

**Abstract**

Sponsored content articles (N = 2,711) from 27 major U.S. corporations were analyzed across five years in the *New York Times*, the *Washington Post*, and the *Wall Street Journal*. The degree to which sponsored content predicted significant changes in corporate news coverage was investigated for elite media and U.S. online media. Corporate-sponsored content appeared to mildly suppress coverage of that corporation in online news. This effect, known as agenda cutting, happened both inside elite media and across the media landscape. Conversely, agenda building, or instances where sponsored content resulted in more media coverage, was very rare. We suggest that “content studios,” the departments of news media organizations that create sponsored content, may be exhibiting an agenda setting effect more akin to traditional advertising departments, which have been known to suppress critical coverage of corporations that pay for ads.

*Keywords:* sponsored content, native advertising, agenda cutting, agenda building, agenda setting, computational social science

### **Agenda-Cutting Versus Agenda-Building:**

#### **Does Sponsored Content Influence Corporate News Coverage in U.S. media?**

The relationship between journalism and advertising has always been complicated. As once the primary form of revenue for the majority of U.S. media, scholars have been particularly interested in how this advertising-supported economic arrangement shapes the composition of the journalistic content which is supposed to serve the public interest (Herman & Chomsky, 1988; McChesney, 2008). Newspaper advertising revenue has fallen from its apex in the early 2000s, and the industry has desperately attempted to replace this income stream despite a well-documented history of advertisers attempting to influence media content (e.g., An and Bergen, 2007; Colistra, 2012; DeLorme and Fedler, 2005; McChesney, 2008). This crisis in funding journalism has led to the adoption of increasingly invasive and deceptive forms of advertising (Einstein, 2016). The present study focuses on the effects of one such type of advertising, sponsored content, which media critics claim deceives audiences by masquerading as legitimate journalistic content (Author, 2020; Carlson, 2015; Einstein, 2016; Sirrah, 2019). While research on how sponsored content affects audiences is proliferating (Author, 2020; Wojdynski & Evans, 2016), little has been published about how this practice affects the production of news by newsrooms.

Until the mid-2010s, the monetization of legacy news websites was limited primarily to digital display advertising and digital subscriber revenue (Pavlik, 2013). One innovation designed to generate more revenue in recent years is sponsored content, an evolution of the print “advertorials” of yesteryear (Cameron & Curtain, 1995), a type of the broader “native” advertising industry trend (Wojdynski, 2016).<sup>1</sup> In this new practice, news publishers themselves

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<sup>1</sup> Online newspaper sponsored content is also referred to as newspaper *native advertising*

create advertisements for corporations designed to resemble the publishers' *non-advertising content*. Today, virtually all major online news publishers have created “content studios,” or separate departments inside of their organizations dedicated to generating such content (Einstein, 2016; Ferrer Conill, 2016; Li, 2019b). For instance, among the elite legacy media, the *New York Times* launched T Brand Studio, the *Washington Post* owns BrandStudio, and the *Wall Street Journal* has WSJ Custom Studios (see Li, 2019b for a review). This is a practice that has expanded globally, and, as such, has been examined by scholars internationally (e.g. Beckert, et al., 2020; Ferrer Conill et al., 2020; Iversen & Knudsen, 2019).

Contrasted with banner and pre-roll video ads, sponsored content usually is timely, of some impact to the reader, and written with a narrative. Sponsored content often involves custom video, interactive graphics, and high-end graphic design (Einstein, 2016). Because it so closely mimics the presentation and design of news content, audiences have difficulty recognizing corporate sponsorship – even if disclosures are present (e.g., this is a paid post brought to you by Nike) and are therefore more likely to be deceived into perceiving the content as news rather than a form of advertising (Author, 2020; Wojdyski & Evans, 2016).

