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Valuating Words: Semantic Practices in Web Search Advertising

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Abstract

Much like in traditional media contexts, advertising is a key source of revenue in digital media industries. One popular form is web search advertising, which is targeted based on words. But there has been little critical empirical research into how web search advertising is achieved in practice. Based on in-depth interviews with web search advertising professionals, this article examines how these professionals make sense of Google's "linguistic capitalism." It identifies three salient contextual factors that influence the valuation of words (locality, semantic footprints, and governance) and four semantic practices that advertising professionals mobilize to grapple with the meaning of words when (e)valuating them (attaching meaning, ascribing intention, algorithmic association, and measuring relevance). It also reveals the importance of semantic practices for the commodification of words, which depends on, and ultimately reaffirms, Google's semantic power. Overall, this article contributes to the critical literature on web search and meaning-making in algorithmic media.

Keywords

algorithmic media, semantic practice, online advertising, advertising, web search, Google, valuation

Introduction

Powerful digital media technology companies like Google are increasingly involved in the "semanticization" of digital domains (Iliadis, 2022, p. 15). That is to say, they interpret the meaning of words and associate them with relevant information and options for interaction (Iliadis, 2022, p. 21). Much like in traditional media contexts, advertising is a key source of revenue in digital media industries (Bermejo, 2009; Napoli & Caplan, 2017). Web search is no different, generating about US$160 bn of revenue for Alphabet in 2022 (Farley, 2023). This phenomenon has been termed "linguistic capitalism" (Kaplan, 2014; Thornton, 2016, 2018). Linguistic capitalism consists of a "linguistic market" (Kaplan, 2014, p. 59) built around web search and advertising that treats words as "linguistic data" (Thornton, 2018, p. 435) and associates them with monetary values, thereby commodifying them (Lee, 2010). But whereas the public-facing side of web search—specifically, search users and search results—has attracted much scholarly attention, only a few empirical studies have focused critically on the behind-the-scenes business of web search advertising (most notably, Röhle, 2007; Sweeney, 2013; in a more exploratory vein, Jobin & Kaplan, 2013). However, the importance of this particular group of Google users has been widely acknowledged (Bilić, 2016; Crain, 2014; Feuz et al., 2011; Haider & Sundin, 2019; Rieder & Sire, 2014; Vaidhyanathan, 2011; Van Couvering, 2011). Their practices have a significance above and beyond those users' own professional activities, as they occupy a central role within Google's business model and algorithmic system. Studying advertising professionals' practices can teach us about Google's semantic power, since "search engines, and Google's powerful position in particular, are negotiated and stabilized in social practices" (Mager, 2012, p. 2).

This article therefore investigates the practices of web search advertising professionals as users of Google's algorithmic system and examines how they stabilize the search giant's semantic power—its "power to name" (Iliadis, 2022, p. 8; see also Noble, 2018; Olson, 2002). The analysis builds on work in science and technology studies (STS), in particular theories of the social construction of technology, which have demonstrated the extent to which users' practices impact on and shape technology

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(Bijker et al., 1987; Oudshoorn & Pinch, 2003). As such, the focus will not be on analyzing digital media technologies or their semantic power, but rather the contexts and user practices that stabilize them. I therefore conducted ethnographic interviews (Seaver, 2017) to explore how web search advertising professionals attribute value to words and how they account for the meaning of words when interacting with an algorithmic system. As the activity of advertising professionals is deeply intertwined with Google's political economy, studying their practices contributes to a better understanding of how the "commodification of words" (Lee, 2011) is achieved in context.

I begin my exploration of the circumstances and practices of web search advertising with a critical literature review on web search advertising and show how a particular advertising logic that transforms queries into keywords fuels the political economy of Google's linguistic capitalism—which in turn makes it possible for both Google and advertising professionals to attach monetary value to words. I then introduce the concept of valuation (ascription of worth or value) and tie the valuation of words to the notion of semantic practices that can be derived from the interviews. This is followed by a section on methodology, where I explain why semi-structured interviews are the best fit for my inductive approach. I then present the empirical findings and analysis in two sections. The first introduces three factors that are salient to the contexts in which words are valuated (locality, semantic footprints, and governance); the second describes four types of semantic practices commonly employed by advertising professionals to (e)valuate words (attaching meaning, ascribing intention, algorithmic association, and measuring relevance). Finally, I discuss how these semantic practices contribute to stabilizing the political economy of web search engine advertising and, consequently, the semantic power of Google.

The Logics of Web Search Advertising

The Characteristics of Web Search Advertising

Web search advertising is a form of online advertising. The specific features of online advertising emerge out of the affordances of the medium—automation, scalability, and access to an abundance of data—and a modified industry structure that privileges vertical integration (Bilić & Primorac, 2018; Turow, 2013): Digital platforms provide advertisers not only with audiences but also with technological infrastructure and relevant metrics (Lee, 2011; Thornton, 2016). These characteristics also apply to web search advertising.

There are, however, two main features of web search advertising that distinguish it from other forms of online advertising. First, web search advertising is embedded within the much larger ecosystem of web search, which is itself characterized by complex social and political dynamics (Becker & Stalder, 2009; Halavais, 2009; Introna & Nissenbaum, 2000; Lewandowski, 2012; Noble, 2018; Spink & Zimmer, 2010). Web search engines, in general, and Google, in particular, are deeply intertwined with changes in how people generate information (Roberts, 2008; Ziewitz, 2012) and how they search for and access it (Vaidhyanathan, 2011).

Second, the targeting logic of web search advertising is primarily based not on demographics but on words (Fuchs, 2011; Kaplan, 2014; Van Couvering, 2009). The online advertising platform Google Ads, formerly known as Google AdWords, generates most of the company's revenue by pairing search queries with text ads and displaying those ads to search users (see, for instance, Crain, 2019; Lee, 2010). Word-based targeting contrasts sharply with other types of targeting, in which advertising professionals rely on audience metrics to determine where they want their ads to appear. These demographic characteristics are traditional proxies for what advertising professionals know or imagine their audiences' interests to be (Bermejo, 2007, 2009; Napoli, 2003). For example, knowing that the typical *New York Times* reader is 45 years old, male, and a business decision-maker (*The New York Times*, n.d.) does not attract advertisers because of these demographic characteristics themselves, but because they serve as a proxy for a particular amount of spending power and typical fields of interests that correlate with this particular subset of the general population. Being able to target people based on words represents a substantial shift in advertising practices (Einstein, 2017; Turow, 2013, p. 168).

