Digital marketing as digital methods: Repurposing Google Ads for controversy mapping

Òscar Coromina[1] (iD), Alexei Tsinovoi[2] (iD)
and Anders Kristian Munk[3] (iD)

Abstract

Digital advertising is central to the business models and technological affordances of digital platforms, creating market-places for user attention. Despite the keen theoretical attention to the commodification of audiences in critical new media and data studies, there has been little exploration of how digital marketing can also be understood as a methodological lens to study both controversies and the practices involved in the commodification of attention around the issues that animate such controversies. Addressing this gap in knowledge by drawing on the digital methods approach, this article proposes repurposing the tools, data and practices of digital marketing – what we coin digital marketing epistemology – as new methodological points of observation in controversy mapping. Focusing empirically on Google Ads, we scrutinize the building blocks of advertising campaigns on the platform and their metrics and measurements. We then offer a set of methodological 'recipes' for repurposing the Google Ads platform for controversy mapping and illustrate through a series of data sprints how this can contribute not only to a better understanding of the measurement and valuation practices that are involved in converting attention into a tradable asset but also the role these practices play in the unfolding of techno-social controversies.

Keywords

Digital marketing, controversy mapping, digital methods, attention economy

Introduction

Understanding the methodological implications of digital mediation has been a key concern across the social sciences and humanities in recent years (Kitchin, 2014). Digital methods emerged in these debates as a distinct methodological approach, characterized by 'online groundedness' (Rogers, 2015) that neither declare 'the end of theory' (Anderson, 2008) nor treats digital media as 'new terrains for old methods' (Venturini and Latour, 2010: 2). Instead, digital methods 'strive to follow the evolving methods of the medium' (Rogers, 2013: 1) and repurpose them for social research, not only as a means to better understand digital media but as a lens to study wider techno-social phenomena mediated through digital platforms. This type of 'internet-related research' (Rogers, 2009) owes much to actor–network theory (ANT) and as such places a considerable emphasis on the material specificities of digital environments and the challenges they pose to traditional modes of knowledge production in the social sciences and humanities (Ruppert et al., 2013).

Specifically, the digital methods approach has struck a chord with controversy mapping, which leverages ANT to trace the changing landscape of actor positions and topics in socio-technical disputes (Venturini, 2010). Controversies are situations where knowledge and expertise become contested and actors disagree on how issues should be framed, which questions should be answered and who should be trusted to do so (Whatmore, 2009). Such situations are of considerable socio-technical complexity, and the idea of a

[1]Department of Audiovisual Communication and Advertising, Universitat Autònoma de Barcelona, Barcelona, Spain
[2]Department of Media Studies and Journalism, Aarhus Universitet, Aarhus, Denmark
[3]Department of Culture and Learning, Aalborg Universitet, Copenhagen, Denmark

Corresponding author:
Òscar Coromina, Department of Audiovisual Communication and Advertising, Universitat Autònoma de Barcelona, Carrer de la Vinya, s/n, 08193 Bellaterra, Barcelona, Spain.
Email: oscar.coromina@uab.cat

cartography of controversies emerged as a way to navigate that complexity, first as a pedagogical approach to engineering education and later as a full-fledged toolbox combining ethnographic and digital methods with information design and data visualization to produce atlases (Venturini and Munk, 2022). Over the past 20 years, controversy mapping has become particularly interested in digital platforms as key players in contemporary debates (Marres, 2015), thus becoming a key area of application for digital methods. This literature has been acutely aware of the effects that particular media technologies have on digital interactions and therefore has repeatedly stressed the need to take media devices seriously as part of the empirical ground, producing a variety of case studies in which the affordances of specific media take the centre stage in the analysis of the controversy.

Digital marketing knowledge, practices and technologies are widely recognized as a constitutive element in the business models of online media platforms and serve as their main source of income (Lee, 2011). Dictating many of the technological affordances, user practices and data collection processes of commercial digital media platforms, digital marketing is often associated with the popular notion of 'attention economy', where the platforms convert user data into engagement metrics through which user attention can be sold to the advertisers in 'attention marketplaces' (Bachmann and Siegert, 2021; Birch et al., 2021). While these digital marketing metrics and valuation practices are widely recognized as main drivers for the data collection and aggregation practices that define contemporary 'surveillance capitalism' (Zuboff, 2019), their constitutive digital objects and data have hitherto been rarely repurposed for controversy mapping or digital methods more broadly.

In a few notable exceptions, the ways in which digital marketing objects can illuminate broader techno-social phenomena have however already been illustrated. For example, early digital methods studies have partially relied on digital marketing data for national web delimitation (Rogers et al., 2013). More recently, studies of online ad trackers have been used in understanding dynamics of online mis- and disinformation (Gray et al., 2020). Considering the recent efforts to repurpose search engines in order to study source hierarchies or issue commitment (Mager et al. 2023), or the efforts to repurpose web archives for historiographical research (Ben-David and Amram, 2018; Rogers, 2017), we believe that digital marketing warrants similar attention.

We argue that the range of *repurposable* digital objects related to digital marketing is far broader than ad trackers or URL suffixes, including a variety of digital objects such as landing pages, algorithmically generated 'keyword ideas' and various metrics that can help controversy mappers – and digital methods researchers more broadly – discovering new ways in which actors compete over attention and visibility and how this competition is premised by specific digital settings. Exploring how these tools and data can be repurposed for digital controversy mapping is important for

several reasons. Considering the commercial character of most digital platforms, where visibility and attention can be strategically planned and purchased, these tools and data can help discover actors that are committed to market-based interventions (Neyland et al., 2019) in social, commercial and political controversies. Discovering these actors and mapping their associations with other actors and topics can shed a new light on the role of such interventions in the distribution of attention and visibility in strategic communication efforts, ranging from marketing communication to PR campaigns, and even disinformation. Additionally, unlike some of the other data sources used for controversy mapping, such as commercial APIs, that are often restricted and frequently changed in arbitrary ways (Bruns, 2019), access to digital marketing data and the different features offered on different platforms are aimed to help advertisers in their work, which is a core dimension of most commercial platforms and as such unlikely to be discontinued or restricted.

Following this motivation, this paper will provide a framework for how digital marketing knowledge, methods and data – i.e. digital marketing epistemologies (DME) – can be repurposed as part of digital methods investigations in the context of controversy mapping and develop a set of methodological 'recipes' (Bounegru et al., 2018) for repurposing the Google Ads platform. We chose to focus on Google Ads because Alphabet, the parent company of Google that owns Google Ads, is the most important digital advertising marketplace in terms of revenue and number of customers, accounting for 29% of the digital advertising globally (Graham and Elias, 2021). As such, the epistemology of Google Ads could both be highly relevant to a multiplicity of techno-social controversies and issues and reflect broader industry logics and practices. Repurposing digital traces from the Google Ads marketplace for controversy mapping encompasses, therefore, an ambition to learn something about the issues that different actors are engaged with as well as about Google Ads as an actor in its own right that influences the controversy in specific ways.