Beyond the compelling design and narrative, the selling proposition of these content studios includes the “halo” effect of a publisher’s editorial integrity (Serazio, 2019, p. 9). For example, the *New York Times*, via its T Brand Studio, created a sponsored content piece on the disparities in the U.S. women’s prison system for the Netflix show *Orange is the New Black* (Einstein, 2016). The sponsored “article” painted a critical view of women’s prison systems, which was congruent with key themes of the show. This single piece of content was shared

thousands of times on social media, earning hundreds of thousands of impressions and dozens of articles by other media praising the effort.<sup>2</sup>

While there was critical acclaim, this example raises questions not only about how commercial interests may be infiltrating and distorting journalistic independence, but also how this content may be amplified throughout the media, thereby influencing broader news agendas. The articles a brand studio publishes are, in some ways, an alternative agenda. This agenda could be congruent to traditional editorial agenda, or completely divergent. Journalists tend to internalize the economic pressures of their publishers despite the metaphorical wall that is supposed to separate the editorial and business sides of newsrooms (Li, 2019a). Since the mid-2010s or so, there has been a dramatic shift in expectations — even at elite media — where journalists are increasingly expected to contribute to the development of revenue-producing products, including sponsored content (Gerth, 2017; Li, 2019a; Sirrah, 2019). For instance, the executive editor of the *NYT*, Dean Baquet, said, “The traditional news-advertising divide has become a luxury the *Times* can no longer afford” (Gerth, 2017, para. 8). Moreover, Jill Abramson, the executive editor of the *Times* who preceded Baquet, wrote that in their struggle to find new revenue, the *Times* and their elite competitors such as the *Washington Post* were “hammering holes in the wall that long separated news and business” (Abramson, 2019, para. 2). Indeed, journalists are even being trained to do double-duty, working as sponsored content creators. Since there are no bylines on sponsored content, audiences are unaware of the transgression (Sirrah, 2019; Westervelt, 2020). Thus, it should come as little surprise that these journalists may be reluctant to pursue reporting critically of the corporate sponsors whose ad

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<sup>2</sup> It is not possible to know the true performance of sponsored content as impression data is proprietary, but for an estimate, see: <https://digiday.com/media/netflix-native-ad-performed-best/>

dollars, in the form of sponsored content, keep the lights on in the newsroom (McChesney & Pickard, 2011; Atal, 2018).

While there has been growing academic interest in studying the effects of native advertising on audiences in the U.S. (e.g., Wojdyski & Evans, 2016) and beyond (e.g. Iversen & Knudsen, 2019), no known work has studied the effect of sponsored content on the journalistic entities that host the content. Moreover, no one has looked at the effect this coverage has on the broader mediascape. If journalists are reluctant to write about clients “without fear or favor,” public enlightenment may suffer. Given extant work that suggests corporations can exhibit influence on media when investing marketing dollars into those media (Atal, 2018; Colistra, 2012), this influence is ripe for empirical study.

In the present research, we take a first step forward by examining how sponsored content relates to the volume of coverage news organizations create about its sponsors. Under the theoretical lens of inter and intra agenda setting, this study assesses two possible outcomes. Does sponsored content boost the amount of media coverage for corporations that invest in it, or reduce it? We identify a large collection of sponsored content from the *Washington Post*, the *New York Times*, and the *Wall Street Journal* by extracting sponsored content articles from Bing Search and Twitter. Corporate sponsorship by 27 major corporations is tracked across five years, from April, 2014 to November, 2019. Our analysis also tracks news articles that mention these corporations, both inside these elite media and across U.S. online media. Together, we are able to assess the relationship of corporate sponsorship to subsequent corporate news coverage across time. We assess whether corporate sponsorship increases corporate news coverage (an effect commonly referred to as agenda building) or decreases it (also known as agenda cutting). In the

tradition of political economy (Herman & Chomsky, 1988; McChesney, 2008), this analysis informs our discussion of how these economic relations affect the independence of journalism.

