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Fake News, Real Money: Ad Tech Platforms, Profit-Driven Hoaxes, and the Business of Journalism

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Abstract

Following the viral spread of hoax political news in the lead-up to the 2016 U.S. presidential election, it's been reported that at least some of the individuals publishing these stories made substantial sums of money—tens of thousands of U.S. dollars—from their efforts. Whether or not such hoax stories are ultimately revealed to have had a persuasive impact on the electorate, they raise important normative questions about the underlying media infrastructures and industries—ad tech firms, programmatic advertising exchanges, etc.—that apparently created a lucrative incentive structure for "fake news" publishers. Legitimate ad-supported news organizations rely on the same infrastructure and industries for their livelihood. Thus, as traditional advertising subsidies for news have begun to collapse in the era of online advertising, it's important to understand how attempts to deal with for-profit hoaxes might simultaneously impact legitimate news organizations. Through 20 interviews with stakeholders in online advertising, this study looks at how the programmatic advertising industry understands "fake news," how it conceptualizes and grapples with the use of its tools by hoax publishers to generate revenue, and how its approach to the issue may ultimately contribute to reshaping the financial underpinnings of the digital journalism industry that depends on the same economic infrastructure.

Keywords: ad tech, programmatic advertising, ad-supported news, "fake news", hoaxes

Introduction

Following the viral spread of hoax political news in the lead-up to the 2016 U.S. presidential election, it's been reported that at least some of the individuals publishing these stories made substantial sums of money from their efforts, with a number claiming revenues of 10,000 to 30,000 USD per month at the height of their work's popularity (e.g., Sydell, 2016). Whether or not such hoax stories are ultimately revealed to have had a persuasive effect on the American electorate, they raise important normative questions about the underlying media infrastructures and industries—programmatic advertising exchanges, marketing platforms, etc.—that have apparently created a lucrative incentive structure for "fake news" publishers (Moses, 2016).

Other scholars have examined how legitimate news organizations should deal with viral hoaxes, as well as how users variously pass on falsehoods or assess the quality of information they encounter online. By contrast, the present study looks at how the programmatic advertising industry understands "fake news," how it conceptualizes and grapples with the use of its tools by hoax publishers to generate revenue, and how its approach to the issue may ultimately contribute to reshaping the financial underpinnings of the digital journalism industry that depends on the same economic infrastructure.

The advertising industry has readily taken advantage of the downward pressure online advertising has put on the price of placing ads in front of audiences, as traditional news media have begun to compete for ad dollars not just with newer online news organizations, but with blogs, social networking applications, and all manner of other websites and apps offering up ad space for sale (Couldry & Turow, 2014). The result—widely discussed by scholars and industry critics alike—has been that traditional subsidies provided to news organizations by advertisers have begun to collapse as more and more media consumption has migrated to the internet (Evans, 2011; Sinclair, 2016).

Victor Pickard (2015) notes that while this contemporary revenue crisis has generated renewed interest in the impact of advertising on the news, recent discussions of the issue are but the latest entries in a longstanding set of critiques of ad-supported and market-based models of journalism (see, for example, Baker, 2002). Even so, some scholars argue recent trends in online advertising have introduced additional conflicts with the public-service mission of journalism that require careful consideration in order to ward off greater societal harms.

Literature Review

Programmatic advertising on the web is complex and takes a number of forms, but the most common is an automated auction that happens as you load a website, in which advertisers bid to place an ad on the page you are viewing. These bids are typically made based on what an advertiser knows about you, the user. In this transaction, the website publisher puts the ad space up for auction, advertisers (or their ad agencies) bid on it, and intermediaries known as ad tech firms handle the details (Thomas, 2018).

Ad tech firms—and the practice of programmatic advertising more broadly—may be less salient for users than the prominently branded services they live alongside, like the Facebook News Feed or Google Search. But a number of scholars have highlighted how this online advertising ecosystem has had a profound impact on the incentive structure for media production and a structuring effect on the media ecosystem (Turow, 2011; Couldry & Turow, 2016; Sinclair, 2016; Vonderau, 2017; Thomas, 2018; Crain, forthcoming).

Braun (2015, p. 248) suggests a valuable method for interrogating digital intermediaries—like ad tech firms—is to “trace the various people, groups, companies, and software applications that manipulate, repackage, and recontextualize media products as they move along [the] path from producer to user." This view holds that ad tech firms, like other business-to-business intermediaries that provide technical infrastructures to other media organizations are not disinterested "middlemen." Rather, "just as…theater owners and broadcast affiliates, were [never] simply inert projectors and rows of seats or providers of towers and cables, these new…builders of infrastructure…are aggressive companies with their own interests, business models, and bottom lines" (Braun, 2015, p. 90).

The Influence of Programmatic Advertising

Programmatic advertising is typically pitched to marketers as a way to reach desirable users, far more so than as a method of selecting desirable content with which to pair ads. As Malthouse, Maslowska, and Franks (2018, p. 32) put it, the rise of ad tech firms and programmatic advertising has succeeded in separating "the value of the content product from the audience product"—a business rationale Couldry and Turow (2014) argue is quickly overturning the twentieth-century logic of subsidizing news production as a means of reaching consumers. Similarly, McStay (2017) argues the emphasis programmatic advertising places on behavioral targeting—the quest to reach users at the precise moment their pattern of behavior seems likely to lead to a purchase—has led advertisers to focus on short-term interactions with consumers at the expense of marketing strategies centered on long-term brand awareness. Such a shift may simultaneously undercut the logic of news subsidies, which rely in part on cultivating brand loyalty over the long term by establishing positive associations with consumers' favored editorial products.