For this purpose, this article is divided into six parts. Following the introduction (1), we proceed by (2) discussing the idea of 'attention economy', where the ecosystem of knowledge, devices and data generated by digital marketing enables constituting *marketplaces for attention*. By drawing on the work of Michel Callon (1998, 2021), we argue that this ecosystem can be understood as a type of epistemology in which these markets are embedded; understanding it is pivotal for repurposing digital marketing devices and data. We then (3) discuss digital methods and their role in controversy mapping and (4) describe some of the central digital objects and processes in the Google Ads' epistemology that we believe can be repurposed as part of digital methods research. Finally, we (5) provide three methodological recipes for repurposing Google Ads, illustrate them through different examples from our data sprints and then (6) conclude by suggesting several ways in

which understanding and *repurposing* DMEs and their inscription and calculation devices can open up new empirical terrains for digital methods research.

Attention economies and their digital marketing epistemologies

Digital marketing and advertising is 'the core business model for online media' (Hwang, 2020: 9) and the most important revenue stream for digital platforms such as Google and Facebook. Media scholars have long noted that the prime concern of advertisement-based media is not necessarily the production of content but rather the commodification of audiences, where leisurely media use becomes imbued with an economic exchange value and sold to advertisers (Smythe, 1977). This process hinges on user attention, and it is commonly discussed today in the context of the popular concept of *attention economy*. According to Davenport and Beck (2001: 20), attention – as the 'focused mental engagement on a particular item of information' – preconditions consumer actions. In turn, with the abundance of information in today's media environment, audience attention has been discussed as a scarce and valuable resource or a capital to be competed over (Franck, 2019; Goldhaber, 1997; Simon, 1971). While the *attention economy* became a popular term for describing a wide range of online dynamics (e.g. Bessi et al., 2014; Tufekci, 2013) at its core remains a fundamental concern with digital marketing and advertising. As explained by Hwang (2020: 12), digital platforms create 'a marketplace for attention' in which every time 'your eyes breeze over an advertisement as you scroll through your news feeds or read an article, a transaction has occurred. Your attention has been sold by the platform and bought by the advertiser'.

The association between money and attention in these markets is however far from straightforward. Bachmann and Siegert (2021: 150) note a certain '*conversion dilemma* between money and attention' where due the practical difficulties with measuring attention, buyers and sellers in these markets 'use stopgap measures; they do not trade actual attention, but media reach, as a substitute' which is easier to quantify (Bachmann and Siegert, 2021: 148). The markets of attention are thus constituted through the multiplication of various standardized metrics that set the method for purchasing advertising space and regulate 'the conversion of money and attention' (Bachmann and Siegert, 2021: 150). For instance, cost per mille (CPM) describes the cost of 1000 ad impressions. Cost per click (CPC), on the other hand, puts the value on the actual click a banner or a text ad receives. Such metrics are calculated by the platforms and made available to the advertisers through different web interfaces through which they can plan, implement, analyse, manage and pay for marketing campaigns. This way, 'the media themselves are not only

platforms for the mass business in attention, they also act as exchanges assessing the value of capital denominated in this currency' (Franck, 2019: 13). For this purpose, the platforms aggregate user-generated content and transactional data that are then transformed into user metrics that are essential for the measurement and valuation practices that are involved in rendering attention tradable (Birch et al., 2021). This process of user tracking is what eventually enables the commodification of the audience on digital media platforms, and it is at the core of the transformation of the contemporary economy, dubbed by Zuboff (2019) as 'surveillance capitalism'.

This type of dynamics, where the existence of the marketplace for attention is constituted through the marketing practices that seek to describe it, resonates well with Michel Callon's (1998) argument about *embeddedness* of economic markets within the epistemological universe of economics that 'performs, shapes and formats the economy, rather than observing how it functions' (Callon, 1998: 2). Reflecting an STS tradition of exploring the partiality of techno-scientific knowledge production, Callon called for *situating* markets within the epistemological and sociological conditions of their production. Redefining a market as a 'coordination device' for 'a process in which calculative agencies oppose one another…to reach an acceptable compromise in the form of a contract and/or a price', he suggested that markets should be studied by tracing 'the construction' of the 'competitive arrangements in which they are stabilized, for a time and in a place' (Callon, 1998: 3). In his later work, Callon (2021) has referred to such arrangements as 'market agencements' to emphasize that markets provide an opportunity for agency beyond the context of the exchange. Specifically, Callon (1998, 2021) emphasizes the significance of tracing the 'formatting of calculative agencies' (Callon, 1998: 23) in these agencements, arguing that the ability of actors to make calculations related to the transaction is not based on some sort of inner logic but rather drawn from their relations with key human and non-human allies in a specific actor–network, involving the 'material reality of calculations' available to the actors (Callon, 1998: 4).

This process of formatting of calculative agencies is central to online attention markets, where the calculative agents – i.e. advertisers – rely on the metrics calculated and made available by the platform to find their target audience and decide the best method for promoting their products. For example, metrics related to ad impressions, clicks, etc. are made available to advertisers by the platforms through graphic user interfaces that form ad marketplaces that allow them to plan campaigns, define target audiences, buy ads and track performance. To support this process, digital platforms produce various forms of knowledge resources for advertisers, such as tutorials, guides, help centres, periodic reports, forecasts, APIs,

etc., that assist in research and planning activities involved in their calculative processes. In that sense, the platforms are both calculative agents in the marketplaces for attention, as well as producers of specific *epistemologies* through which these markets are constituted and sustained.

In producing these epistemologies, the *assetization* of attention takes place – a specific type of valuation process that converts transactional data into 'user metrics' that can produce 'future revenue streams' (Birch et al., 2021: 2) for the platforms. This process of creating economic 'attention assets' is a key element in the commodification of the audience on digital platforms because it is not raw data itself that enables the marketplace for attention, but rather the entire ecology of measurements and metrics performed by the platforms, such as reach, click through rate (CTR), impressions, etc., through which '[u]sers are made legible as an asset' (Birch et al., 2021: 4) that can produce revenue. In creating these 'attention assets', as summarized by Hwang (2020: 51), '[t]he amorphous, shapeless concept of attention' becomes 'discrete, comparable pieces that can be captured, priced, and sold', thus enabling calculative agents to 'quickly evaluate opportunities and transact in attention at massive scale'.