### **The Media's Agenda and Corporate Interests**

While it has long been taught in journalism schools across the world that the news media should choose what to cover based on timeliness, proximity, prominence, unusualness, conflict, human interest, and impact (Parks, 2019), news media are not immune to other internal and external forces that can compel coverage. For instance, there are many ways that outside corporations can exhibit influence on a newsroom in which it invests marketing dollars. A case in point was in 2007 when the editor of the weekly *Victoria News*, a local newspaper in Canada, was fired following a complaint from an advertiser (Greenslade, 2007). The car dealer was upset by a story that advised car buyers to seek bargains across the border in the United States. These types of incidents appear to be small in number, however, with only a handful reported in the last twenty years.

Beyond rare staffing changes, academics have more frequently studied the influence that corporations have on news coverage of its sponsors. This line of agenda setting research puts forward that news media have great control over dictating the importance of issues, topics, and even corporations in the minds of its audiences (McCombs, 2018). As the adage goes, news media may not tell audiences what to think, but they do point them to issues and objects they should care about. For this reason, the agenda of a major news media outlet can be valuable. One corporation may desire more coverage for greater awareness, while another corporation may desire less media coverage to avoid audiences thinking of it critically. There has been a

significant amount of work dedicated to better understanding why news media organizations choose to cover certain topics over others.<sup>3</sup>

### **Intermedia Agenda Setting**

One such area is inter and intra media agenda setting which focuses on the conditions under which media influence themselves and other media. Initial research suggests that elite media, most commonly the *New York Times* (NYT) and the *Washington Post* (WP), set the media agenda of smaller news outlets (McCombs, 2018). The metaphor that is often used depicts smaller news operations, such as a local newspaper or television station, “looking over their shoulder” at these elite media.<sup>4</sup>

Early thinking and research did not account for online media, especially partisan ones. Mathes and Pfetsch (1991) introduced the idea that other media actors can manipulate the media agenda such as the “alternative press” and “media opinion leaders.” Expanding on the idea of the alternative press, more recent research has shown that indeed, partisan media news sites such as *Red State* and *Salon* can set the agenda for other, more elite media (Author, 2017). Even sites that have been known to distribute misinformation and disinformation, including *Breitbart*, can sustain the salience of an issue in traditional media (Author et al., 2018).

### **Corporate Media Agenda Setting**

#### **Agenda Building**

External actors can also exhibit an agenda setting effect on news media (Manheim & Albritton, 1983). When talking about the influence that corporations have, agenda setting theory tends to describe “agenda building”. Agenda building is typically operationalized as observing

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<sup>3</sup> See McCombs (2018) for a recent review of media agenda setting. A media’s agenda can be thought of as the relative importance a media outlet puts on a particular issue, or object. Importance is usually operationalized as salience, or more practically the number of stories, or mentions, that a particular issue or object receives in the news.

<sup>4</sup> National newspapers, such as the *Los Angeles Times* or *U.S.A Today*, are also perceived as elite (McCombs, 2018).

an increase in news coverage of that corporation following a public relations effort (McCombs, 2018).<sup>5</sup> In a world of shrinking resources, journalists rely more on press releases and public relations practitioners for story ideas, content, and data (Herman & Chomsky, 1988; Kim, Kiouisis, & Xiang, 2015; McChesney, 2008). This reliance has created an opportunity for public relations firms to *build their agenda* in the news by creating public relations tactics that generate news coverage, a desired outcome of the practice commonly referred to as *media relations* (Curtin, 1999). To assess their success, public relations firms measure the number of news stories a media relations campaign generates. This is often a proxy for how much value the campaign brought. In an analysis of 28 major U.S. corporations, Kiouisis, Popescu and Mitrook (2007) found that news coverage, when positive in nature about a corporation, led to a positive change in audience perception of that corporation.