From Queries to Keywords

At its core, the logic of Google's algorithmic system treats query words, rather than demographic characteristics, as proxies for users' interests and intentions (Battelle, 2005; Goel et al., 2010). Even though it "cannot in actuality capture the meaningful, inalienable aspects" (Jarrett, 2014, p. 22) of someone's intentions, the ascribed intentions will still be treated as constitutive of their online experience (Jarrett, 2014, p. 25).

Due to the digital affordances of automation and scalability, web search advertising can offer advertising professionals an unlimited choice of words and phrases to base their targeting on. As Lee (2011) remarks, "Keywords are not exhaustive—an indefinite number of advertising professionals can bid for the same keywords. Advertisers may have to pay a higher price for popular keywords, but keywords will never be sold out" (Lee, 2011, p. 440). We might say that it is no longer necessary to determine the typical demographic characteristics of people searching for these expressions.[1] In practice, this understates the "resilience of [the] conventional type of segmentation" (Bolin & Andersson Schwarz, 2015, p. 9) as well as the individual tracking and personalization that Google also undertakes in parallel based on personal data. Still, for the purpose of demonstrating the underlying *logics* of search advertising, whether or not Google also

tracks and personalizes ad targeting does not alter the fact that the fundamental dynamics of web search advertising and the narratives surrounding it are significantly different from traditional demographic targeting. Web search advertising professionals could theoretically target people solely according to what they type into Google's search query field. Their demographic characteristics are, in principle, of little interest as long as they search for what advertisers have to offer.

Google itself advertises its service as follows: "Reach the right people at the right time. Your business gets found by people on Google precisely when they're searching for the things that you offer" (Google, n.d.-b). According to Google's own examples, for a coffee shop owner the right people are people who search for "coffee shop in new york," for a yoga studio it is people who search for "beginner yoga classes," and so on. Web search advertising affords advertising professionals the ability to target people based on words, without having to categorize them. It collapses the temporal gap between profiling and targeting. As a query word used in web search, "yoga" calls into being the audience it is a proxy marker for. To put it another way, keywords convene the very public they represent (see also Donovan, 2018).

As search queries become the primary defining entity for "interest," knowing your audience becomes less important for targeting. Accordingly, the meta-information that most strongly influences advertising professionals' is no longer information about their audience, but rather information about keywords. Whereas audience metrics are provided and certified by third-party institutions, keyword metrics are accessed within the web search advertising platform and provided by Google (Lee, 2011, p. 439).

Google's Keyword Planner (KWP), a cornerstone of the web search advertising platform, displays meta-information about certain keywords on demand and suggests related keywords (Thornton, 2018). The expression "keyword" is, incidentally, almost never used (either in specialized literature on online marketing or by Google itself) to describe the words that search users enter into web search engines. According to Google's own multipage primer How Search Works (Google, n.d.-c), when people search for something, they enter a "query" or a "search query." Advertisers, on the other hand, are encouraged to select keywords. To put it another way, the same string of letters is referred to differently in the context of user search (query) than in the context of web search advertising (keyword). But despite this semantic differentiation on the surface, a convenient conflation of the two notions is embedded in the very logics of how web search advertising works: Google earns money from the implicit presumption that a query and a keyword are one and the same if they consist of the same string of letters.

This conflation is perhaps best exemplified by the KWP, which provides information to advertising professionals about the search volume of keywords. These keywords are, of course, the queries entered by users. As noted above, web search advertising is built around the premise that the words typed by web search users for their queries are equivalent to the words advertising professionals use to target people with ads if they consist of the same string of letters. Equating a typed search query with a keyword bought by an advertising professional presumes that words are devoid of meaning. As other scholars have noted, this is the logic that allows Google to earn money with words, by transforming them into a commodity that can be bought and sold independently of their context of use (Lee, 2011; Thornton, 2018).

However, because words do have meaning, the process of commodification is here less a process of eliminating meaning than one of de- and recontextualizing (Seaver, 2015) it through semantic practices.

Linguistic Capitalism and the (E)valuation of Words

Kaplan (2014) and Thornton (2016, 2017b, 2018) refer to Google's process of commodifying words as "linguistic capitalism." It has also been associated with various alternative forms of capitalism by other scholars. Most importantly, Mager's extensive work has shown how Boltanski and Chiapello's "new spirit of capitalism," which fosters not only profit-making but also commodification, is deeply embedded in the way web search works Mager (2010, 2012, 2014). In 2002, not long after Google AdWords was launched, French artist Christophe Bruno (in a project on web search advertising) called Google's web search advertising system "semantic capitalism" (Bruno, 2002). The same expression was used a few years later in a study on web search personalization (Feuz et al., 2011). Focusing on Google's PageRank algorithm rather than its advertising system, Pasquinelli (2010) used the term "cognitive capitalism." Likewise concentrating on the entire algorithmic system and its audiences, Bilić (2018) asserted that the political economy of Google can be described as "algorithmic capitalism," since "in-company labour power and worldwide audience labour produce the audience commodity and the algorithmic commodity, while the algorithmic machine accumulates surplus value for company owners" (Bilić, 2018, p. 327).

In this article, I draw on the concept of "linguistic capitalism" as used by Kaplan and Thornton to reflect on how Google's algorithmic system treats words as "linguistic data" (Thornton, 2018, p. 435). Kaplan credits Google with creating the first global, real-time, linguistic market by "[extending] capitalism to language, transforming linguistic capital into money" (Kaplan, 2014, p. 59). Thornton has built and expanded on Kaplan's theory, notably through an artistic research project, *{poem}.py* (Thornton, 2016, 2018), that calculates the monetary value of literary works[2] as a critique of linguistic capitalism. She writes,

> Although the context of words on pages have [sic] always been linked to their economic value (as a book, a telegraph, a newspaper article, for example), the manner in which data-ised

> words sit in relation to other words on web pages has taken on epistemic, economic, and even political possibilities unimaginable within the relative constraints of print capitalism. New kinds of capitalism mediate the contextual spaces of data. (Thornton, 2017a)

Thornton's characterization of words as data is consonant with Lee's account of how words are commodified. Although what is technically sold and bought in web search advertising is a potential *association* of paid ads with nonpaid web search result links based on certain words, the words themselves are presented as if they were literally goods in a market. This "commodification of words" (Lee, 2011), also prevalent in an uncritical form in much of the recent online marketing literature, calls for a better understanding of the contexts and practices that transform an algorithmically constituted association between a word and an ad into something akin to a marketplace of words.