Echoing Callon's claim about the embeddedness of markets in the bodies of knowledge which seek to describe them, these knowledge ecosystems – consisting of metrics, tools, concepts, practices and logics that travel back and forth between the online platforms, marketing practitioners and academic marketing specialists – can be seen as a form of epistemology in which the marketplaces for attention are embedded, i.e. *digital marketing epistemology* (DME). This situatedness of digital marketing methods and data within specific epistemic conditions highlights that the notion of attention, as it comes to play a role in commercial, social and political issues online, is not an objective empirical phenomenon but rather a techno-social construct that comes into being through the DMEs that guide the assumptions and practices of digital marketing professionals and shape the material contexts in which these practices take place.[1] As we argue next, understanding and *repurposing* DME's and their devices can add valuable new insights to social studies of online dynamics of attention and visibility beyond the field of digital marketing *per se* and open up new empirical terrains for digital methods and specifically controversy mapping.

Digital methods and controversy mapping

Some of the evident implications of 'digital mediation' is that 'traceability and aggregability become intrinsic affordances of social phenomena', creating new avenues for generating knowledge about society (Venturini, 2010: 800). As we have just shown, the capacity to aggregate and analyse digital traces has become central to the formatting of the market places for attention. However, such digital traces

and the devices that aggregate them can also be repurposed for academic research, and this has been a key impetus for the field of *digital methods* (Rogers, 2013) which has, over the past 20 years, experimented with ways of repurposing the native methods of a wide variety of online media practices for sociocultural research that studies a variety of digitally mediated socio-technical phenomena (Venturini et al., 2017). The starting point in this approach is that as 'a by-product of everyday transactions' digital traces significantly differ from the type of data traditionally analysed by established social science methods and challenge many of their traditional assumptions (Ruppert et al., 2013: 38). Addressing this, digital methods scholars have long argued that these traces have to be actively *repurposed* for social research, with a keen view to the fact that they are media-specific ways of knowing the world (Marres and Gerlitz, 2016; Weltevrede and Borra, 2016) that require 'to get our hands dirty and explore their affordances…how they work with respect to standard social science techniques…and how they relate to social and political institutions' (Ruppert et al., 2013: 32).

Unlike other approaches to digital data, such as social data science (Lazer et al., 2009) or virtual methods (Hine, 2005) that tend to treat digital platforms and data as 'new terrains for old methods' (Venturini and Latour, 2010: 2), digital methods are situated in specific socio-technical environments and 'strive to follow the evolving methods of the medium' (Rogers, 2013: 1) and repurpose them beyond the initial design. While scholars working in this tradition have already illustrated the value of repurposing API data from a variety of digital platforms, so far there have not been any systematic digital methods attempts to repurpose digital marketing devices and data. We believe that this gap in the literature requires scholarly attention.

Marketplaces for attention, such as Google Ads, are embedded in specific DMEs that come with their own platform-specific methods and data traces that we can follow through various interfaces and APIs. While the metrics provided by DMEs are typically geared towards facilitating operations of market agents, the dynamics of attention and visibility that they express have a bearing on broader forms of social and political struggles, which indicates that repurposing DMEs can be valuable for many types of social inquiries. For example, audit studies using Facebook Ads data have illustrated how DME enables discriminatory market practices that enable exclusion of populations based on race and gender (Angwin and Parris, 2016). During our own data sprints, we have observed how Google Ads mediate and affect socio-technical controversies, such as international surrogacy and blockchain technologies, and we believe similar dynamics can also be found in other controversies that involve commercial interests, such as stem cell treatments, immunization schemes, etc.

One of the applications of digital methods that can benefit most from repurposing DMEs and their devices is digital controversy mapping (Marres, 2015; Venturini, 2012; Venturini and Munk, 2022). Originally developed in the 1990s as a didactic strand of ANT designed to enable engineering students explore the social entanglements of technology, 'the objective of controversy mapping is to unfold socio-technical disputes in a conceptual space where its multiple actors and issues can be weighed against each other' (Venturini and Munk, 2022: 5). As social-technical controversies began unfolding online, by the mid-2000s cross-fertilization began to take place between ANT and digital methods, and controversy mapping was no longer purely a didactic tool, but a key area of application for digital methods as a research method to trace the changing landscape of actor positions and issues (Marres, 2015; Rogers, 2021; Venturini, 2010, 2012). This cross-fertilization is not limited to the idea that digital objects can be repurposed as traces of actor activity. Crucially, ANT and digital methods share a basic conviction that whatever 'the social' becomes in specific situations is the result of socio-technical constructions, where specific digital technologies help stabilize how interactions play out on specific platforms. As a result, digital controversy mapping treats digital media technologies as actors in the controversy that premise the ways in which a discussion can unfold. Repurposing DMEs for controversy mapping therefore both encompasses an ambition to learn something about the issues that different actors are engaged with and an ambition to learn something about platforms like Google Ads as actors that shape controversies in specific ways.

The first set of key questions for digital controversy mapping that repurposing Google Ads can help us answer thus relates to understanding who the *actors* that buy attention around specific issue terms are, what messages they are trying to propagate and how effective these efforts are. As various organizations attempt to buy specific issue-related keywords on Google ads markets to funnel attention to landing pages where they control the messaging, they can intervene in controversies and become actors – the more they succeed in these efforts, the more central and influential they become. The second set of questions pertains more exploratively to the variety of *issues* – expressed through issue terms – that are brought up in a controversy. The choice of issues and the way questions are framed are seen in controversy mapping as partisan acts whereby actors can attempt to set an agenda to their advantage. Controversy mappers therefore attempt to remain agnostic about which issues should be considered part of the controversy and instead follow the framing efforts of the actors (Venturini and Munk, 2022). After discovering the actors that buy attention around a specific set of issue terms, platforms like Google Ads can also help us explore which other keywords those actors have been buying and how that has been changing over time. Beyond indicating the different ways the controversy has been framed by the actors, repurposing DMEs like Google Ads can also give us a sense of how the platforms intervene in co-shaping the issue language and affect the framings of controversies. For example, examining the quality criteria that evaluate the content of the ads can reveal advertiser incentives to comply and re-articulate their content.

Following this motivation, the next section proceeds to describe the example of the Google Ads DME, proposing basic entry points for repurposing it for controversy mapping through a set of methodological 'recipes' (Bounegru et al., 2018).

Repurposing Google Ads

Google Ads is the commercial name of Alphabet's marketplace for selling digital advertising space across different websites and apps. Advertising placement by Google is conducted exclusively through this service, offering advertisers access to the so-called Google Network that includes websites and apps owned by Alphabet and its partners. Google Network is divided into two different groups: (1) Google Search network, which includes Google, Google Maps, Google Shopping and other search sites that partner with Google to show ads, and (2) Google Display network, which includes Google-owned sites such as YouTube, Blogger and Gmail. Overall, attention in Google Ads is sold in the form of clicks and impressions,[2] and the ads can be presented in different formats such as responsive banners, video or images. For illustration purposes, we have chosen to focus on the Google Search network because its distinct features are particularly interesting for controversy mappers. For example, we can follow what actors do by examining how advertisers associate themselves with issues through campaign keywords selection. Additionally, in the search network advertising placement depends dynamically on how search queries are formulated, how users interact with the results and how the ads are articulated. To obtain higher visibility and lower prices, advertisers are thus incentivized by this DME to produce ad content accurately aligned with the keywords, which not only indicates semantic specificity that may often be lacking in other forms of web data but also illustrates what kind of agency a DME can play in shaping the language of the controversy.