Several authors have argued the technical infrastructure of the online advertising marketplace compounds this de-emphasis of editorial products in advertising placement. Among the biggest issues on this front stems from the fact that online advertising broadly, and programmatic advertising in particular, involve the automated coordination of many different firms each time an ad is placed on a publisher's website. This complex and software-mediated negotiation can put the brands whose advertisements are being distributed in the position of knowing very little, if anything, about which sites their ads appear on or even which services are putting them there (Turow, 2011; McStay, 2017; Thomas, 2018). As McStay (2017) discusses, programmatic advertising exchanges are modeled after systems for high-speed stock trading and have inspired ad-tech entrepreneurs to position themselves analogously within the programmatic marketplace. McStay (2017) even projects the advent of futures markets for user attention, in which intermediaries called "resellers" buy up inventory at low prices, sit on it, and sell it when it becomes more valuable. While the arbitrage practices of today's existing resellers operate over the short term, McStay projects they may one day include things like buying up desirable ad space and prospective pageviews by valuable users over the summer and re-selling them during the holiday shopping season. Both ad inventory and user attention are increasingly traded by "speculators with no interest in using the space for advertising…[who] buy and trade in this stock, just as they would with tea or steel" (McStay, 2017, p. 152).

As McStay notes, such practices readily summon classic critiques of commercial media systems' commodification of audiences, as the programmatic marketplace gives rise to actual commodities markets for user attention. Couldry and Turow (2014) suggest news organizations' reliance on such a system will almost inevitably be corrupting, forcing publishers to design—and journalists to produce—editorial products designed to facilitate micro-targeted advertising. If news organizations continue chasing ad dollars in this environment, the authors argue, they'll need to collect even more user data and use it to produce increasingly personalized stories that not only keep visitors on-site, but channel them into behavioral profiles that draw the bids of advertisers for whom editorial content and brands have become abstractions. This sort of hyper-personalization, suggest Couldry and Turow, will undermine the role news organizations play in democratic societies, as they'll no longer provide citizens with common reference points for public debate.

Wherever they ultimately lead legitimate news organizations, the infrastructures of programmatic advertising that variously discourage or prevent brands from understanding where their ads appear are central to the manner in which hoax news websites are monetized. However, what little academic research has been done on the programmatic advertising industry has tended to focus not on the opacity of the advertising supply chain, but on issues of consumer surveillance. Some scholars (e.g., Wu, 2016; Bell & Owen, 2017; Fenton & Freedman, 2018) have made the broad connection between programmatic advertising and clickbait, but comparatively little attention has been given by academics to the actual structure of the programmatic advertising ecosystem (Thomas, 2018), let alone the particular features of it that incentivize the creation not just of clickbait, but of hoax news and a variety of other objectionable content.

Given the extent to which commercial news organizations depend on digital advertising, the fact that the programmatic marketplace has drawn them into a shared financial ecosystem alongside hoax news sites creates structural issues worthy of scholarly attention. Attempts to address the problems created by hoaxers will inevitably have impacts on legitimate news organizations that are essential to understand.

Noxious Markets and Invisible Infrastructures

Ananny (2015), drawing on a conceptual framework from Debra Satz (2010), has suggested digital platforms can become “noxious markets,” wherein money is made or requested for things cultural norms dictate should not be for sale. As exemplars, he points to platforms like Über, whose fare algorithms enacted surge pricing in 2014 as people attempted to flee Sydney during a hostage crisis. Such firms subsequently faced public relations crises that forced them to at least partially forego the logic of the market in order to provide for the public interest. “Noxious markets” as a conceptual frame seems particularly relevant with respect to the programmatic advertising market, which—while creating opportunities for free speech by allowing ever smaller publishers to monetize their content—has also incentivized the creation of hoax news and other forms of “information disorder” (Wardle & Derakhshan, 2017) in ways that may already have proven damaging to democratic ideals.

While a wealth of literature has been published in recent years on “the politics of platforms” (Gillespie, 2010)—the manner in which digital intermediaries police activity on their services and strategically deploy language, policies, and technological interventions to position themselves favorably to different stakeholders—much of this literature, including the aforementioned Ananny essay, focuses on consumer-facing services. However, as Braun (2015) suggests, it is instructive to consider the politics of platforms in relation to less visible “transparent intermediaries” like ad tech companies—business-to-business firms that often position themselves to publishers and advertisers as platforms, but whose brands are not visible to consumers. It is in this spirit that we now examine how stakeholders in the ad tech ecosystem have understood its role in monetizing hoax news.

Method

In keeping with Braun's (2015) argument about the methodological value of tracing the path of content to the consumer, we sought to examine the supply chain through which ads ultimately end up on hoax news websites. Specifically, we chose to focus our attention on stakeholders within ad tech and to explore how their approach to the issue of monetizing online hoaxes might have broader impacts.

As already discussed, the chain of custody through which ads end up on hoax news sites is mutable, complex, and at the same time often largely opaque and difficult to document. Moreover, a single paper can scarcely begin to fully map out the expansive ad tech ecosystem, which consists of thousands of vendors spread across the globe and represents tens of billions of dollars of revenue. What's more, the use of programmatic advertising tools to monetize viral political hoaxes is a particularly sensitive subject on which to elicit interview participation from industry representatives. While acknowledging these obstacles, we nonetheless understood this to be an important issue and felt an interview-driven pilot study could help to outline the problem space and set the stage for future research.

To begin, we obtained a list of URLs of hoax news stories compiled by researchers at NYU and Stanford and used it to perform an automated browser crawl of over 200 hoax news sites.[1] For each site, information was logged about the different ad tech services of which the webpage was attempting to make use. From this data, we generated a list of the monetization tools most commonly invoked across these sites. We then reached out to the companies behind these tools to ask them about their perspective on the issue of "fake news" and its relationship to online advertising, as well as their experience with—and plans for—combating the monetization

[1] See Allcott and Gentzkow (2017) for these researchers' own study based on this data.

of online hoaxes. In part because of the sensitivity of the topic, our initial recruitment efforts were slow. As such, we also reached out to research contacts from previous studies. These individuals worked at ad tech firms not on the list, but were able to provide valuable insights, as well as introductions to representatives of firms on our target list and others relevant to the topic.

