding moral authenticity, this might involve including words like welcoming, thoughtful or miserable. These words were not likely to have been included by the methodology used to generate the authenticity lexica because they are not tied to any prototypical understanding of authenticity. However, their use in context illustrates their connection with the concept of moral authenticity in the restaurant domain. In addition to this, the corpus analysis revealed other resources that may not have originally been considered in the construction of the lexica but which, through the keyword analysis, nonetheless show a relationship with one of the authenticity subtypes: multi-word phrases such as go the extra mile, verbs like pissed or ticked off, and other resources like first names were all components of positive or negative evaluations of authenticity. Including some of the evaluative resources discussed in the previous sections might improve the accuracy of the authenticity lexica, and with an expanded corpus analysis it is possible that many more terms could be added. The challenge in this case is to expand and improve the utility of such specialized lexica to detect discourse about authenticity in all of its various meanings, while avoiding introducing too much noise into the data or watering down

the concept of authenticity so that it is no longer analytically useful. While the bulk of this work remains for the future, I believe that by remaining close to the data we can more fully understand how authenticity evaluations are realized *in situ* and avoid too much reliance on dictionary definitions or preconceived notions of authenticity, while maintaining its utility as an analytical construct.

Of course, this study has several limitations itself. For example, limiting the statistical analysis to reviews with only 5 or more terms from the authenticity lexica resulted in the loss of a considerable amount of data. However, this was seen as a necessary trade off to ensure the quality of the data included in the quantitative analysis. Moreover, I was not able to integrate the evaluative resources discussed in the corpus analysis into the quantitative analysis to test if their inclusion would improve the performance of the lexica, and so this work will have to be undertaken at a later date. In addition, the dataset only included reviews of businesses in the Unites States. It is likely however, that different cultures and different languages view the concept of authenticity differently, and so other frameworks will need to be developed to account for this. Nevertheless, I hope that this study could shed some light on one particular type of evaluation, that of authenticity in restaurant reviews, and in doing so to provide further evidence for the deep and complex way in which all evaluations are tied to the context and social order in which they are produced.11

Dataverse repository: https://doi.org/10.7910/DVN/9JVSMI

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Appendices

Moral Auth.

Craft Auth.

Idiosyncratic Auth.

Type Auth.

Moral Auth.			
word	score		
caring	90		
moral	85		
inspiring	82		
pure	82		
ethical	78		
truthful	78		
decent	76		
heartful	76		
wholesome	76		
faithful	72		
integrity	72		
substantial	67		
virtuous	67		
righteous	63		
quintessential	58		
original	49		
iconic	47		
traditional	44		
eccentric	38		
invented	38		
historical	36		
unpretentious	36		
old-fashioned	34		
unmistakable	34		
typical	33		
extroverted	29		
ersatz	18		
inauthentic	15		
bogus	14		
hoax	11		
false	8		
fake	6		

Craft Auth.			
word	score		
creative	84		
genuine	83		
skillful	83		
expert	77		
fresh	77		
ambitious	76		
artful	75		
master chef	73		
new	72		
craftsmanship	69		
modern	67		
traditional	67		
invented	63		
quintessential	58		
authoritative	56		
idiosyncratic	40		
peculiar	32		
unassuming	31		
outlandish	30		
imitation	23		
cheat	17		
untraditional	17		
phony	16		
feigned	15		
phoney	15		
bogus	14		
quack	12		
hoax	11		
forgery	10		
dishonest	9		
scam	9		
false	8		

Idiosyncratic Auth.				
word	score	word	score	
unique	92	replica	32	
quirky	87	assumed	30	
interesting	86	artificial	23	
idiosyncratic	80	imitation	23	
offbeat	76	deceptive	17	
iconic	73	unauthentic	16	
original	73	impostor	13	
peculiar	71	faked	8	
sincere	71	sham	5	
special	70	dishonest	2	
atypical	69			
awesome	68			
eccentric	67			
outlandish	67			
unusual	67			
truthful	66			
unconventional	65			
historical	63			
unorthodox	59			
unpretentious	58			
unassuming	50			
expert	48			
master chef	44			
authoritative	43			
decent	43			
professional	42			
pretentious	34			
usual	34			
moral	33			
normal	33			
orthodox	32			

word	score
delicious	83
genuine	83
real	83
skilled	81
authentic	79
professional	79
honest	77
special	73
artisan	71
old-fashioned	71
awesome	68
legitimate	68
usual	66
normal	65
typical	62
unmistakable	61
replica	51
assumed	47
righteous	46
atypical	42
unusual	39
quirky	36
offbeat	32
unconventional	31
unorthodox	25
ersatz	18
unreal	15