Ragas, Kim and Kiouisis (2008) performed a corporate agenda building case study. They studied a high-profile proxy contest between the incumbent Yahoo! Inc. board of directors and billionaire investor Carl Icahn with his rival slate of directors. Icahn initiated a proxy battle for control of Yahoo!'s board after the Web portal company rejected an unsolicited \$47.5 billion takeover from Microsoft. This contest featured a steady stream of dueling candidate-controlled messages that received significant financial media attention, thereby providing a unique setting for evaluating the transfer of issue salience in this new context. Support was found for issue agenda-building revealing that both Yahoo!'s and Icahn's information subsidies generated news coverage that reflected both parties' public relations viewpoints.

Advertising has also led to agenda building. Many accounts chronicling the turn of early American newspapers away from the political patronage of pre-1850s to advertising-supported

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<sup>5</sup> For instance, if the number of news articles that mention a corporation rises in the days following a press release, this would be considered an observation of an agenda building effect.

business models indicate that advertising often served as a means to commission “puff” pieces or “reading notices” in newspapers (Bagdikian, 2004, DeLorme & Fedler, 2005; Serazio, 2019). Often written by advertisers themselves, these were offered by publishers to keep their advertising clients happy and can be considered the predecessors of contemporary sponsored content. Bagdikian (2004) identified as an exemplar the 1835 case of the *New York Herald* and the patent medicine pills of Benjamin Brandreth, “a quack who sold phony cure-all pills” (p. 233). After a fire destroyed its presses, a large advertising contract from Brandreth allowed the *Herald* to get back in circulation. Not only did a profusion of ads for Brandreth’s pills ensue, but also “a steady diet of ‘news’ stories, presuming to be straight reporting...recounting heroic cures effected by none other than Dr. Brandreth’s pills” (Bagdikian, 2004, p. 233).

In the realm of political candidates, advertising has also been shown to build news media agendas (Boyle, 2001; Roberts & McCombs, 1994). In 1996, as presidential candidate Robert Dole advertised more, the television news media spent more time covering him. In this way, he was able to build his agenda in the mainstream media (Boyle, 2001). Fowler and Ridout (2009) refer to this as “ad amplification,” when news media amplify the content of paid political advertising. It is most prevalent with negative political advertising. However, because sponsored content usually avoids controversies and scandals (Serazio, 2019) and is, therefore, generally positive in tone, we find it less likely that this type of agenda-building effect will be present as it relates to coverage of corporations.

Given evidence that corporate news agendas can be built through both public relations and advertising, we offer the following hypothesis:

H1: Investment in sponsored content by corporations will result in relatively more news coverage of said corporation.

H1a: This effect will be observed inside of the elite media studied.

H1b: The effect will be observed across the entire U.S. media landscape.

### Agenda Cutting

In contrast to public relations efforts and the reading notices of yesteryear, corporations have different aims when employing contemporary sponsored content. Sponsored content comes with guaranteed placement and promotion and is designed to inform audiences (e.g., consumers) directly. This audience-facing marketing tactic is more akin to traditional advertising where campaign value is more commonly measured by impressions and engagement (Sirrah, 2019). This content is not designed *for* journalists, but *by* journalists. Thus, it does not seem logical to assume that sponsored content will necessarily have an “agenda building” effect on its own.

Given that sponsored content is an extension of native advertising, it is worth considering another agenda setting effect that *advertisers* have on content-related decisions in media organizations (Bagdikian, 2004; McChesney, 2008). Unlike the public relations industry, the advertising industry supports journalism by paying for ads to appear on publisher news sites (Meyer, 2009). Corporations that pay for sponsored content have a similar relationship with news media. In-house custom studios create and disseminate content on contract for corporations. Thus, from a revenue perspective, just as advertising departments in news organizations are designed to retain corporate clients, so are content studios. The revenue that both departments generate likely make them powerful within their organizations.

While a public relations media campaign aims to boost news coverage of a corporate client and ultimately consumer impressions, this is not necessarily a primary consideration for advertisers. Advertisers pay for impressions directly and can, instead, exert a chilling effect on news media coverage of corporations, an effect commonly referred to as “agenda cutting”.