Our initial, semi-structured interviews became the beginnings of a snowball sample through which we ultimately conducted 20 interviews with subjects representing 17 different organizations connected to the programmatic advertising industry (Table 1). While many ad tech firms have an international presence, it is important to note that all of the individuals we spoke with represented organizations based in the U.S. Our findings should therefore be understood as a partial and U.S.-centric snapshot of the ad tech space.

Interviews averaged 50 minutes in length and were conducted by phone, with one exception in which the participant preferred to have the exchange by email. In all, 14.3 hours of interview audio were recorded. Each interview was transcribed and coded according to the themes that emerged from the larger interview set. In one case, a participant asked that our interview not be recorded, but allowed us to take detailed contemporaneous notes, which we treated akin to an interview transcript for the purposes of our subsequent analysis. While we identify research participants by their name and affiliation in this paper, because the topic was one that our interview subjects found to be professionally sensitive, we offered each the option to remain unidentified in published accounts of this research. We have respected such agreements in our attribution practices.

How Ad Tech Firms Understand "Fake News"

In discussing the problem of hoax news, participants tended to lump it into three broader categories of content, which we describe below. These modes of understanding the problem were not mutually exclusive, and participants commonly referenced more than one in the span of a single interview. One categorization of hoax news was as a *brand safety* issue. Ad tech companies make promises of brand safety to advertisers—assurances that their ads will not appear next to “unsafe” content like pornography, violent extremism, or hate speech. Some of sources lumped hoax news in with these other forms of content likely to be objectionable to advertisers.

Second, hoax news sites were often categorized *long tail* sites. Sources often distinguished between popular sites that garner the vast majority of the traffic on the web and the long tail—which includes basically everything else. Because popular sites are typically known quantities, the majority of problems with fraud and brand safety occur with long-tail sites. Some sources associated hoax news sites with the long tail and saw advertising strategies that relied heavily on long-tail sites as inherently risky.

Finally, hoax news sites were often categorized as being heavily associated with *ad fraud*. While it is clear that some hoax news websites are created for political or ideological reasons, sources at one of the largest programmatic ad tech companies, AppNexus, and the brand-safety firm Trust Metrics told us the bulk of hoax news sites they encountered through their services were straightforward examples of a common scheme for defrauding online advertisers. This assessment was shared by Alanna Gombert, until recently general manager of the IAB Tech Lab, an ad tech trade organization. As a result, these sources understood hoax news sites—or at least those that heavily employ online advertising—to be first and foremost money-making schemes. In some cases, the same publishers were even found to be operating hoax websites espousing opposing partisan perspectives. It is therefore worth illustrating how hoax news fits within the larger phenomenon of online advertising fraud.

The typical scheme for online advertising fraud is both simple and ingenious. A publisher sets up a webpage and pays money to one or more vendors who promise to send visitors to her site. In principle, these visitors will be interested users who click on links to the site that are promoted on social media and various pages across the web. In practice, fraudulent publishers will buy substantial amounts of their traffic from cut-rate vendors, almost certainly understanding that many (if not most) of the page views they deliver will be what the industry calls "invalid traffic" (Fulgoni, 2016)—page impressions generated by bots and clickworkers, not ordinary users.

This flow of "visitors" is monetized when publishers turn around and sells their sites' page impressions to advertisers, using the tools of the programmatic advertising industry to lure automated systems into bidding on the attention of counterfeit users. In other words, advertisers vie with real dollars to place ads that are ultimately shown to imaginary audiences. So long as the publisher sells these page impressions to advertisers for more than it cost to acquire them, a site generates revenue. This simple act of arbitrage can turn a tidy profit.

Given that the money to be made in online ad fraud often involves selling counterfeit traffic to programmatic advertising exchanges, at first glance it seems there's no need to show a site to humans at all. Automated traffic is sold to automated buyers in a sort of revenue-generating perpetual motion machine—an attention economy of robots, evoking old science fiction tropes of automatons continuing to sweep streets or fight wars long after the people who made them are gone.

But legitimate visitors are still valuable to fraudulent publishers, making clickbait an appealing choice of content. The more free traffic a site generates, the greater the resulting profit margin. However, as AppNexus noted in an analysis of fraud on its own platform, clickbait by itself can only draw so much attention (Misiewicz & Yu, 2017). Interviewee Marc Goldberg, CEO of Trust Metrics, described the day-to-day business of online ad fraud as drawing in just enough human visitors to provide a smokescreen for counterfeit traffic, thus making the automated revenue stream more difficult for ad tech firms and brands to detect. These sources explained that this is the game played by many hoax news sites, for which partisan conspiracy theories and other "fake news" serve as the clickbait that—from the publisher's perspective—ideally goes viral, but at minimum generates enough real visitors to provide sustainable cover for the bots and clickworkers who visit a site more regularly.

Programmatic Advertising in Focus

Whether hoax news is thought of primarily as a brand-safety problem, long-tail content, or a fraud issue, the fact that publishers were able to monetize such disinformation so successfully—to the tune of tens of thousands of dollars—seems a clear example of a noxious market. Comprehending how actors within the industry understand the underlying issues to be addressed and what solutions might be implemented, requires a deeper focus on the mechanics of the programmatic advertising industry. Like any complex system from which money can be made, programmatic advertising is often targeted for exploitation. That publishers would try to exploit this system is not surprising, but it does raise a couple of requisite questions.

Why Do Advertisers Tolerate "Fake News?"