Appendix 1. Modified Authenticity Type Lexica from O'Connor et al.

humbug

6

Keywords: HAR compared to LAR

G2 Feature DC **FPM Target** FPM Ref. abc 1.00 27.17 7.35 0.00 1.00 20.49 0.00 dora 6.83 0.97 31.72 10.50 0.14 butterfly 0.96 20.77 7.35 erika 0.14 creative 0.94 672.82 275.22 9.06 0.93 20.39 8.40 0.28 kebabs 2030.59 852.44 unique 0.93 30.28 thoughtful 0.92 30.69 13.66 0.57 0.92 13724.64 6118.84 256.40 delicious 0.91 34.26 15.76 0.71 hanger celebrated 0.90 46.73 22.58 1.13 0.90 20.99 10.50 0.57 interesting 0.89 1019.26 531.52 30.99 0.88 21.57 11.55 0.71 talented ethiopian 0.87 43.02 24.69 1.70 pacific 0.86 19.31 11.55 0.85 10/10 25.25 0.86 15.23 1.13 s'mores 0.86 23.81 14.71 1.13 genuine 0.86 130.90 80.88 6.23 authentic 0.85 1689.65 1057.27 82.92 broccolini 0.85 20.12 12.61 0.99 hospitable 0.85 28.33 17.86 1.42 inventive 0.85 35.12 22.58 1.84 0.84 carbonara 27.78 18.38 1.56 scrumptious 0.84 61.87 42.02 3.68 fresh 0.84 5844.85 3965.95 347.67 squeezed 0.84 77.78 53.05 4.67 chilaquiles 0.84 20.47 14.18 1.27 0.83 233.76 14.72 welcoming 162.82 113.32 beautifully 0.83 81.41 7.64 complemented 0.83 26.86 19.43 1.84 delectable 0.82 52.39 38.34 3.68

Keywords: LAR compared to HAR

Feature	DC	G2	FPM Target	FPM. Ref.
refund	1.00	108.69	59.88	0.00
false	1.00	82.95	45.69	0.00
poisoning	1.00	71.51	39.39	0.00
scam	1.00	50.54	27.84	0.00
attempts	1.00	32.42	17.86	0.00
denied	1.00	24.80	13.66	0.00
uneaten	1.00	20.98	11.55	0.00
bust	1.00	20.03	11.03	0.00
deceptive	1.00	20.03	11.03	0.00
frosty	1.00	19.08	10.50	0.00
surprise	1.00	19.08	10.50	0.00
file	1.00	19.08	10.50	0.00
pissed	0.99	85.13	52.00	0.14
filthy	0.99	68.37	42.54	0.14
arguing	0.98	26.18	18.38	0.14
gloves	0.98	25.28	17.86	0.14
rudely	0.98	48.76	34.66	0.28
downhill	0.98	68.68	49.37	0.42
disrespectful	0.98	22.60	16.28	0.14
imitation	0.98	67.79	48.85	0.42
zapps	0.98	21.71	15.76	0.14
grossed	0.98	20.83	15.23	0.14
tick	0.98	19.94	14.71	0.14
rudeness	0.98	19.06	14.18	0.14
behavior	0.98	33.73	25.74	0.28
repeated	0.98	33.73	25.74	0.28
miserable	0.98	33.73	25.74	0.28
unreal	0.98	66.57	50.95	0.57
insult	0.98	28.52	22.58	0.28
horribly	0.97	26.80	21.53	0.28

Appendix 2. Keywords from HAR and LAR subcorpora

Keywords from the authenticity lexica (in italics) were removed from the analysis. DC = difference coefficient; FPM = frequency per million; Ref. = reference corpus

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