This makes web search advertising professionals a salient user group to investigate. Scholarship on online platforms and media often uses the term "user" to refer to the human end-user, but the term should also include advertisers, developers, and researchers who use the platform in different ways (Bucher & Helmond, 2019). To have their ads displayed to search users, advertising professionals must select words and attribute a monetary value to them. It is therefore pertinent to explore these practices and seek to better understand their contexts and implications.

To conceptualize and understand the activities of web search advertising professionals, I draw on the notions of valuation and evaluation as employed in valuation studies (Helgesson & Muniesa, 2013; Lamont, 2012). Building on approaches from several disciplines, including economic sociology, STS, and history, valuation studies are "concerned with how value is produced, diffused, assessed, and institutionalized across a range of settings" (Lamont, 2012, p. 203). Within valuation studies, there exist different—and sometimes competing—definitions of evaluation and valuation (see Hutter, 2021). For my analysis, I follow the sociologist Lamont, who suggests distinguishing between evaluation as the *assessment* of value on the one hand, valuation as the *ascription* of worth or value on the other, and the umbrella term (e)valuation for cases where they are indiscernible (Lamont, 2012, p. 205).

Consequently, in this article, I often use the term valuate, which focuses on the fact that words are not only evaluated but also attributed a financial value. Like Helgesson and Muniesa (2013), I consider valuation to be an inherently social practice. My analysis is therefore less interested in the specific price tag than in the ways in which advertising professionals (e)valuate words.

Since the activity of evaluating words involves engaging with the fact that words have meaning, I call these activities "semantic practices." Following Iliadis (2022), I suggest that "'semantics' should be understood here broadly as to how people linguistically and logically create meaning for words, sentences, and texts" (p. 8). Semantic practices can be understood as a complementary dynamic to the logic of linguistic capitalism that I introduced above: Whereas Google's advertising platforms commodify words and transform them into "linguistic data" (Thornton, 2018, p. 435) devoid of context and meaning, semantic practices recontextualize words and/or imbue them with meaning.

Understanding how contextualization works within Google's linguistic capitalism is key to recognizing the company's semantic power (Iliadis, 2022). As Seaver (2015) succinctly explains, big data and algorithmic systems bring contexts into being, cause them to disappear, or make them matter. He identifies a need "to examine how the practices of big data themselves produce context in various and particular ways" (Seaver, 2015, pp. 1106–1107). Furthermore, Christin's ethnographic inquiry into everyday data practices has shown that examining "meaning-making practices" is crucial "to better understand[ing] the actual impact of algorithms in the social world" (Christin, 2020, p. 3). My study therefore investigates how "linguistic data" (Thornton, 2018, p. 435) are interpreted and dealt with by web search advertising professionals. Specifically, I consider the following questions: What contexts matter for Google's algorithmic advertising system? What are the meaning-making practices of web search advertising professionals? In what contexts, and in what ways, do they (e)valuate words? The findings will improve our understanding of linguistic capitalism and provide insights into the broader impact of an advertising system that commodifies words.

Methodology

This study aims to achieve a better understanding of advertising professionals' practices, interpretations, and experiences. Qualitative interviews are well suited to this goal (Lamont & Swidler, 2014). Within corporate settings such as the online advertising industry, opportunities for ethnographic fieldwork are extremely limited. Observation studies also have inherent limits when it comes to analyzing interaction with algorithmic systems (see Jobin, 2019). However, according to Seaver (2017), a field's limitations are inherently part of what the field is and should be treated as such. He advises us not to discount interviews as "artificial situations" but to consider them "as a form of cultural action themselves, [. . .] part of the world in which research subjects live and make meaning" (p. 8).

The "research subjects" of this study are web search advertising professionals, whom I sometimes simply call advertising professionals. I use this term to categorize people who in reality have very different job titles—such as "digital officer" or "search marketing manager" (see Table 1)—but share important commonalities in their professional activity: They, or the advertising agency they work for, explicitly offer search engine advertising as a service to various clients;

Table 1. Overview of interviewees and informants.

Study role	Job title	Job domain	Job role	Type of business	Country	Language	Gender	Age group
Interviewee	AdWords Specialist	Web search advertising	Self-employed	One-person agency A	CH	French	Male	>40
Interviewee	Head of Web Search Advertising	Web search advertising	Manager	Small digital marketing agency B	CH	German	Male	25–40
Interviewee	Expert in Acquisition Marketing	Web search advertising	Manager	Small digital marketing agency C	CH	French	Male	25–40
Interviewee	Founder and CEO	Web search advertising	Manager	Small web search agency D	CH	German	Male	25–40
Interviewee	Senior Consultant	Web search advertising	Officer	Small web search agency D	CH	German	Male	>40
Interviewee	Search Marketing Manager	Web search advertising	Officer	Big digital marketing agency E	CH	French	Male	<25
Interviewee	Head of Performance Marketing	Web search advertising	Manager	Big digital agency F	CH	French	Male	>40
Interviewee	AdWords Officer	Web search advertising	Officer	Big digital agency F	CH	French	Male	<25
Interviewee	Digital Officer	Web search advertising	Officer	Big digital agency F	CH	French	Male	25–40
Informant	Web Traffic Manager	SEO	Officer	Big digital marketing agency E	CH	French	Male	NA
Informant	Head of Digital Marketing	Digital marketing (inhouse)	Manager	Big company	CH	French	Male	NA
Informant	Digital Performance Expert	Digital strategy consulting	Self-employed	One-person business	CH	German	Male	NA

they have been certified by Google to do web search advertising; and they are the ones actually sitting in front of the screen and managing the campaigns. Hence, these advertising professionals are not employed by Google, but work in an agency setting, which distinguishes them from "advertisers," who work directly for the company whose product or service is being advertised.[3]

I used purposive sampling (Koerber & McMichael, 2008) and applied the criteria described above to identify and select potential interviewees. Advertising professionals who fit the criteria are an interesting use case from a methodological viewpoint: Since they offer their professional services to the actual advertisers, their clients, they are bound to be aware of their practices and able to talk about them. Thus, this methodological choice has the benefit of focusing on existing discourses about their activities and practices, without prompting interviewees to speak about something they have no previous awareness of. Contrary to other Google users, who may not have given a lot of thought to their interaction with Google's algorithmic system, advertising professionals are bound to be able to speak about what they do.