Behavioral targeting. As discussed above, much of the programmatic advertising ecosystem is built around the idea of targeting individual users based on various forms of behavioral profiling. One example of an advertising strategy associated with this capacity is "retargeting," the familiar practice of displaying ads to users for products they've previously viewed. View a flowerpot on Home Depot's website, for example, and you begin to see flowerpot ads on other sites.

This focus on the user over the ad environment arguably incentivizes advertisers to accept the placement of their ads on disreputable sites, particularly when users visiting these sites presumably have no problem with them and it means getting the ad space more cheaply than on the site of a "premium" publisher like a mainstream news outlet. This emphasis is further exemplified by strategies in which ad agencies buy ads on premium publishers' websites just long enough to begin tracking their desirable users, then switch to placing ads in front of those same users when they visit cheaper sites. By these logics—at least until recently—hoax news sites may have been seen by advertisers not as parasites in the programmatic marketplace, but as opportunities to reach desirable users at a bargain price.

Content Discovery. "Content discovery" widgets are by now a familiar feature on the web. These are tools provided by ad tech firms that populate the bottom of an article page with links to ostensibly interesting or related content from other sites. Whatever else might be said about the clickbait-driven sites that often place these native ads, it should be noted that they are not branded advertisers. The titles of their publications and even their web addresses are presented inconspicuously, if they are visible at all. These advertisers take to the extreme McStay's (2017) observation that programmatic advertising privileges momentary interactions with users over long-term brand awareness. Their gambit is to draw in one-time visitors through eye-catching thumbnails and headlines ("Doctors hate her!") without any expectation of brand-awareness or loyalty. They constitute an entire class of advertisers without a brand to protect. The reputational risk to this group of having their ads appear on hoax news sites is thus minimal, and ad tech firms that specialize in working with them may similarly be less concerned about the appearance of ads on disreputable sites. This is especially true for smaller content discovery firms, which cannot afford to be as selective about their clientele as larger competitors.

Why Do Ad Tech Companies Tolerate “Fake News?”

Even given the above caveats, it’s not as though the major branded advertisers—with the largest budgets to spend—have no concern for the context in which their online ads run. So, under the rubric of brand safety, ad tech companies do deploy some tools and policies for combating the use of their services by websites objectionable to advertisers. Each has particular benefits, as well as associated challenges, and hoax publishers have been creative about working around them.

Blacklisting bans certain websites, known to be fraudulent or contain content offensive to advertisers, from displaying advertisements. Most ad tech firms maintain a blacklist of publisher websites with whom they refuse to do any—or certain types of—business. The issue with blacklisting, of course, is that only websites already known to be problematic can be banned. Meanwhile, the sheer volume of new websites created every day hinders many efforts made by firms to protect advertisers. Even a smaller company, with fewer than 70 employees, reported receiving on average over 400 publisher applications a day. Industry leaders like Google’s AdSense network blacklist millions of new sites annually, as well as hundreds of thousands of existing ones. “You literally have thousands of sites…popping up by the hour,” said Jason Kint, CEO of the publisher trade group Digital Content Next. “So blacklisting is not terribly effective.”

The difficulty of knowing which sites should and should not be added to a blacklist is made even more complicated by nefarious publishers’ use of a variety of “dark arts” to avoid detection, ranging from domain spoofing (impersonating a reputable publisher by offering up fake metadata) to cloaking (serving acceptable versions of a webpage to human and algorithmic moderators, while displaying the offending version to ordinary visitors). Moreover, publishers engaged in these forms of fraud expect to be caught and plan for this eventuality. When one user account is banned, another is created. When one site is blacklisted, the offending content is cut-and-pasted to a new one in an endless game of whack-a-mole.

Whitelisting is essentially the opposite of blacklisting. Rather than permit ads on any site that has not been flagged as problematic, whitelisting means allowing ads to be placed only on sites that have been screened and approved in advance. However, thorough whitelisting is arguably impossible at the scale at which large exchanges operate, and while advertisers can create whitelists of their own, it often means retaining the services of an additional brand-safety firm like Trust Metrics. One source at an ad creation firm argued that restricting advertising to whitelisted publishers has the potential to drive up prices significantly for advertisers and result in only larger, well-known "legacy" publishers having access to these monetization tools, thus limiting the democratizing potential of the programmatic industry. Some of our sources were more sanguine about the potential of whitelisting, but still acknowledged that the filtering out of smaller publishers was a legitimate concern.

The CEO at a content discovery firm noted that even publishers who've been screened and whitelisted often await site approval and, afterwards, simply change their content. Human review is necessary to prevent this, but it is highly resource-intensive. Ad tech companies—especially smaller ones with fewer human resources—are left to spot check publishers' sites for objectionable content or hoax news when a website experiences an unusual spike in traffic or generates customer complaints. As with many forms of online content moderation, ad tech companies' moderation efforts are—by necessity or by design—often reactive rather than proactive.

Algorithmic brand-safety checks. Some ad tech firms compare the content of webpages against lists of words and phrases that suggest a site might feature content objectionable to advertisers. They may also engage in other algorithmic checks of a site's content and metadata, looking for suspicious features, such as a layout that crams in unusual numbers of ads. However, these automated checks may not catch content designed to *look* legitimate—hoax news being the prime example. Additionally, hoax publishers may use cloaking techniques to disguise the true content of their sites from censorious algorithms. According to Jonah Goodhart, CEO of the third-party verification firm Moat, the problem of detecting hoax news at scale is made even more complex by the fact that, as the share of online content accessed over mobile social media has skyrocketed, legitimate publishers have resorted to clickbait techniques in order to snag audiences' ever-more-fleeting attention. In other words, attempts to automate the detection of hoax news are made difficult not just by the fact it's clickbait that mimics traditional news writing, but because legitimate publishers have adopted many features of clickbait. And while the largest players in ad tech like Google and Facebook may well turn to increasingly advanced machine learning techniques to root out hoax news, some sources we spoke with were skeptical of leaning too heavily on algorithmic solutions to brand safety problems, noting that increased reliance on automation had created many of these problems to begin with. "Our view so far is this is not a computer solvable problem at the moment," said Goodhart, one of several participants who emphasized the need for careful human review to accompany automated systems.