Following Callon's discussion of market agencements and the formatting of calculative agencies, we argue that Google Ads similarly places calculative agents in relation to one another to facilitate encounters that may end in a commercial transaction. Attention in the Google Search network – as it is articulated by the search terms typed by users – becomes an economic asset by being transformed into clickable 'keywords' (i.e. words and sentences) that are isolated from their linguistic, user-generated context

Keywords you provided							
☐ surrogacy	10K – 100K	0%	0%	Medium	–	€4.55	€21.18
Keyword ideas							
☐ surrogate mother	10K – 100K	0%	0%	Medium	–	€2.92	€12.03
☐ become a surrogate	1K – 10K	0%	0%	Medium	–	€17.28	€54.38
☐ surrogacy agencies	1K – 10K	0%	0%	Medium	–	€7.56	€35.41
☐ become a surrogate near me	100 – 1K	0%	0%	Medium	–	€21.31	€63.12
☐ being a surrogate	100 – 1K	0%	0%	Medium	–	€5.58	€29.15
☐ surrogacy near me	1K – 10K	0%	0%	Medium	–	€6.57	€36.41
☐ surrogate cost	10K – 100K	0%	-90%	Low	–	€1.06	€4.91
☐ highest paying surrogacy agency	100 – 1K	0%	0%	Medium	–	€11.70	€60.52
☐ growing generations surrogacy	100 – 1K	0%	-90%	Medium	–	€7.24	€621.35
☐ best surrogacy agencies	100 – 1K	0%	0%	Medium	–	€11.65	€51.50
☐ be a surrogate	100 – 1K	0%	0%	Medium	–	€11.04	€40.22
☐ become a surrogate mother	1K – 10K	0%	0%	Medium	–	€17.28	€54.38
☐ surrogacy agencies near me	100 – 1K	0%	0%	Medium	–	€10.45	€50.15

Figure 1. Keyword metrics (source: screenshot from the Goole Ads interface).

and made available for market transactions (Figure 1). For this purpose, keywords go through a valuation process in which Google Ads calculates specific metrics, such as estimated searches per month, cost, competition, etc., and assigns them as new attributes to these keywords (Google Ads, n.d.-e). The advertisers typically complement this information with third-party tools such as Ahrefs, Semrush or Moz[3] that offer additional metrics and indicators widely used by digital marketing professionals. These tools combine Google Ads data with their own web crawling algorithms that collect additional data from the World Wide Web and Google's search engine, such as site backlinks, changes of search engine results pages (SERP) over time, etc. (Ahrefs, n.d.).

Once the keywords have been evaluated, the encounter between the buyer and the seller – i.e. the advertiser and the platform – is orchestrated through an algorithmic, auction-like process through which potential buyers are asked to specify the keywords that will trigger the ad, language and location restrictions, ad texts, landing pages to which these ads should redirect and the maximum bid for a click. What follows next is a dynamic process that takes place every time a user types on Google search engine any of the keywords that the buyers wish to be associated with out of an expectation to become more visible in the SERP. During this process, the price of a potential click on the ad is based on its quality score (QS). This metric is calculated for each ad based on the expected CTR, ad relevance, landing page experience[4] and the amount of money the advertisers are willing to pay for each click (Google Ads, n.d.-c). The quality score is thus a DME device that organizes the transaction between calculative agencies and formulates the price for this transaction based on the coherence between keywords, ads and landing pages.

This transaction occurs at the moment the user clicks on the ad to visit the landing page, thus concluding the process through which data related to user attention becomes an economic asset for the platform and eventually sold to the advertisers.

Google Ads objects

In repurposing Google Ads, we focus on three digital objects that are constitutive to the architecture of this platform – keywords, ads and landing pages. Hitherto unexplored by digital methods scholars, these digital objects are a central part of any advertising campaign on Google, and their data is accessible through Google Ads and other popular third-party tools available to digital marketers, such as Ahrefs, Moz or Semrush (Hermanson, 2022).

Keywords. While keywords are often the starting point of various digital methods investigations, their material specificities differ from platform to platform as they are embedded in different attention economies and are part of different device cultures (Weltevrede and Borra, 2016). Keywords typically indicate interest in a topic (e.g. search terms) or topical content (e.g. hashtags or author keywords), and semantically they can be either relatively neutral or politically charged (Borra and Weber, 2012). On Google Ads, however, a keyword is also a commodity whose semantic use value is supplemented by an economic exchange value calculated by the platform. As such, keywords are presented to the marketers enriched with attributes such as estimated cost, search volume, level of competition, alongside related keywords ideas and search trends. All this information can be segmented by location, language,

site[5] and time period, and marketers rely on this information when deciding which keywords appear to be more profitable and worth purchasing as part of their advertising plans.

Keywords can be seen as 'visibility catalysts' (Tsinovoi, 2020) in Google's search engine, and metrics evaluating search queries can thus be indicative of broader social and political dynamics mediated by the platform, relevant for controversy mapping. In particular we found that keyword metrics about cost[6], competition and related searches can serve as initial entry points for repurposing Google Ads. In this context, the goal is to design queries in which keywords reflect different positions and alignments in relation to specific issues. This enables us to examine how prone different issues are to market-based interventions and analyse the emergence of trends, positioning of actors and issues and the stabilization and demise of certain hegemonic voices (Rogers, 2019). Specifically, since advertisers prioritize keywords based on their potential to lead to specific goals – e.g. selling something, registering for a service or any other action that generates value for the advertiser – Google Ads valuations reflect the interests of economic and political actors in specific aspects of an issue. Within the context of controversy mapping, keywords can thus be repurposed to explore how different actors have a stake in issues not only because they engage in them politically or because they produce knowledge about them but also because they can profit from them or use them to push their own agendas.

Ads. The Google Search network enables placing two types of ads: text and shopping ads. Both types of ads charge advertisers for each click; however, they significantly differ in terms of their visual appearance and functionality. Text ads (Figure 2) are organized in three different parts containing textual content: the headline, the description and the display URL[7]. Conversely, shopping ads have a more visual format, and they are designed to display products on sale at the advertiser's webpage. These ads include an image, a title, the price and the name of the store and can also be expanded for showing special promotions, ratings and customer reviews. Unlike text ads, shopping ads are not triggered by keywords chosen by the advertiser but by the filtering of their 'product attributes' metadata by the 'relevant searches' algorithm (Google Ads, n.d.-f).