Before conducting the interviews for this study, back in 2015 I started following news in trade publications and attending local industry events. This turned out to be very valuable not only for gathering information but also for facilitating access to potential interviewees. Between 2015 and 2018, I contacted 16 Swiss web search advertising professionals who fit the criteria set out above via their personal email addresses. Nine of them agreed to be interviewed. All the advertising professionals I talked to identified as male. They worked at six different agencies. Three were aged over 40, two under 25, and the others somewhere in between. Six were located in the French-speaking part of Switzerland and three in the German-speaking part. In addition, I was also able to extensively interview three informants who work for digital agencies but do not conduct web search advertising campaigns themselves, and although the information they shared with me has been useful for my overall understanding of online advertising, they are not quoted as "(web search) advertising professionals" in this article (see Table 1 for an overview). Because the goal of my study is to explore the practices and interpretations of a particular group of Google users, the comparatively small number of interviews is not necessarily a disadvantage. For one, qualitative interview studies have been shown to reach saturation within the narrow range of just 9–17 interviews (Hennink & Kaiser, 2022). In addition, Crouch and McKenzie (2006) argue that sample size may not matter much for inductive or exploratory studies, as there is no sample to speak of: Sampling a subset of a population is not what guides the selection of interviewees. As such, studies do not "set out to verify [but] indicate rather than conclude" (p. 492); their findings may be based on a low number of in-depth interviews. In fact, "a small number of respondents is [. . .] the way in which analytic, inductive, exploratory studies are best done" (p. 496).

All interviews were semi-structured and lasted between 45 and 120 min. Semi-structured interviews are ideal for qualitative studies, as they avoid a rigid structure and are relatively flexible when it comes to how much depth specific topics are covered in and in what order. This makes it possible to gauge the relative importance of particular issues for the interviewees while leaving scope for other topics not explicitly mentioned by the interviewer to emerge over the course of the conversation. However, a preprepared interview guide helps provide structure and establishes in advance which topics will be addressed. Based on the focus of my study, all interviewees were specifically asked to describe their professional activity of word-based advertising; to describe their relationships with clients, peers, and the company Google; to explain how they determine what words to bid on; to detail how they bid on words; and to share their views on web search advertising and Google's algorithmic system more generally. The interviews took place in a meeting room at the interviewees' agency or, if they preferred a neutral setting, in a coffee shop of their choice. All interviews with advertising professionals were recorded with their informed consent and transcribed in their entirety. For the analysis, I anonymized the interviews and used the qualitative analysis software NVivo to code them in two coding cycles: first inductive coding and second focused coding according to thematic overlap (see Saldaña, 2013). The quotations have been translated to English from French or German.

Analysis and Findings

To explore how Google's linguistic capitalism is enacted in practice by web search advertising professionals, I focused on practices that deal with the valuation of words. In this section, I describe themes that emerged out of my analysis of the interviews. First, I identified three important contextual factors that affect the (e)valuation of words: locality, a client's semantic footprints, and governance. These factors exist independently of the advertising professionals but influence their practices. Second, I identified four semantic practices of advertising professionals: attaching meaning, ascribing intention, algorithmic association, and measuring relevance. They describe how advertising professionals valuate words within Google's algorithmic system and contribute to the political economy of linguistic capitalism (Figure 1).

(E)valuating Words in Context

This section focuses on three contextual factors that emerged as particularly salient themes from the interviews: locality, digital semantic footprints, and governance.

Locality. When first selecting keywords to bid on, advertising professionals create very elaborate semantic fields,

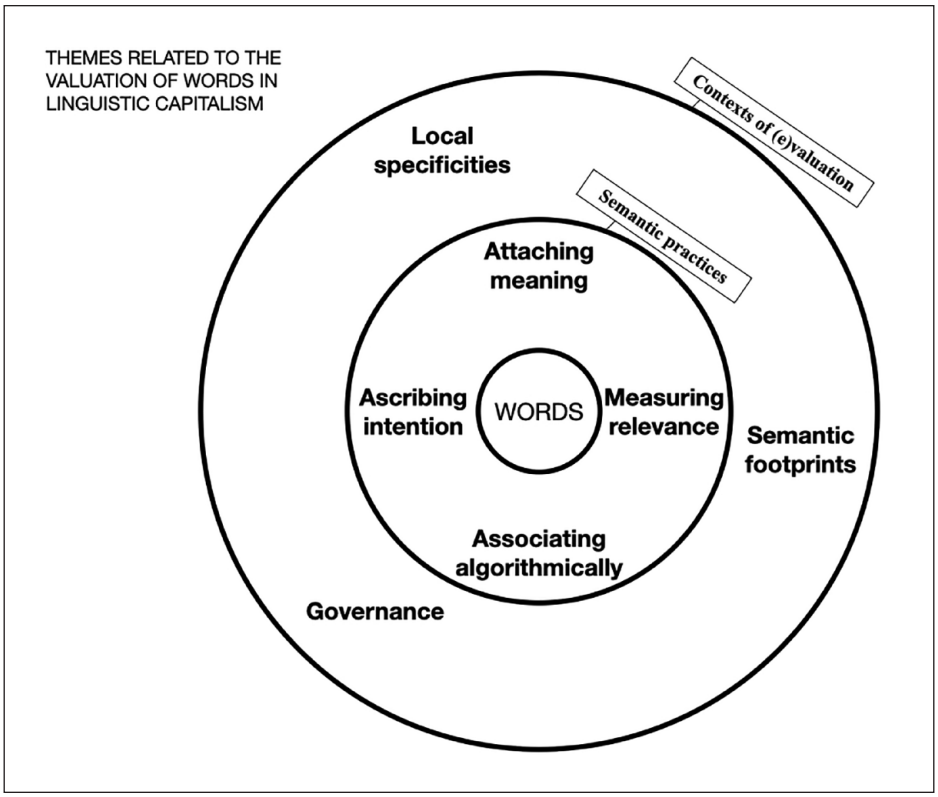

Figure 1. Themes related to the valuation of words in linguistic capitalism.

where the order of words, and even of each letter, matters tremendously. Local differences in the use of language are also relevant. One example is the distinction between "car [voiture]," which is mostly used in the French-speaking part of Switzerland, and "auto(mobile)," which is mostly used in France. The following excerpt illustrates the importance of the difference between the two words for advertising professionals:

> Let me take the very easy example of auto insurance and car insurance. It's the same thing, but there is not the same search volume. In France, people mostly search for auto insurance. In Switzerland, people mostly search for car insurance. Therefore, it makes no sense to mix up the two, even though they mean the same thing. We have distinct ad groups for auto insurance, and we have distinct ad groups for car insurance. Why? Because we will be able to have an ad that is more precise, auto insurance or car insurance, so this will maximize the score, which will lower the CPC [cost per click].