Publisher tiering. In some cases, ad tech firms will group publishers into tiers based on user-engagement metrics or other measures of quality and sell or recommend space on the sites to advertisers at corresponding rates. The top tier will be made up of high-performing sites, known to be brand-safe, while the less expensive tiers will be cheaper, but may feature less in the way of quality assurance. The critique here is that by demanding advertisers pay more to avoid objectionable content, this approach turns brand safety into a premium product rather than a baseline assurance.

The Programmatic Supply Chain

Most of the issues delineated above represent challenges faced by individual firms. But the complexity of the "fake news" monetization problem was most often attributed not to firm-level difficulties, but to the structure of the larger programmatic advertising ecosystem, and specifically to the number of parties to each transaction between a publisher and an advertiser (see Figure 1). As noted previously, this glut of intermediaries leads to an environment in which advertisers often have no idea their ads are appearing on hoax news sites. While this issue might be solved via better coordination between parties, additional interventions at the level of individual firms, and curbs on speculation practices, it is not necessarily in any one firm's best interest to lead the charge.

Disincentives to Action

A prisoner's dilemma. The number of ad tech companies is astronomical—around 3,000 according to one popular metric—and commonly understood to be far above what the market is likely to support in the long run (Evans, 2011; Gaon, 2016). This means if one company doesn't sell ads on a shady publisher's site, it's all too likely another company will. Combating fraud and improving brand safety are expensive—resulting in a prisoner's dilemma wherein each individual firm has an incentive (or an excuse) to do business with "bad actors." In the short term, blocking ad placements on questionable sites turns away revenue. And even if it's better for business in the long run, smaller firms especially are often concentrated on short-term survival. As Jason Kint highlighted in an interview, a good number of the intermediaries in the programmatic supply chain do not have to deal with any of the primary stakeholders to the transactions they facilitate—they do not interact directly with publishers, advertisers, or users. Even when firms are in contact with stakeholders, the networked nature of the marketplace can enable them to dodge individual responsibility for poor ad placement by pointing the finger at other firms in the supply chain. Additionally, advertisers' expectations for good placement have often been low and—as discussed above—prioritized behavioral targeting over the ad environment.

Avoidance of editorial responsibility. Some sources highlighted how making editorial decisions about whether content is appropriate or not can put companies in difficult positions—an argument common to controversies on all manner of online platforms. Once a firm has assumed editorial responsibility, it may have to defend its positions and delve into issues of free speech and censorship. It's much easier, they expressed, to be hands-off or to create a set of tools for advertisers to pick from themselves when deciding on the brand safety protections they want.

Outsourcing. When it comes to providing tools and technological interventions aimed at preventing fraud or the placement of ads on objectionable sites, many ad tech companies turn to outsourcing to limit their internal costs and project an image of objectivity by appealing decisions to a disinterested party. A side effect—or, perhaps a fringe benefit—of this approach is to diffuse the responsibility for problematic ad placements. When ad tech firms promise advertisers placement alongside only brand-safe content, or ask advertisers if they want their ads paired only with family-friendly fare, they may be outsourcing the actual determination of publishers' suitability to a service like Integral Ad Science (IAS).

While some of our sources viewed firms that specialize in combating fraud like IAS, Moat, DoubleVerify, or Trust Metrics, as the actors within the ad tech industry in possibly the best position (and with the clearest motivation) to eventually stamp out the monetization of hoax news, other individuals we spoke with suggested the existence of these companies might have the unintended consequence of allowing other ad tech firms to dodge responsibility for taking direct—and potentially more potent—action against malicious publishers utilizing their services.

Resources and size also play a role in the level of accountability a company is willing to accept. Both human review and the development of technologies for automated review of publisher sites for brand safety are resource-intensive. An executive with the smallest company we spoke with was quite frank about not being able to dedicate sufficient staff to the task. Not coincidentally, this participant was also among the most willing to argue that their platform should not be making editorial decisions on behalf of publishers or advertisers. While small firms may have the most legitimate claims of being under-resourced to solve the problem, even large firms have been known to make similar assertions. Jason Kint noted that the biggest players in ad tech sometimes spoke in this manner, and suggested such claims were disingenuous on their part: “Good grief,…how can human resources be the constraint for a company like Facebook?…And when you hear those words from a company like Google—‘we have limited resources’—it's just incredibly concerning, right?”

Asymmetries of resources also create problematic incentives. One source at a smaller ad tech firm noted that placing an ad allowed the company to collect an additional data point on the user to whom it was displayed. As a result, the temptation in borderline cases was often to err on the side of placing the ad, since much of the competitive advantage of large rivals like Google was seen to come from their holdings of vast troves of user data for use in behavioral targeting.

Addressing a Noxious Market

Following a wave of negative press coverage in the wake of the 2016 election concerning ad-driven profits raked in by purveyors of hoax news—the sort of event Ananny (2015) notes can be a turning point for a noxious market—we were curious to see what stakeholders in the programmatic ecosystem thought could or should be done to address the issue. Below we examine the solutions being proposed within the industry for addressing the monetization of hoax stories, as well as the benefits and drawbacks of each as identified by sources. We close by exploring what these conversations may mean for news organizations.

Trade Groups

Even if individual firms have little incentive to act on hoax news, the ad tech industry as a whole stands to gain financially and reputationally from reducing fraud and improving brand safety. Because of the prisoner's dilemma faced by individual tech companies, some sources felt movement would have to happen at an industry level, possibly led by a major trade association like the Interactive Advertising Bureau (IAB) or a cross-industry collaboration like the Trustworthy Accountability Group (TAG), which develops accreditation standards for ad tech firms aimed at ensuring best practices.