According to Colistra (2012, p. 100), “Agenda cutting may occur in three ways: (1) by placing an item low on the news agenda (burying it), (2) by removing it from the agenda once it is there, or (3) by completely ignoring it by never placing it on the agenda in the first place.”

This agenda-cutting power over journalist behavior is thought to stem from advertising departments in news media organizations. Research indicates that reporters have often felt pressure to avoid covering major advertisers in a negative light (Colistra, 2012; DeLorme & Fedler, 2005; Sirrah, 2019). In the 1950s, for instance, Camel cigarettes prohibited the NBC newscast it sponsored from showing cigars or images of “No Smoking” signs. Similarly, *Mother Jones* magazine lost cigarette advertisers after publishing a story about the links between cigarette smoking and cancer (Bagdikian, 2004; Colistra, 2012). More recent anecdotes involving sponsored content, specifically, have also emerged. For example, BuzzFeed – a digital-only media organization built upon a sponsored-content business model – has been criticized for pulling articles that were less-than-positive about supporting advertisers such as Unilever (Trotter, 2015). Similarly, the *Telegraph* discouraged its reporters from publishing articles critical of a large advertiser, HSBC, with one *Telegraph* executive stating that the bank was “an advertiser you literally cannot afford to offend” (Cusick & Boros, 2018, “A Fraud on Readers,” para. 2). Indeed, a study that interviewed journalists across six newsrooms in the U.S. and U.K. concluded that investigative business journalism has likely declined in media organizations as a result of the increasing adoption of sponsored content (Atal, 2018).

Anecdotal evidence has also emerged suggesting that corporations engage in sponsored content to counteract, or “whitewash,” negative press coverage by trying to reach consumers directly. For instance, following investigative reports in the *NYT* about possible contamination of baby powder with asbestos (Hsu, 2019), the *NYT*’s T Brand Studio created and ran sponsored

content on behalf of Johnson & Johnson – the target of class-action lawsuits and the investigative reporting – that debunked myths about ingredients in personal care products (T Brand Studio, 2019). Similarly, *STAT News* – a health news publication owned by the *Boston Globe* – ran a series of investigative articles regarding the addictiveness of Purdue Pharma’s opioid medications (Facher, 2018). It also hosted a progression of sponsored content from Purdue touting the efforts it was taking to address the opioid epidemic (Purdue, 2018).

While these anecdotes are powerful, no existing work has empirically quantified the actual change in agendas driven by real corporations through sponsored content. Putting forward the rationale behind the “agenda cutting” effect, we offer the following predictions:

H2: Investment in sponsored content by corporations will result in relatively less news coverage of said corporation.

H2a: This effect will be observed inside the elite media studied.

H2b: The effect will be observed across the entire U.S. media landscape.

As with most modern agenda setting research involving big data, both types of influences could well be true (e.g., Author et al., 2018). That is, sponsored content could both cut and build agendas in different moments for different corporations. Together, we ask to which extent either effect is observed:

RQ1a: To what extent does sponsored content drive significant change in news coverage in elite media?

RQ1b: To what extent does sponsored content drive significant change in news coverage across the entire U.S. media landscape?

Finally, it is important to note whether agenda cutting or agenda building is more prevalent. Often, agenda-setting research is summarized by a single type of influence. By

understanding which effect was observed more frequently, we can better summarize the influence overall.

RQ2a: Does sponsored content more commonly cut or build agendas of major corporations in elite media?

RQ2b: Does sponsored content more commonly cut or build agendas of major corporations across the entire U.S. media landscape?