In this excerpt, the interviewee refers to the geographic and linguistic context of a web search user making a search query. It is well documented how these contexts structure nonpaid web search results (Thornton, 2017a), and as the quote shows, this also affects the practices of advertising professionals. The interviewee explains why different national language practices result in seemingly synonymous words being treated differently on the web search advertising platform. It is, however, striking to notice what his reasoning is based on: He is not arguing for the use of language to be close to the one used by the people he is targeting; rather, his argument is based on economics. This empirical vignette corroborates Lee's theoretical claim that, for Google, the semantic meanings of words barely matter: "Only the exchange value matters—that is, how much advertisers are willing to pay for a keyword when the ad is clicked" (Lee, 2011, p. 440).

In other respects, however, the meaning of words is important for advertising professionals, and this is reflected in their semantic practices. In the quote above, the advertising professional suggests that greater precision in the language he uses for certain geographic areas will result in metrics that reduce his cost per click. This happens via automated processes that are based on, and strengthen, the alignment between search users' activities and advertisers' interests. So although the advertising professional makes no mention of the target audiences' distinctive ways of using language, these are taken from web search data and embedded in the KWP metrics—metrics the advertising professional is taking into account.

Existing Digital Semantic Footprints. It is not only the contexts of search users' use of words that may influence how

advertising professionals valuate words. Advertising professionals' clients can also have an impact on the value words have through their existing semantic footprints. The expression "semantic footprint" refers to the presence or absence within Google's algorithmic system of certain words and expressions that are linked to the client. This goes beyond Google's advertising platform and includes advertising clients' website data. It is yet another element that goes to show Google's powerful position in the governance of the web and of publishers' participation (Jobin & Ziewitz, 2018; Mager, 2018; Roberts, 2008; Thornton, 2018). Before being able to valuate the words used in web search advertising, advertising professionals therefore usually conduct audits of a client's websites. Such audits inform them about the words already in use online and associated with their clients. It also requires advertising professionals to acquire domain knowledge about their clients' activities and industries. As one interviewee put it, "It's crucial to immerse yourself in the business, in [. . .] what the person is selling, the product, the service. And understand what it's all about." Another interviewee explicitly said that understanding the semantic field of their client improves their advertising activity:

> It is best if you find a "niche." So when you know the words, the jargon, then you can search, you can use the keywords that are very present but that others [i.e. competitors of the client] are not using, because it will bring down your PPC [i.e. price paid per user click].

In cases where Google already ranks a website highly for certain keywords in its web search results, associated keywords become much more valuable for the advertising professional. An ad linking to this site and targeted for the same keywords puts advertising professionals at an advantage, due to a lower cost and a higher probability of having their ad displayed to search users at a lower cost than their competitors.

The impact of semantic data from existing websites on the valuation of words in new web search advertising campaign evokes Beer's work on data coils and recursivity (Beer, 2022). Using the metaphor of a loop, he reminds us that "data processes are multiple and not singular" (p. 4). As if to illustrate this, one advertising professional confessed that he refuses clients who only want web search advertising but are not willing to optimize their website as well: "Sometimes [clients] have no dedicated webpage for their [ad] campaigns. And even if the page exists, it is often bad and needs some work. Otherwise the ad performance will not be that good." Other advertising professionals explained that they deal with "bad" existing digital footprints by means of increased advertising budgets, admitting that this favors organizations with a big budget for marketing. In any case, existing semantic footprints of clients' digital presence constitute important contextual information for advertising professionals who (e)valuate words for web search advertising.

There is a second dimension to semantic footprints, which is linked not to a client's website but to web search advertising activity overall, and shapes the advertising opportunities linked to semantic footprints. The more web search advertising activity there is overall, the more expensive it becomes to do it. One advertising professional explains this logic as a caveat inherent to the success of web search advertising: The more people understand and use web search advertising proficiently, the more expensive it becomes.

> More and more companies are realizing that it works. And the prices within web search advertising result from an auction and rise the more people participate in bidding, willing to pay. This is why it is difficult to earn money with web search advertising. In most cases, the companies that advertise do not earn money with web search advertising alone. They earn money, if they have already been in the market for some time, if they have certain market power or any unique position.

This interviewee not only claimed that the general price level tends to rise over time for everyone, but also noted certain characteristics that put advertising professionals in more advantageous positions over others. These characteristics (market experience, market power, etc.) exist outside of web search advertising but, according to the interviewee, significantly impact an advertising professional's success on the platform.

The advertising professional quoted above went on to explain in detail how startups and young entrepreneurs will most probably not be able to make money with web search advertising: Often, there is not yet a demand for their products and services, and even if there were a demand, startups usually have neither a semantic footprint nor the budget and time required to establish a successful campaign at scale. The same argument is also made very clear in the following excerpt from an interview with another advertising professional:

> Sometimes, for certain clients, because of the marketing budget, the profit margin is super tiny, so the big winners are those who manage to optimize their costs and have campaigns that are optimized enough to actually pull through. The problem is, if you're a new entrant to this hyper-competitive sector, no kidding, you have almost no chance of pulling through. Let's take hyper-competitive sectors such as private credit, insurance, things like that, even finance. If you're new and you say: I want to offer private credit for a good rate . . . Oh boy, if you want to get into that you'd better have financial muscle and a lot of money. Because you will burn money in the beginning [. . .] to test, to see what works to be able to optimize.

These examples show the larger effects of keyword-based algorithmic advertising on the valuation of words. Advertising professionals' clients might have to pay more depending on the sector they operate in. How words are evaluated is hence influenced not only by a client's own semantic footprint but also by the semantic footprint of their competitors.

Governance. Another relevant contextual factor is regulation. Legal restrictions on advertising in certain domains affect the value of certain words. On the one hand, such restrictions may translate into the outright prohibition of certain words in web search advertising. Depending on the relevant jurisdiction, this may apply, for instance, to alcohol, medical products, or adult content (Google, n.d.-a). "Anyway, in Switzerland, we cannot advertise cigarettes, and alcohol and medication are also complicated," said one advertiser. Prohibited words lose all value within Google web search advertising. On the other hand, such restrictions have effects beyond the words that are immediately associated with the relevant domains. They also influence the semantic practices around other words. Substitute expressions, for instance, can become more valuable as a consequence. One advertising professional explained that he may simply turn to words such as "wellness" instead of "medical" to "be on the safe side of [the law]." However, the more bids are placed on "wellness," the more "expensive" it becomes. This goes to show that regulations and restrictions on certain words have ripple effects beyond the restricted words themselves.