Action at the trade-association level would assure individual companies that investing to act more responsibly wouldn't provide their competitors with an unfair advantage—that the cost of developing solutions would be borne equally and that all firms connected to the trade group would apply uniform standards. In this sense, solving the hoax news monetization problem appears to be a case of a classic economic externality, where a bit of investment by a governing body expands the pie for all the stakeholders. But while trade organizations are intent on combating ad fraud broadly—and appear likely to take steps to improve the industry's response to "fake news" in particular—sources varied in how effective they believed these responses could be. One CEO even suggested trade organizations were there to give the illusion of movement on issues—"TAG is just a great excuse for people to say that they're trying to solve the problem," he said.

The major critique levied by interviewees was that the two largest players in ad tech—Google and Facebook—were seen to have a correspondingly outsized role within trade associations. Effectively, these critics said, any trade group response would be reducible to Google and Facebook's response to the issue. Alanna Gombert dismissed this criticism by pointing out that the goal of such trade organizations was to provide a space where large and small players in the industry could speak to one another on equal footing. Nonetheless, said Jason Kint, "It's hard to imagine any trade group that has Google and Facebook in it doing something that is ever going to be in conflict with Google and Facebook's interests. I mean, there's literally over a one-trillion-dollar market valuation between those two companies, so how is any association that has them in their membership able to do something that's in conflict with their interests?"

Industry Leaders

Google and Facebook take in two-thirds of online advertising revenue and have cornered an even larger share—around 90 percent—of recent revenue growth in the ad tech industry (Ingram, 2017). While Facebook has historically directed a good deal of traffic to hoax news websites—and now runs ads on sites outside its social network pages, sometimes to the surprise of advertisers—trade journalist Craig Silverman has called Google the "financial engine for fake news," since Google's ad tech tools are so frequently among those used by the publishers of these sites (quoted in Davies, 2016). It would seem, then, that Google in particular—by virtue of the amount of online advertising revenue it controls—is particularly well poised to constrict the flow of cash to hoax news sites. Some participants, however, were skeptical of the company's interest in doing so. "It does feel unfair that our competitors—who are these massive companies—are doing bad things…and there are no consequences," said AppNexus CEO Brian O'Kelley. "Maybe there's a little bit of PR backlash, but it's kind of an unfair playing field if you want to be an independent, ethical player." Critics pointed to Google's long history of protectionist policies when it came to interacting with the broader ad tech industry, as well as what they perceived as a weak response to recent controversies over "fake news."

To give just one example, when the rapid adoption of ad blockers was identified as an existential threat to the online advertising ecosystem, rather than join in a unified front with other ad tech companies to push back on the trend, Google instead began paying ad blockers to whitelist its services. Google's critics also argued it had a track record of protecting its interests over the public good, pointing in particular to its support for legislation in 2017 rolling back restrictions on the ability of ISPs to sell users' data, since the change stood to benefit Google's targeted advertising services.

Critics additionally gave Google poor marks for its response to the controversies that erupted in the wake of the 2016 election when the outsize revenues generated by hoax news publishers using its ad tech services were first reported. After reaping positive press for blacklisting several hundred hoax news sites and posting changes to its AdSense policies seemingly directed at the problem, Google then more quietly clarified that their new policies would not in fact affect most hoax news publishers. After the media spotlight had moved on, Google also quietly removed references to “fake news” from the policy altogether (Marvin, 2017).

Verification Services and Brand-Safety Vendors

Verification services like Moat, IAS, and DoubleVerify and brand-safety vendors like Trust Metrics are examples of companies already contracted by other ad tech firms and by advertisers to reduce fraud—making sure that online ads are actually viewed, that web traffic isn’t counterfeit, and so on. As such, these firms to some extent see combating hoax news as an extension of their existing business model. And indeed, they were some of the first ad tech companies to provide tools for advertisers to avoid hoax news websites. IAS, for instance, created a rating system aimed at showing advertisers the level of risk they would incur by placing an ad on a given site, while DoubleVerify created an optional filter to allow advertisers to opt out of “Inflammatory News and Politics”—a category that included hoax news websites (Alba, 2017). Our participants differed regarding how effective they believed such tools to be. Some participants felt verification services like these could prove effective in combating the monetization of hoax news sites. Others worried they were not up to the task, and some of these speculated verification services could even worsen the problem if other ad tech companies outsourced responsibility for rooting out bad actors on their own services.

Individual Ad Tech Firms

Unsurprisingly, then, some participants felt it was up to individual ad tech companies—particularly the programmatic exchanges and supply-side platforms that dealt most directly with publishers—to more carefully patrol the sites with which they did business. Because of the resource-intensive nature of this task, particularly on the dizzying scale of the programmatic advertising industry, doing an effective job could mean cutting into a firm's profit margins, which are already thin in the case of smaller companies. A C-level executive at one SSP spoke of the decision to expend resources cracking down on fake news as effectively a bet on the future of the industry. If there are far more ad tech firms at the moment than the market can ultimately sustain, the gamble is that as large advertisers begin to demand more accountability from the companies with which they do business, firms with a track record of responsibility will be the ones to reap the windfall as the ecosystem contracts, leaving a handful of ad tech vendors into which major brands pour their budgets. The risk is that advertisers will fail to reward these efforts or that the short-term cost of being responsible will run a firm aground before it can reap the benefits of having been upstanding.