Landing pages. Digital marketers usually create special web pages to which they channel the traffic from advertising campaigns (Google Ads, n.d.-d). These landing pages are designed to facilitate the completion of a certain goal (a.k.a. conversion), involving an action by the user that generates income for the advertisers, e.g. a purchase in e-commerce, etc. These pages are typically not linked to the advertisers' website and are organically indexed by the search engine to improve tracking and avoid competition between SEO and paid search strategies. While landing pages have so far been an unexplored territory for digital methods, we believe these digital objects offer new opportunities for analysing various types of discursive formations that circulate and animate controversies.

Similar to ads, landing pages are traces of marketing activities that enable identifying how the actors present themselves and their products through visual and textual means – as on a regular web page – but without the
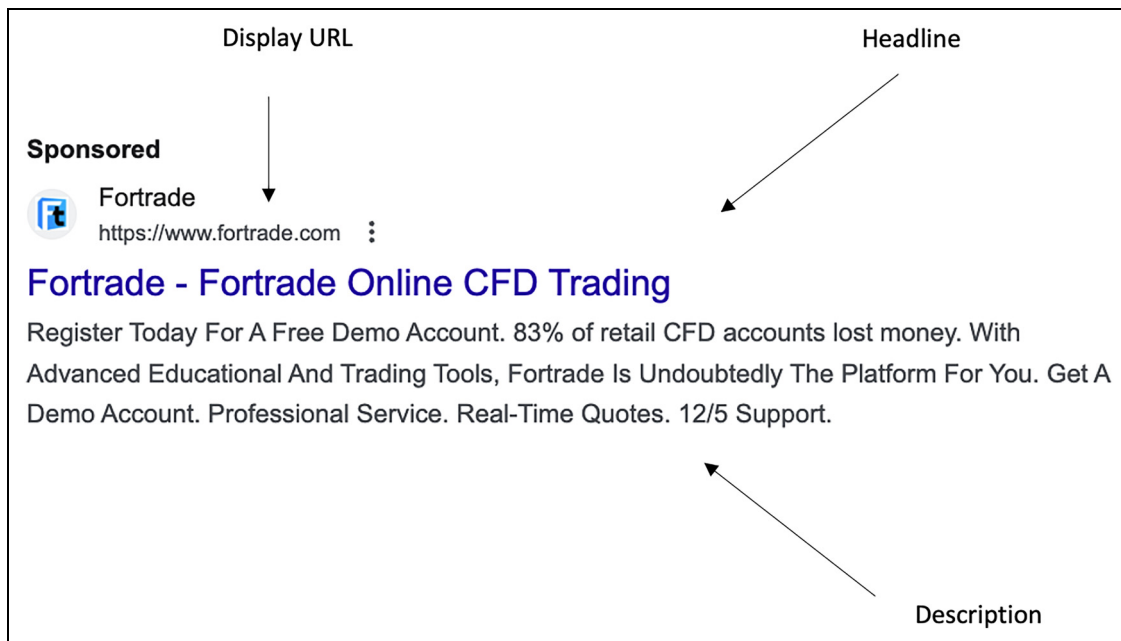

Figure 2. Google Ads snippet (source: screenshot from a Google SERP).

length limitations of text ads. The QS calculation incentivizes the marketers to create content that is accurate, descriptive and coherent with the keywords, which potentially makes the content displayed in these digital spaces highly relevant to the issues explored. The QS also estimates how useful and well-organized the landing page is, thus incentivizing advertisers to frequently update the content and use conversion metrics as a proxy for landing page experience as well as CTR and 'site engagement' (Google Ads, n.d.-d). The landing pages thus enable thicker, interpretive analysis of content that can help in outlining the contours of the market-based intervention through the semantic association between keywords and the promoted products, services or ideas.

Recipes

In exploring the possibilities of Google Ads for digital methods, and designing concrete methodological 'recipes' (Bounegru et al., 2018) for repurposing its DME for controversy mapping, we have engaged in collaborative efforts with students and colleagues during the course of three 'data sprints' (Munk et al., 2019) carried out in the TANTlab in December 2019, at the Digital Methods Winter School in Amsterdam in January 2022 and at the Universitat Autònoma de Barcelona in June 2022. Part of a long STS tradition for participatory scholarly work, the data sprint is a collaborative research format that, over the course of a few days, gives the participants the opportunity to engage in methodologically experimental and exploratory ways of working with data to study specific phenomena (Munk et al., 2019). During these data sprints, alongside the students and our colleagues, we tested different recipes for repurposing Google Ads for controversy mapping on case studies such as green energy, transnational surrogacy, Web 3.0, influencer marketing and ad blockers. After introducing the participants to the tools and practices of digital marketing, we have experimented with different ways of repurposing this DME.

Through these experiments in turning digital marketing metrics into what Rogers (2018) would call 'critical analytics' – i.e. ways of measuring the 'otherwise engaged', such as dominant voice, issue commitment or actor alignment – we have distilled three recipes: (1) a generic recipe to select keywords related to one topic and to retrieve the actors advertising on these keywords; based on that (2) a recipe that aims to visualize the relations between keywords and actors in a network form; and finally (3) a recipe for conducting content analysis on the landing pages for the ads. All the recipes require access to Google Ads (without the necessity of activating any advertising) and Ahrefs (a third-party tool that requires a paid subscription[8]), and they are compatible with standard digital methods tools, such as Gephi (Bastian et al., 2009).

Recipe 1: Expand query design with the keyword planner

As previously discussed, the role of keywords on Google's platform is two-fold: on the one hand, they make up the query introduced by the user, and on the other hand, they can be bought by advertisers to make ads more visible to the users. Keywords are typically the starting point in digital methods investigations, often in the form of a curated 'seed list' as part of the initial query design for data collection. Rogers (2019) emphasizes the importance of making sure that this query design reflects closely the diversity of the issue, including various interpretations by the actors involved. Digital marketing tools afford new possibilities for this by offering related keywords generated by Google's advertising algorithms, known as 'keyword ideas'. According to Google, these 'keyword ideas' are designed to help advertisers increase the reach of their campaigns by selecting more keywords to bid on. We can repurpose these algorithmically generated suggestions to refine our query design because they include terms that are related to our seed list based on what other users interested in the issue might be searching.