It is not only formal regulation that influences how words are evaluated, but also Google's own terms and conditions for web search advertising. Some of them are explicit dos and don'ts, as described on Google's various webpages and forums. Others are implicit and encoded in processes that are only discovered during moments of friction. One advertising professional discovered Google's protection against brand hijacking for certain organizations when he was unable to set up a web search ad campaign for his client, an international sports association. The association's name was algorithmically blocked from being used for advertising purposes. He explained that they had to contact Google to be authorized to use the association's name: "The [international sports organization] first had to request to be whitelisted by Google for me to be able to use their name."

Most web search advertising professionals explicitly mentioned Google's power to affect their own professional activity. But whereas one advertising professional expressed frustration at Google's sole authority, others consider themselves to be in a professional partnership with Google and expressed no worry or frustration. As one advertiser put it, "We have a very good relationship. They know how we tick, and that is a good thing."

Semantic Practices as (E)valuation

The valuation of words by web search advertising professionals is at the heart of Google's political economy. The interviews revealed certain semantic practices that advertising professionals use to (e)valuate words. This section describes four practices gleaned from the interviews.

Attaching Meaning. In the case of web search advertising, one central semantic practice consists in attaching meaning to keywords independently of considering their context of use, simply based on the information presented in the KWP. The interviews show that advertising professionals attach meaning to words based on specific characteristics that determine whether a word might be valuable for them or not. The following quote, in which an advertising professional mimics his thought process when interacting with the KWP, illustrates what this might mean in practice:

> If I have plus Michael plus Kors for instance, OK, I'll start like this. After a few weeks I'll have dozens or even hundreds of search terms that I'll add because there are Michael Kors shoes, Michael Kors bags . . . oh wait, this is searched for a lot. So I'll prepare a separate ad group, Michael Kors bags. I'll have Michael Kors . . . Michael Kors discount, Michael Kors sale, Michael Kors blue, and so on.

This quote may require some further explanation: "Michael Kors" is the name of a fashion label. "Michael plus Kors" is a direct translation of the string of words and signs that has to be put into Google web search advertising to buy search queries that contain both "Michael" and "Kors." "Michael Kors shoes," "Michael Kors bags," "Michael Kors discount," "Michael Kors sale," and "Michael Kors blue" are all strings that the KWP suggests to the advertising professional as potential keywords on the web search advertising platform, positioning them as actual search queries. The more granular the search query/keyword combination becomes, the more precise the targeting promises to be. More precise targeting usually results in more clicks by people who may actually be interested in buying what advertisers want to sell.

According to Callon et al.'s (2002) "economy of qualities," evaluations transform services, or products, into "tradeable goods on the market" (p. 199) when actors attach characteristics to services or products, whether they be material or intangible. The semantic practice of attaching meaning to words can be understood as one such evaluation, which makes the commodification of words possible. But different advertising professionals will not necessarily evaluate a given characteristic in the same way. Not all words have the same value for everyone. The advertising professional quoted in the excerpt above listed "discount" and "sale" as desirable keywords. He told me that, in his experience, these words often result in better click rates, which means relatively many people click on the ad and end up on the client's website. In contrast, another advertising professional said that these same keywords are typically words he would often actively exclude from his ad campaigns, because "they are parasitic." What did he mean by that? This second interviewee mainly advertises luxury goods and, according to him, words such as "discount" and "sale" are clicked by people who might not be interested in actually spending much money. These words are therefore not associated with potentially valuable customers for his clients. His explanation not only illustrates that the valuation of words is highly

contextual, but also indicates that one characteristic that may be attached to words is perceived willingness to spend money. This intersects with an evaluation based on the intention that is ascribed to the search user.

Ascribing Intention. Words are also evaluated with reference to a perceived search intention. The above example, where one advertising professional explained why "discount" and "sale" are undesirable keywords for him, shows how the meaning of certain words, or combinations thereof, depends on what intention is ascribed to the search user typing them into the query field. Such ascribed intentions are succinctly illustrated by the following quote from one of the interviewed advertising professionals: "[When selecting keywords] I ask myself, what would most people search for if they needed [my client's] service?"

This is very close to the idea of Google as a "database of intention" that Jarrett (2014) so aptly deconstructs: "The intentions that Google attributes to me are shaped by the limitations of its data capture systems" (p. 25). However, she also contends that the veracity of equating search queries with intentions may not matter in certain regards, because ascribed intentions will shape the users' online experiences whether they are accurate or not (p. 25). The practices of advertising professionals confirm this by ascribing intention. Another advertising professional compared web search advertising to other forms of online advertising as follows:

> I know no other type of advertising except for web search advertising where you have the signal of intention. You never have the intention of a person, you only have their interests and demographics. I see your "likes" on Facebook, but I never know if you are interested in general or if you need something now. Because there is no use if you are interested in sports cars but you already have them. But with Google, I [know] the intention. That is the strength of Google.

In the semantic practice of ascribing intention, dealing with meaning consists in understanding it as a proxy for future behavior and consumption. This practice enacts perhaps most closely the logic of search advertising discussed above.

Algorithmic Association. Algorithmic association is most prominently offered by Google itself. It enables advertising professionals to evaluate words based on their association with other words as identified by algorithmic systems. For example, one advertising professional mentioned several words linked to the expression "Internet connection" that were suggested by Google's KWP:

> You have many locations, like "Internet connection Geneva," "Internet connection Zurich," but also "Internet connection cheap," or "test," or "speed test," and some links are obvious but sometimes you discover associations that are . . . well, you would not have guessed them.

These associations between two or more words are not derived from any external, human categorization. They do not necessarily represent inherently logical categories, because they only exist as such due to the advertising professionals' interaction with the algorithmic web search advertising platform. Advertising professionals are prone to consider these words because an algorithmic system regards them as related. This logic is also illustrated by the quote from the previous section about the Michael Kors brand, in which the advertising professional said that "shoes" can be associated with "Michael Kors," but so can "bags," "discount," and "blue," which shows that words are evaluated in part with respect to their association with other words.