## Method

### The Content Studio's Agenda

With the rise of content studios in news organizations, we put forward the idea that there are now competing news agendas inside of major news organizations. While sponsored content does not replace journalistic content, it fills space that news organizations do not have the resources to fill otherwise, thereby presenting a competing agenda. Furthermore, as Sirrah (2019) reveals, publishers are often contractually obligated to *promote* paid content on social media which comes at the expense of not promoting genuine news articles. In other words, just as the *New York Times* manifests their news agenda via the articles they write, they also now manifest an agenda via the sponsored content they generate – both on their webpages and on their social media platforms. These agendas are hardly congruent and are subject to direct corporate influence. We now can measure corporate influence via purchased sponsored content using agenda-setting methodology. To date, no known work has attempted to gather and measure these agendas and assess the degree to which these agendas may interact with 1) the news agenda of that news organization and 2) the news agenda of the media landscape more broadly.

### Finding Sponsored Content

Sponsored content is difficult to identify and extract from news websites.<sup>6</sup> For this reason, this study chose to focus only on three major news publishers: the *NYT*, the *WP*, and the *WSJ*. These publishers are widely regarded as “elite media” (McCombs, 2018) and, as such, are seen as especially influential in terms of agenda-setting ability. We employed a two-pronged approach to finding sponsored content articles: 1) by scraping the corresponding content studio Twitter accounts for sponsored content links and 2) by using Bing to search for sponsored content links inside of the news websites.

### Using Twitter to Extract Sponsored Content Links

The *NYT*, the *WP*, and the *WSJ*'s content studios share their work — the sponsored content articles they create — on Twitter (Sirrah, 2019). A marketer, for instance, might follow these accounts to get an idea of what types of sponsored content the news organization is capable of creating. These posts include links to their sponsored content. As such, all tweets were downloaded and URLs were extracted. This was done using Twitter's premium search application programming interface (API), which provides complete historical access to tweets.<sup>7</sup> The “from:@account” search parameter was used. Tweets with URLs were extracted, and if links followed the typical link structure expected (e.g., [www.nytimes.com/paidpost](http://www.nytimes.com/paidpost)), links from said Twitter account were included in the analysis as sponsored content.

### Using Bing Search

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<sup>6</sup> This is for several reasons. Many news websites treat branded content as a separate part of their website. As such, news scrapers such as GDELT don't ingest the majority of native advertising. Moreover, one brand studied here, WP Brand Studio, employs a strict `robots.txt` to its sponsored content website, and as such, the content is not available on popular search engines, including Google.

<sup>7</sup> A review of Twitter's Premium Search API can be found here: <https://developer.twitter.com/en/docs/tweets/search/api-reference/premium-search>

In addition, because there is no programmatic way to extract search results from Google, Bing Search was used via its API, available via the Azure Platform, to retrieve sponsored content stories for each publisher.<sup>8</sup> For each news organization, a query was created. That query was created in a way so that results would only return sponsored content articles. For instance, the query for the *WP* was:

*site: washingtonpost.com/ "brand-studio" "content from"*

This query 1) only looked at web pages on wasingtonpost.com and 2) only retrieved articles that had “brand-studio” on the page and also had the “content from” disclosure on the article. Similar queries were constructed for the *WSJ* and the *NYT*. All matching URLs were retrieved.

### **Sponsored Content Manual Content Analysis**

In all, 3,024 URLs were identified. These URLs were annotated by two researchers. The researchers 1) confirmed the content was actually sponsored (e.g., contained a disclosure), 2) identified the sponsor, 3) recorded the sponsors’ official company name, 4) looked for the sponsor in *Fortune*’s top list of the largest 1,000 companies, and 5) marked whether the company was in the *Fortune* 1000 list. Before annotating the entire dataset, two researchers coded the same random set of 100 articles with perfect agreement. Given the straightforward and objective nature of the task, the researchers felt comfortable continuing. In all, there were 2,707 articles identified as sponsored content.