The most straightforward way to obtain these additional keywords is by using Google Ads' Keyword Planner. Accessible freely to Google Ads users, this tool returns a table for an initial list of seed keyword(s) that include algorithmically generated 'keyword ideas' that may be relevant to the initial seed list and their valuation metrics (Figure 1). Some of the most essential metrics provided by the tool are the average monthly searches, which represent a historical estimation of how popular a keyword is; advertisers use it to predict the number of times a certain keyword can trigger ads. Keyword ideas thus reflect what the market for online attention considers to be associated with specific issues, while the price differences in keywords can reveal which issue terms are expected to register more bidders and how anticipated competition influences the valuation of attention. Additionally, the platform provides metrics about 3 months and year-over-year (YOY) changes that reflect trends and seasonality and the competition level that anticipates other actors bidding for the same keyword. While a campaign is running, it is possible to view additional 'live' metrics such as ad impression share (actual ad impressions divided by the number of times a keyword has been searched), actual rather than estimated CTR or the conversion rate (the percentage of clicks that results in a completed goal).

These types of metrics play an important role in evaluating and optimizing the performance of advertising campaigns in this DME, and advertisers use them to identify opportunities, adjust bidding strategies and so on. A central distinction made in this context is between the visibility of the ad (i.e. potential attention measured by

impressions) and the actual clicks made by users (i.e. actualized attention gained). While estimated searches are directly related to the number of times an ad becomes visible to the users and thus may be viewed by them, it is in fact clicks and not ad impressions that the advertisers bid for. This distinction between ad impressions and clicks is a central dimension of Google's attention market and digital marketing in general, reflecting a prevailing understanding in most DMEs that visibility per se does not translate directly into consumer attention and that it is in fact actualized, rather mere potential attention reflected by the visibility of the ad, that is considered an economic asset.

As with other digital methods, the recipe (Figure 3) to obtain a list of algorithmically related keywords and their valuation metrics may start with the curation of a list of 'seed keywords' that encapsulate key dimensions of the issue. Once the list is introduced to the Google Ads Keyword Planner tool, it will return a new list of 'keywords ideas', along with their valuation metrics (Figure 1). This list is already a material that can be analysed and can help researchers identify the most popular keywords that attract more advertisers, thus discovering unexpected associations that could have gone unnoticed. Alternatively, this recipe can also start by introducing an actor's website in the 'site explorer' tool, which retrieves all the keywords associated with this website from Ahrefs' historical database. This ensures that the selected keyword/actors have actually been bid for, which expresses an actualized economic interest in the issue. Finally, related keywords can be used to retrieve a list of advertisers–actors from the ads history feature of Ahrefs tool that can be drawn upon as the starting point of recipe 2.

This recipe can contribute to a digital controversy mapping project by (1) generating a more extensive and less discretional query design, (2) measuring issue salience using the valuation metrics for the keywords and (3) producing a list of actors buying ads for the selected keywords that can contribute to the mapping of actor commitments. During the data sprints, we followed this recipe as a starting point for our investigations. For example, during the data sprint at the TANTlab, Copenhagen, in 2019, we explored the issue of international surrogacy services across four national contexts with diverging surrogacy regimes. This recipe enabled us to show a significant difference in the related keywords[9] between these countries and that the same actors that were bidding for keywords related to intended parents in one location were buying keywords related to egg donation or the recruitment of surrogate mothers in other locations. This has revealed the existence of national ads markets, offering the controversy mapper insight into geographical differences in actor strategies that would likely have eluded us if we had not repurposed this DME. As such, the recipe makes a core feature of the controversy visible, namely, the international network that allows the international surrogacy market to evade national regulation.

Recipe 2: Advertiser-keyword network

Third-party tools are a central element of DMEs, and they often aggregate additional data that can complement the results repurposed directly from Google Ads. For example, Ahrefs can retrieve which ads have actually been triggered by different keywords and thus render visible the associations between keywords and the
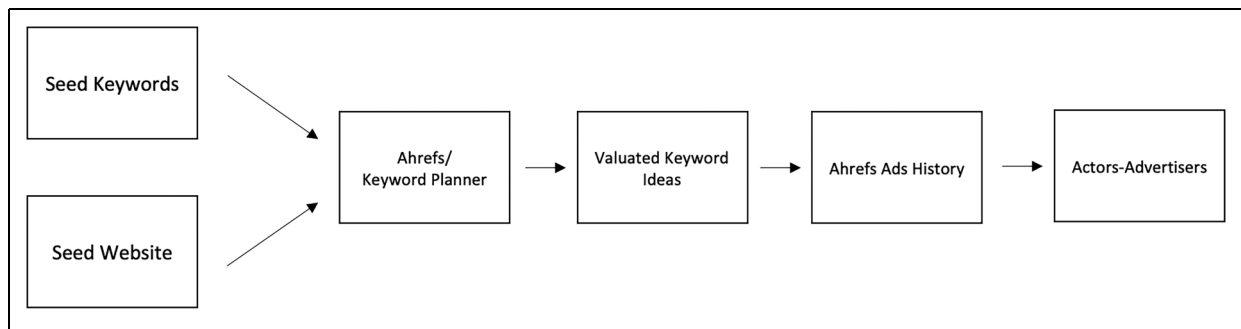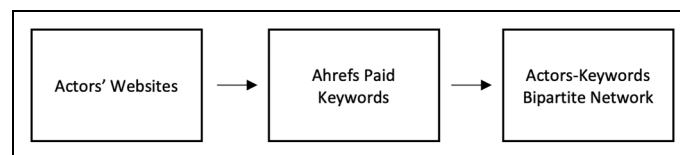

Figure 3. From keywords to actors.

Figure 4. Actors–keywords network.

advertisers that compete for them. For this purpose, we take the list of actors obtained in the previous recipe and retrieve a new list of keywords that these actors have 'bought' (Figure 4). In short, we move from related keywords provided by an algorithm in the previous recipe to a list of keywords for which advertisers have actually bid, thus contributing further to the mapping of actor commitment. This comes with two important advantages: (1) getting rid of the keywords that may be algorithmically related with the seed list but are not used (bought) by the advertisers and (2) obtaining new keywords that could have escaped from the algorithmic predictions. This process may come with a perceived disadvantage: if advertisers have stakes in different issues and invest in keywords not related with the issue we study they will also appear on the list. While this can add noise to our sample, it is also well-aligned with the commitment in controversy mapping to take an affirmative approach to media bias and consider the medium as having agency in the debate (Marres, 2015). Specifically, when we repeat the process for each actor found in the first recipe, it helps us profile them based on the issues they are invested in, many of which are shared.

The second step of the recipe consists in creating a network visualization that renders visible the associations between keywords and advertisers. One of the common ways in digital methods to analyse associations between actors and issues is to show communities of shared interest by using visual network analysis (VNA) with the help of tools like Gephi (Venturini and Munk, 2022). Basic scripts in Python can be used to generate bipartite network files from the list, where in our case the keywords and advertisers are the nodes and the edges are generated when advertisers buy attention for a keyword.