Advertisers

Some sources were critical of the behavior of advertisers on a number of fronts. Alanna Gombert, Marc Goldberg, and former SpotX EVP Bryon Evje, for example, argued that ad tech companies already provide options that allow advertisers to choose safer placements for their ads, including working with more reputable firms, buying ads directly on premium publishers' websites, limiting ad buys to publishers who've been favorably tiered or whitelisted, paying for the services of security vendors, or simply purchasing more of the existing brand-safety protections offered by ordinary ad tech services. In other words, critics made the case that advertisers could already avoid appearing on hoax news sites if they were simply willing to pay a bit more or be a bit more thoughtful about how they spent their existing budgets.

"I put a lot of blame for the current state of the ecosystem on the advertisers," said Goldberg. "If they don't care, then no one will. If they don't say anything—if advertisers provide no incentives to fix things—then everyone in the industry will continue running on fake news, everyone's going to continue to let fraud happen, because they make money." Evje similarly argued large branded advertisers and their agencies had contributed to a lack of accountability by diverting the enormous television advertising budgets of years past into digital marketing without adequate consideration regarding how to spend the money effectively or strategically. The result of this influx of cash, he noted, was an explosion in the number of firms in the ad tech space—speculators and "players who are in business because the spends are outrageous and they're just looking for a piece of the pie." He argued new firms were being spun up largely to take advantage of advertisers' open wallets. Such firms courted the less critical brands and agencies with empty promises, ultimately adding little value to ad buys, but generating—and taking advantage of—additional complexity and opacity in the ecosystem. Recently, executives at a number of ad tech firms were even found to be turning out fraudulent sites themselves to skim personal profits from advertisers' budgets (Silverman, 2017).

One CEO argued advertisers had been happy to target desirable users on the cheap space offered by hoax news sites until the practice became controversial because of the bad publicity generated by post-election exposés and similar controversies in the press concerning the placement of ads alongside content promoting violent extremism. "As long as they were reaching the person they wanted, then they were less concerned about the context [in which their ad appeared]," said MixPo CEO Charlie Tillinghast. "But now they're being accused of essentially funding fake news or…hate speech or conspiracies...by virtue of the fact that their ad is running on that site. That's different." Some advertisers have indeed begun to rethink their online strategies and to demand greater accountability from the tech firms handling their ads.

Dedicated Initiatives

Controversies over the monetization of hoax news stories during the 2016 election also led to the creation of collaborations outside of the normal operations of the online advertising world. For example, industry critics led by CUNY journalism professor Jeff Jarvis lobbied selected ad tech companies into the creation of a new collective called the Open Brand Safety (OBS) initiative. OBS aims to combine the fraud-detection work these companies already do with the work of people outside of traditional ad tech—for example, the Knight-funded tech startup, Veracity.ai, and fact-checkers at the CUNY journalism school—to create a free, continually updated information repository on the credibility of websites. Ideally, the organizers hope the initiative will grow, adding more ad tech services not simply as users, but as contributors of useful data. Ultimately, Jarvis said, this collective might become more than a technical resource for ad tech companies aiming to improve brand safety on their platforms, but a coalition of organizations with the influence—and supporting data—to argue for better practices and accountability within the industry. OBS and similar initiatives—like the Trust Project advanced by the Markkula Center for Applied Ethics at Santa Clara University—are still very new, and participants were interested in their potential to help reform the industry. That said, as with verification services, these initiatives could arguably become vehicles to which firms delegate responsibilities they themselves could attend to.

Discussion

Almost across the board, our sources agreed that transparency—total clarity for advertisers concerning the placement of their ads and the specific intermediaries involved—would be the holy grail of accountability in the programmatic advertising industry. Hoax news sites are free speech, they argued, and no one should be barred from advertising on them. It's just that advertisers need to know if that's what they're choosing to do—and right now, because of the number of intermediaries handling each transaction—there's nowhere near the transparency necessary in the programmatic ecosystem to make those sorts of guarantees.[2]

New technical standards advanced by the IAB Tech Lab and other groups promise to solve some of these problems, making it easier to trace the chain of custody in the placement of a particular ad and harder for intermediaries to insert themselves into that chain without explicit permission from the advertiser. The adoption of these technologies, and the implementation of certified best practices, is also likely to be accelerated as companies in control of major advertising budgets pay increasing attention to who they're doing business with and how their money is being used. Recent controversies have been generated by *a)* the ad-driven monetization of hoax news, hate speech, and violent extremism; *b)* the fact that the glut of intermediaries involved in each transaction currently skim off over half of each dollar spent on programmatic advertising; and *c)* trade reporting on the large number of ad impressions being shown to bots and click farms. In response, some big-name advertisers are beginning to rethink how and where they spend.

Procter & Gamble, the world's biggest-spending advertiser, announced in 2017 that it would work only with firms that had received accreditation from trade groups signifying best practices for combating fraud. More recently, its competitor Unilever announced a partnership with IBM to use blockchain technologies to improve the transparency of its ad placements. Such changes may give more teeth to trade groups' technical and accreditation standards, incentivize

[2] This free speech framing is, perhaps, the primary area in which the U.S.-centric context of the discourse is reflected, whereas absolutes surrounding free speech and safe-harbor protections would seem less likely to dominate the discussion in non-U.S. regulatory contexts.

more individual ad tech firms to follow best practices, and cut off substantial revenues to other firms that can't or won't do so. Our sources had differing views as to whether or how this would lead to a meaningful reduction in profit-driven hoax news:

Optimistic. One claim was that, were they sufficiently motivated by advertisers or regulators, ad tech firms could quickly stamp out the monetization of hoax news through the dedication of human and technological resources they've thus far not had the incentives to develop. Moreover, they said if industry leaders like Google and Facebook cracked down on hoax news, this by itself should eliminate enough of the revenue potential for these sites to dramatically reduce the problem.