There exists a multitude of other tools and websites that are not officially part of Google, but that all provide algorithmically generated lists of related words. Such lists may be based on linguistic proximity, such as lemma-based expressions (plurals, declinations, superlatives, etc.), or on semantically related categories (a sneaker is a kind of shoe, a bag and a shoe are both clothing accessories, etc.) Most often, though, the semantic practice of algorithmic association is prompted by Google's KWP platform. As one of the interviewees put it, "We rely on [suggestions from the KWP] a lot, because Google does nothing by accident. It suggests words because it scans the whole market." This quote not only illustrates the importance of the KWP tool for web search advertising professionals. It also explicitly confirms that Google's algorithmic system can be viewed as a "market" and the company as holding a central position within it.

Although algorithmic associations may follow different logics, one common feature is that they are purportedly based on the fact that words have meaning, and they rely on algorithmic systems to generate or reveal associations with related words. In this regard, they share many characteristics with the "semantic infrastructures" described by Allhutter (2019). This category of semantic practices is thus distinct from the one based on metrics (as described in the next section), which also relies on information from within Google's algorithmic system, but is further removed from acknowledging the meaning of words.

Measuring Relevance Based on Metrics. The monetary dimension—price, or the bid suggested by Google—and other metrics play an important role in how advertising professionals make sense of the valuation of a word. Although the semantic dimension of words is less apparent in metrics alone, the meaning of words is deeply embedded in these figures. As shown above, evaluative contexts such as location, regulation, or existing semantic footprints end up being reflected in web search advertising metrics. When advertising professionals interpret these metrics, they treat them as potential algorithmic measurements of relevance (see Gillespie, 2014). Numerical values are thus evaluated as indicators of relevant words and expressions. One interviewee, for example, said,

"It requires a certain talent to extract data from analytics that are, well, interpretable." Measuring relevance based on these metrics is a semantic practice, as assessing relevance in algorithmic media is an inherently interpretative endeavor and one of several strategies for dealing with the fact that words have meaning.

The nominal price tag, which is the suggested bid on the web search advertising platform, is an important criterion, but of little value to advertising professionals in isolation. It is therefore usually put into relation to other metrics, such as the price tags of other words. For instance, one advertising professional talked about a possible strategy that consists in ignoring the most expensive words in favor of similar, less expensive words. In addition, the price tag for one word may also be evaluated in comparison with historic click-through rate, or with reference to a client's overall budget: "I generally take into account clicks, conversions, the costs per click, and, well, how much revenue they generated from how much they spent," said one interviewee. A high click-through rate for a given word signals to advertising professionals that the ads displayed on the search engine results page for this word have a higher-than-average chance of being clicked. It may thus be worth paying more money for this word, although a client's budget may be a limiting factor if it is not big enough in absolute figures to accommodate "expensive" words. Numerous recommended strategies exist for different budget and marketing objectives. They are explained in great detail in the extensive online marketing literature on web search advertising (for recent examples, see, for instance, Küçükaydin et al., 2020; Li & Yang, 2022; Yang et al., 2021) and on industry blogs.

Google also provides another metric that advertising professionals attach great importance to when evaluating words: the search volume for a given keyword/query. But as noted above, how exactly a word is evaluated according to its search volume may depend on the chosen strategy, and may differ from one advertising professional to another. On the one hand, the more a word is searched for, the more attractive it may be to an advertising professional, because that signals a bigger potential market. On the other, a word that is searched for a lot may also be less attractive to an advertising professional, because it could turn out to be "too broad" for the narrower targeting they are interested in. This latter possibility is illustrated by the following quote from one advertising professional, who complained that his client did not understand that keywords need to be tailored to a particular product or service and must be more specific than the name of the city where they are based: "A client with a beauty salon said: I want to be present when people search for 'Geneva,' just: 'Geneva.' Well . . . [shrugs]. Never going to happen." As with the monetary dimension, the aspect of search volume has different valuation logics. Words might be evaluated based on their absolute search volume, but they may also be evaluated based on their search volume relative to that of other words.

Google is central to determining relevance based on metrics. These metrics relate in particular to ads, costs, clicks, and so on, but also to the website visited and the measured behavior of search users on the website. Most of the significant numbers, whether they constitute the metrics themselves or simply provide the underlying data, are supplied by Google—not exclusively through Google web search advertising but also through Google Analytics, Google Webmaster Services, and so on. The more Google services are used (by advertising professionals and their advertising clients), the more numerous and granular the reports on metrics become. Most notably, any type of valuation based on the monetary value of words, or their search volume, is grounded in automated calculations and the metrics produced within Google's own platform. This makes web search advertising very different from traditional media advertising, where relevant data such as audience metrics are certified, or even produced, by third-party organizations.

Over time, metrics and reports play the most significant role in evaluating words. Indeed, once a campaign is running, advertising professionals no longer focus on much else besides metrics. As one interviewee put it,

> We [at the agency] have learned to not value our own opinion too much once a campaign is running. The advantage of algorithmic advertising is the abundance of data. And if the data [about the performance of a particular word or expression] are good, we continue. If the data are not good, we adapt. This is the reason why campaigns should improve over time. Not like [a campaign] in traditional advertising, which needs to be at its best at the start.

The quote above illustrates why clients with big budgets have an important advantage in web search advertising. Clients without the "financial muscle" (as the advertising professional quoted further above put it) may not be able to have advertising professionals design, test, and run a web search advertising campaign for as long as is needed to identify the most valuable words, most effective ads, and best bidding strategies. A big budget is needed to create the data that allow advertising professionals to measure relevance, as there is an abundance of potential metrics that could be taken into account and optimized for. Another advertising professional described the process over time in a very similar manner:

> When you start, you rely on your instinct, because you don't have the data yet. You tell yourself: Well, you may say this or that keyword should probably work. [. . .] You try out and you test. Then afterwards, you compare. [. . .] With the data you are able to say: OK, this works, and this doesn't.

Based on which metrics they deem relevant, advertising professionals then designate some of the words as "successful words" or "performing words"; that is, they attach evaluative labels to certain words. What success means depends on the case and the client. Some words are deemed to be

"performing" if they create more website traffic, other words may be expected to result in a greater ratio of leads per cost, or more revenue, or conversions, and so on. Overall, it becomes clear that once a campaign has started, the valuation of words is reified according to how effective they are at reaching measurable goals. This, again, shows how word-based advertising relies not only on the logic that words are proxies for interests, but also on a substantial amount of interpretive work behind the scenes to make it so.