Illustrating this recipe, a group of students at the Digital Methods Winter School were interested in the main commercial actors engaged in the so-called Web 3.0 (Amanatidis et al., 2022). They first applied the keywords–actors recipe, starting from a list of keywords of technologies associated with Web 3.0, such as the metaverse, cryptocurrencies, blockchains, decentralized finance and token-based economies. Using this recipe they obtained a list of advertisers bidding on those keywords. With this list of actors, they proceeded to create the keyword advertiser network displayed in Figure 5. This network reveals clustering around tradable products such as cryptocurrencies and non-fungible tokens (NFTs). It shows how the companies are grouped around specific technologies with very few shared keywords between them. The cryptocurrency group appears as the most prominent both in terms of keyword diversity and advertisers followed by NFTs and blockchain. Interestingly, we find a fourth grouping that does not correspond to a Web 3.0 technology *per se* which is populated with e-commerce solutions. The many connections it shares with the NFT group renders visible how the NFT market relies on e-commerce platforms to commercialize tokens. These findings allowed the students to claim that Web 3.0 has not yet acquired commercial value for advertisers that prefer keywords related to specific technologies and that fragmentation rather than integration is what defines Web 3.0.
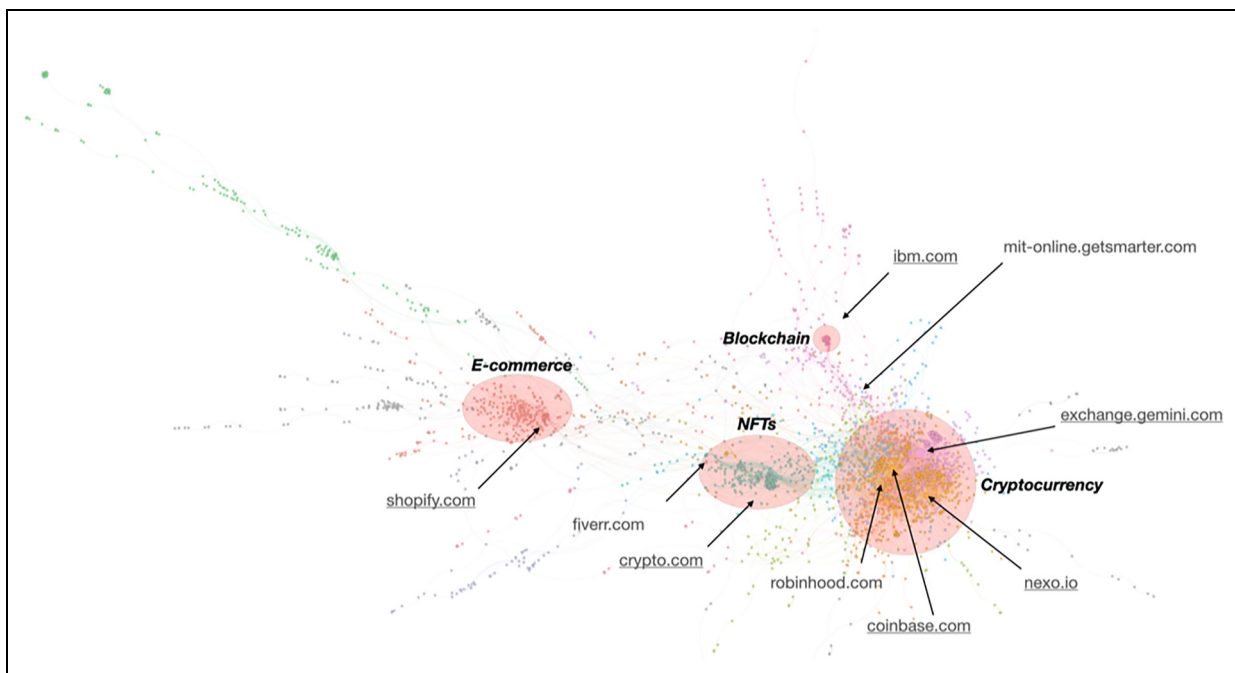

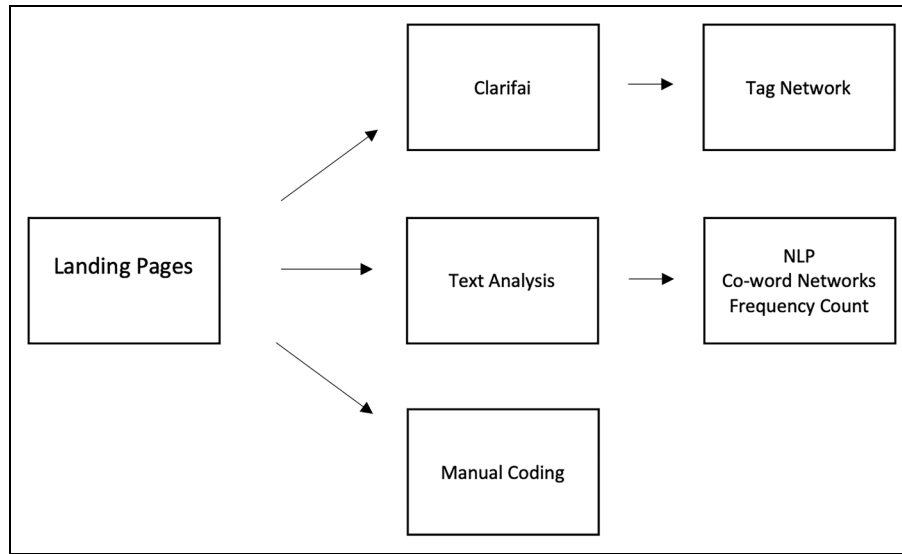**Figure 5.** Keyword–advertiser network Web 3.0 (source: Amanatidis et al, 2022).

Figure 6. Landing page analysis.
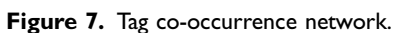
Recipe 3: Ad and landing page analysis

In addition to related and paid keywords, digital marketing tools like Ahrefs also give access to the historical record of media objects that are otherwise hard to capture, namely, ad and landing page texts[10]. Google Ads' DME encourages ads and landing pages to be accurate and precise in their description of the product or the service by providing a QS that is taken into account by the ad rank algorithm in determining the visibility of the ad. Because of that, the content of these ads can be easier to parse and interpret than many other types of web data, making them good candidates for different types of content analysis that can trace the 'thicker', semantic relations between the advertisers and the topic. If the number of landing pages under analysis is relatively small, the textual and visual content of the landing pages can be done with manual content analysis techniques. In case the number of analysed landing pages is relatively large, different forms of automated content analysis can be performed (Figure 6). For example, natural language processing (NLP) techniques, such as PoS-tagging and named entity recognition, can identify the most salient n-grams on a landing page. We can then visualize the co-occurrences of the n-grams across all the landing pages as a network graph. This technique is often used in controversy mapping to understand the topical structure of issues, for example, in relation to climate adaptation (Venturini et al., 2014), ecosystems (Tancoigne et al., 2014), obesity (Elgaard Jensen et al., 2018) or AI (Crepel et al., 2021). Controversy mappers have also recently applied this technique to visual content (Munk et al., 2016), where visual topics in the images are automatically identified using commercial platforms like Clarifai, which offers API access to its machine vision models

(Burgos-Thorsen and Munk, 2023; Omena et al., 2021). Such models typically output a series of tags for each image, and this enables us to build networks of tag co-occurrences, where clusters indicate topics in the visual data. Image tagging thus complements lexical extraction by turning images into semantic clusters describing the topics on the landing page images.