Pessimistic. Another argument was that hoax news is a form of fraud and that fraud is an inevitable aspect of business. While efforts to fight it are important, hoax news publishers and ad tech firms are ultimately participants in an arms race, in which increasingly sophisticated moderation techniques will be met with ever more sophisticated workarounds. Moreover, the argument goes, even if the most respectable ad tech firms successfully purge their rolls of hoax news publishers, smaller and more opportunistic firms will still provide a haven for fraud. The profit margins might be smaller, but—as with spam email—if hoax sites are cheap enough to produce they can still turn a profit and may be generated with great regularity far into the future.

Decoupling. A third possibility is that ad fraud and hoax news can be decoupled. In other words, while disreputable publishers will continue to engage in fraud, initiatives aimed at combating hoax news might cause fraudsters to turn their attention to other forms of content that prove easier to monetize.

It should be noted that these possibilities aren't necessarily mutually exclusive, and indeed our sources often offered viewpoints containing elements of more than one scenario.

Conclusion

Couldry and Turow (2014) argue the democratic function of journalism is fundamentally incompatible with the strategy of behavioral targeting underpinning much of programmatic advertising. They suggest staying competitive in the programmatic ecosystem will ultimately force publishers to function more as data brokers than as news organizations, and they argue for activism that challenges practices of "deep personalization" in advertising so as to better preserve subsidies for traditional reporting. Thomas (2018, p. 9) similarly argues that "for content producers, the critical question is not whether there should be [advertising] automation but whether there can be a better version of it." Pickard (2015), meanwhile, makes the case for policy reforms to enable news organizations to transition to non-profit and public funding models, perhaps underwritten by a trust to which the largest ad tech players must contribute a portion of their revenues.

All these authors recognize that, as it currently stands, the digital advertising industry is facilitating the collapse of subsidies that have long been central to the business model of many news organizations. Whatever changes ad tech firms decide to make—or not to make—to their respective services and the larger programmatic advertising ecosystem in order to cope with profit-driven hoaxes, these actions will simultaneously have further impacts on the economic realities faced by journalists.

If ad tech firms fail to provide adequate transparency and protection for brands, the simplest way for major advertisers to guarantee brand safety will be to stop buying ads on small publishers altogether—to lop off the "long tail" and to spend their budgets entirely on a few hundred or thousand of the most-visited publishers on the web. This would be a great economic development for the largest mainstream news sites, but—depending on where advertisers drew their boundaries—it could be terrible for the websites of independent newspapers and other small news sites, which are already among the hardest hit by declines in digital ad revenue. The impact of such a change would be exacerbated by the fact that smaller publishers are among the most dependent on programmatic exchanges for ad sales, whereas larger publishers tend to sell more ad space directly to brands, falling back on exchanges primarily to hawk leftover inventory (Malthouse, Maslowska & Franks, 2018).

Ironically, avoiding this fate seems likely to involve relying on the advertising industry to make more of the sorts of judgments—about truth and falsehood, acceptable and unacceptable speech—that have long been the domain of journalists. Programs like the Open Brand Safety initiative seem to have grasped this logical endpoint in creating novel partnerships between journalists and ad tech firms to collaborate in just this sort of work, though some will find this flouting of the church-and-state division uncomfortable.

Ultimately, our findings underscore the importance identified by Braun (2015) of extending scholarship on the politics of platforms to include not just consumer-facing services, but business-to-business intermediaries like ad tech firms that play a structuring role in the larger media ecosystem and impact its ability to support healthy public discourse. In particular, the observation that intermediaries' effects on the media ecosystem are rarely neutral is supported here, given the ways in which the interests of individual players in the programmatic supply chain are shown to cut against reforms that look sensible at the industry level. Further research is much needed, including quantitative studies that explore systematically the relationships between hoax publishers and different monetization services. However, the present study on the case of ad tech and hoax news appears to support assertions already levied by scholarly critics—that the advertising ecosystem is currently evolving in ways that will force news organizations to either enter into increasingly unconventional (and, perhaps, undesirable) relationships with the advertising industry or to move away from ad-driven business models altogether. Alternatively, news organizations may need to seek relief through policy reforms aimed at charting a third way.

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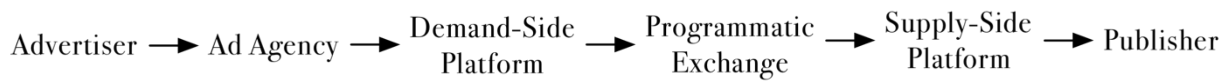
Table 1

Title	Number
CEOs	6
Other C-level executives	2
Vice Presidents	2
Managerial Titles	3
Project Lead	2
Developer	2*
Activist Group Leader	1
Total	17 participants (*one developer also held a managerial title)

The table above indicates the job titles of the research participants we interviewed. They worked for organizations that included ad exchanges and tech firms involved in ad creation, ad serving, ad optimization, brand safety, retargeting, supply-side platforms, demand-side platforms, content discovery, and publisher services. Three of the larger firms provided services at multiple points in the online advertising supply chain. We also spoke with individuals at two leading trade organizations in the online advertising space, one representing ad tech firms and the other publishers.

Figure 1



The typical ad buy represented here—straightforward by the standards of the industry—involves four intermediaries. In this example, the advertiser works with *1)* an ad agency, which manages its ad inventory and targets users via *2)* an ad tech service called a *demand-side platform* (DSP). To actually place those ads, the DSP connects to *3)* a *programmatic exchange*, which orchestrates the auction process through which ads are placed on publisher websites. The publishers connecting to the programmatic exchange typically work through an intermediary service as well—this one called *4)* a *supply-side platform* (SSP)—which allows publishers to manage the ad space they hope to sell through the exchange. Other vendors may be brought into the process as well to help parties to the transaction detect suspicious sites, ads, or traffic and conversely to rank the desirability of particular users or publishers. Additionally, as McStay (2017) describes, speculators may also participate in the process, buying and selling inventory solely to make a profit from fluctuations in market prices.