Discussion: Semantic Practices in Algorithmic Media

Advertising professionals make use of semantic practices to evaluate words. These practices are a way to reconcile the fact that words have meanings with the circumstance of their being employed within an algorithmic system that treats words as "linguistic data" (Thornton, 2018). My analysis of in-depth, semi-structured interviews with advertising professionals has identified several key themes relating to their activity. I have presented four distinct semantic practices (attaching meaning, ascribing intention, algorithmic association, and measuring relevance) that are used to engage with the fact that words have meaning. These practices are employed to (e)valuate words for web search advertising purposes, that is, to assess and potentially ascribe value. In addition, the interviews have revealed locality, semantic footprints, and governance as three particularly salient factors in the evaluation of words, as they provide important contextual information.

I also noted how, once an advertising campaign has started, the different semantic practices are collapsed into measuring relevance based on metrics algorithmically provided by Google. Because these metrics have to be interpreted to be useful, advertising professionals play a crucial role in Google's linguistic capitalism. Their semantic practices overall contribute to sustaining the political economy of word-based advertising online. Within the broader dynamics of web search advertising, the commodification and valuation of words is structured in a way that builds significantly on Google's centrality in the contemporary web but disadvantages small and new advertisers.

Taken as a whole, my analysis of these themes yields at least three important insights into the semantic practices of word-based advertising. The first one is that even within a political economy that depends on their commodification, words do not have any fixed, intrinsic value. They are evaluated based on a multitude of criteria (cost, clicks, associated words, search volume, etc.) that are highly circumstantial and depend on contextual factors. Only when certain characteristics ("successful," "performing," "parasitic," etc.) become attached to them do they turn into more or less valuable commodities. Their values shift from client to client, from case to case, and depend on contexts and dynamics that go well beyond the web search advertising itself.

Despite the wide variety of criteria derived from different settings and contexts, the decisive characteristics for evaluating words once an advertising campaign is running are almost exclusively attached to metrics provided by Google. Because search queries are paired with text ads dynamically and at scale, and this pairing is automatically recalculated every time users perform a Google search, every search creates new metrics on the performance of keywords and ads, which will in turn influence subsequent pairings of queries and ads. This iterative process is also in play with nonpaid Google search results, as explained, for instance, by Jarrett (2014) and Thornton (2018). The entire web search and advertising process leads to an abundance of metrics that advertising professionals engage with when evaluating how much a particular word may be worth for a specific search ad campaign for a given client.

The second insight is a consequence of the first: Evaluating words takes a lot of work. Words may or may not actually be proxies for interests, but even if they are, then advertising on the basis of such proxies is not as straightforward as Google's promotion would make people believe. For a yoga studio, to use Google's own example from above, it is not as easy as simply selecting the keywords "beginner yoga classes" and then being done. Even if "beginner yoga classes" ends up being the string of words that is selected as the advertising keyword, this is already a consequential choice in itself. Why not, for instance, target "yoga classes," "yoga classes beginner," "new york beginner yoga," or any other of the countless possible combinations of words that might be relevant in the context of a yoga studio offering its services? If undertaken by advertising professionals, such a selection is probably already the result of much reflection and careful evaluation. Still, one evaluation is not enough, as web search advertising campaigns are supposed to be improved over time. It is precisely because words and ads need to be reevaluated constantly that running a successful campaign at scale, in terms of both time and volume, requires significant resources, which not all organizations can afford. The conclusion that some organizations, in particular, new entrants and small businesses, may be at a disadvantage is not necessarily remarkable per se. But it is in stark contrast to the narrative promoted by Google itself that web search advertising is a level playing field.

The third insight relates to the fact that, despite the complex, multidimensional criteria and contexts that influence the valuation of words, Google remains central to the actual process of evaluating words. On the one hand, this may not seem surprising, given that it is Google itself that provides much of the technology and the online platform that make the valuation possible in the first place. On the other, I have shown how many influences that are outside of Google's control—from geography and regulation by national governments to factors specific to individual clients—affect how words are valuated. Google's centrality is therefore not trivial; it is indicative of the company's semantic power, due to

its ability to absorb social contexts and transform them into metrics that ultimately serve its commercial goals. Moreover, the practices of web search engine advertisers not only contribute significantly to Google's revenue but also potentially increase it, thus reinforcing linguistic capitalism. One important reason for this is the limited set of words that are relevant within the economic realm. For although the number of words people search for can be considered to be infinite, the structure of the economy and the nature of products and services actually advertised significantly limit the basic word pool. Because the price is determined via an auction, the more people compete for advertising spaces for certain keywords, the more expensive these spaces become.

It is this third dimension and its larger effects on language that deserve further attention, especially in light of the exclusionary dynamics at play. The fact that small and new advertisers are marginalized by big companies with big budgets is not necessarily different from other advertising settings. But because web search engine advertising pairs ads with search results based on words, our very means of communication and access to information are at play. Thornton has shown how a political attack slogan ("the dementia tax") found its way into Google's algorithmic advertising system, increasing advertising costs for charities and nongovernmental organizations (NGOs) specialized in dementia (Thornton, 2017b). Higher costs result in higher revenues for Google. But it is unclear whether the public is served well if, as in this case, political parties outprice nonpartisan providers of accurate medical information. On a general level, it seems desirable to ensure that the "semanticization" of digital domains (Iliadis, 2022, p. 15) cannot be dominated and influenced by corporate or partisan interests.

This study underlines the importance of analyzing technical affordances in conjunction with key users' actual practices to better understand how meaning-making in algorithmic media comes to be commodified. Although web search advertising may bear similarities to the business model of traditional mass media inasmuch as it pairs information with ads, it follows a very different logic that is primarily based not on demographic information but on words, which are evaluated and valuated. Because web search advertising is closely intertwined with web search, it is crucial to study the role of advertising professionals as a particular user group in shaping Google's algorithmic systems through their activities and interpretations. Detailed accounts from advertising professionals can contribute to a better understanding of how an algorithmic system that comprises both web search and search advertising enables the commodification of words.

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Notes

1. An old Internet joke, based on a drawing in *The New Yorker*, goes: "On the Internet no one knows you're a dog." For the specific case of web search advertising, that joke could be modified to: "Web search advertising doesn't need to know you're a dog to show you ads for dog food."
2. For instance, the value of George Orwell's 1984 is £58,318.14 according to data from Google's Keyword Planner (KWP) (Thornton, 2018, p. 434).
3. Advertisers may do their web search advertising "in-house" or they may outsource it to advertising professionals. A sociological approach to mapping and dissecting the professional landscape of new digital advertising jobs and organizations would be both fascinating and pertinent, but it is beyond the scope of this study.

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