For example, by following this recipe during the international surrogacy data sprint, using a combination of automated text and image analysis, we found considerable differences in the representations of the issue across national contexts. Figure 7, for instance, displays a network of image tags from surrogacy agencies located in Spain. The image tags associated with women and men seem quite distinctive, with tags like success, leisure and indulgence related to men and tags like care, innocence and medical-related tags related to women. Using this technique, comparative analyses can also be conducted between different advertisers, ads or different landing pages from the same advertiser. For example, in comparing ads across national settings, we found a considerable difference between landing pages posted by Spanish and Ukrainian actors, with the former oriented towards illustrating positive aspects of parental life and the latter focused on detailing the conditions of the surrogate agreement. This type of comparative analysis can reveal some of the central characteristics of the controversy, such as the geography of transactions in this transnational market.

Conclusions

In this article we have discussed how digital marketing tools and epistemologies can be repurposed for digital methods

Figure 7. Tag co-occurrence network.

research. In illustrating the value of this approach, we have described three methodological 'recipes' for controversy mapping that we have developed and tested in collaboration with students and colleagues in a series of data sprints. While the 'recipes' are limited to Google Ads, they illustrate the utility of DMEs for broader social inquiry tasks such as query design and the analysis of actors and issues in the context of digital controversy mapping and point to the necessity of thinking through how digital ads markets and their tools are constructed as part of specific DMEs. Repurposing this DME for social research is thus reminiscent of other digital methods endeavours, where it has always been emphasized that there is no way of studying

phenomena through the lens of digital platform tools without studying the tools themselves in their full socio-technical complexity. This is evident, for example, when we repurpose an item like the keyword, where it is paramount to understand how it is traded and valuated in order to understand how the metrics associated with that keyword can be seen as an expression of a particular form of actor commitment to an issue. Similarly, understanding the relation between ads and landing pages, and the value placed by Google on content similarity across the two, allows repurposing landing page content as an indicator of actor interests and commitments and comparing it across issues and markets and national contexts.

These 'recipes' are clearly not exhaustive and limited to Google Ads. However, while it is not possible to use our recipes directly on other platforms, the argument that there is no repurposing a digital marketing tool for social research without understanding and repurposing its specific DMEs still holds. Ad managers for social platforms like Facebook or TikTok obviously work differently than for a search engine like Google, and researchers studying these platforms will have to come up with their own versions of our recipes and adjust them to their specific digital objects and valuation regimes. Our primary contribution in this article has been to argue for and illustrate the necessity of conducting this form of analysis and at the same time show its potential.

Specifically, our contribution has focused on illustrating the potential of repurposing the Google Ads DME for digital controversy mapping, which has long been challenged as regards to showing how the commercial dynamics of online attention played into issue salience and the power of actors to get their point across. With the exception of ad trackers, the effects of the commercialization of attention have been mainly assumed in controversy analysis. When actors are effective in becoming visible on social media platforms like Facebook or YouTube, for example, it has always been a possibility that part of this visibility was bought and thus was not a signal of how much other actors actually engage with their arguments. In fact, this challenge goes all the way back to early hyperlink analysis where a link is not necessarily a sign of recognition but could be there as a strategic effort to optimize search engine visibility. Repurposing DMEs offers a way to address this, by studying directly how actors in controversies use commercial attention markets to make themselves seen and ensure that the issues they care about get exposure.

The addition of digital marketing to the digital methods catalogue will not be a panacea for digital controversy mapping research. In order to understand how actors engage with each other, it will still be necessary to map which arguments they make, which sources they cite and how that changes over time. Moreover, the ever-present possibility of disjunctures between actual user attention and its digital traces will always require a careful empirical examination of the specific DME involved and the affordances of the digital platforms that support it. The existence of a Facebook group in a controversy or a Twitter hashtag will enable the actors to make themselves visible, attract attention and rally support in diverse ways, making these platforms actors in the controversy. What the repurposing of digital marketing methods allows us to do is to expand this study of platforms as actors and include their perhaps most defining feature, namely, their capacity to valuate attention and turn it into an asset that can be sold. However, as with other digital methods, it is important that in future endeavours to repurpose DMEs, social sciences and humanities will not become mere opportunistic beneficiaries of Big-Tech and their practices of audience commodification. Instead, repurposing DMEs should be seen as an intervention, where a close engagement with the materiality of these practices in the engine room of 'surveillance capitalism', will help in developing empirically grounded critique of their consequences that can shed light not only on the controversy at play but the political economy of Big-Tech more broadly.

ORCID iDs

Òscar Coromina ⓘD https://orcid.org/0000-0002-6306-4154
Alexei Tsinovoi ⓘD https://orcid.org/0000-0001-8006-401X
Anders Kristian Munk ⓘD https://orcid.org/0000-0002-5542-3065

Notes

1. It could be said that DME's thus entangle valuation regimes with what Gerlitz (2016) discusses as 'grammars of action'.
2. Only on the display network.
3. All these third-party tools provide data for keyword research and rankings in search engines like Google or Bing.
4. CTR is a percentage that reflects how much the ad is to be clicked by users, Ad Relevance is how related (relevant) the text of the ad is to the keywords used by the user in the search box and the landing page experience reflects how 'relevant', 'well-organized' and 'useful' the landing page is in Google's estimation (Google Ads, n.d.-a).
5. Google search engine and search partners (sites that partner with Google to show ads, e.g. YouTube).
6. The ultimate price of a keyword is decided in the Ad Auction, but higher estimated costs typically indicate that several companies are already bidding for the same keyword.
7. Google Ads provides one line for the headline and the display URL and two or three lines for description. This basic structure could be expanded with extensions (Google Ads, n.d.-b).
8. The company behind the tool kindly gave access to the students participating in the data sprints.
9. For example, in the USA, where surrogacy has a legal status, top related keywords for 'Surrogate Mother' were related to the economic compensation for surrogate mothers, while in

Spain, where surrogacy is illegal, top related keywords were related to hiring a surrogate from other countries.

10. Landing pages are normally not linked from the website, so if, for example, they stop being accessible, it most probably would be impossible to retrieve their content, even with tools like the Wayback Machine.

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