### **Measuring the News Media Landscape**

The Global Database of Events Language and Tone (GDELT) is a big database of news coverage (Leetaru & Schrod, 2013). It is regularly used to extract collections of news from

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<sup>8</sup> A review of Bing’s Search API can be found here: [https://en.wikipedia.org/wiki/Bing\\_\(search\\_engine\)](https://en.wikipedia.org/wiki/Bing_(search_engine))

publishers.<sup>9</sup> GDELT indexes news content much like Google News. It annotates said data for the presence of many things including people, places, and organizations. GDELT also extracts mentions of corporations from articles. The GDELT Global Knowledge Graph 1.0 was downloaded for the entire period of the sponsored content annotated in the previous content analysis step (April 1, 2014 to November 28, 2019). For this study, we retrieved two collections of news: 1) the elite media studied here [*NYT*, *WP*, and *WSJ*], and 2) the news media landscape. We define the latter as news websites that have been shown to broadly represent all online, major U.S. media, including a) partisan or bipartisan b) traditional or emerging and c) online or offline. Across all articles in the corpus, GDELT detected 478,988 unique corporations.

### **Matching Fortune 1000 to GDELT**

The researchers then needed to match mentions of corporations in sponsored content to their corresponding company names in GDELT. GDELT extracts company names as they appear in articles. For instance, while Spotify may be mentioned as such, it is also mentioned as “spotify inc,” “spotify ltd,” and “spotify team”. In the Fortune 1000, the same corporation is identified as “Spotify.” To resolve these subtle differences in corporation names, fuzzy matching was used. Fuzzy Matching (also called Approximate String Matching) is a technique that helps identify two elements of text, strings, or entries that are approximately similar but are not exactly the same. When comparing two strings via a fuzzy match, a score is given; the higher the character similarity between two strings, the higher the score. Two research assistants investigated all fuzzy matches with a score of 70 or higher using the Python package Fuzzywuzzy.<sup>10</sup> If the match was indeed a valid match of a company, it was subsequently used to retrieve articles that

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<sup>9</sup> To see GDELT in an agenda-setting context, see Author et al.’s (2018) work. To get started with GDELT for research, see Hopp, Schaffer, Fisher, and Weber (2019).

<sup>10</sup> The package is available here: <https://github.com/seatgeek/fuzzywuzzy>

mentioned those companies.

### Corporation Search Precision in GDELT

For each valid GDELT company, 5 articles were fetched using the GDELT entities identified. These matches were inspected by a researcher to see if the company in question was actually mentioned in the article. If the percentage of positives had accuracy at or above 80%, it was included in analysis. In all, 379 companies with at least one precise GDELT corporation match were found.

### Time Series Analysis

1,137 time series were prepared, 3 for each of the 379 corporations. Each time series represented the daily count of articles that a specific corporation had in either: 1) the elite media 2) all major online U.S. media, or in 3) sponsored content. We adopted Facebook Prophet as our time series modeling tool.<sup>11</sup> Facebook Prophet handles seasonality by deliberately modeling for yearly seasonality. We feel this is especially important in modeling news patterns and cycles.<sup>12</sup> Prophet allows for changepoint modeling, a statistical test of significant change in general trends on a specific date.<sup>13</sup> In the end, for each day that a corporation published a sponsored content piece, that piece was treated as a possible changepoint for elite media and all U.S. online media generally. Prophet detects significant changepoints using an L1 regularization approach, and ultimately tries to accept as few changepoints as possible for a reasonable fit.<sup>14</sup>

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<sup>11</sup> For a review of Facebook Prophet, please see Taylor and Letham (2018).

<sup>12</sup> For instance, Prophet can easily learn that a company, such as IBM, will receive more coverage around April 20<sup>th</sup> and each following quarter. While an ARIMA model might handle this with an AR(90) component, such an ARIMA model would take days to generate and would likely include dozens of insignificant AR lags, thereby overfitting the data.

<sup>13</sup> Sponsored content time series for corporations are extremely sparse. That is, for the majority of days or weeks in a time series, a brand will not have sponsored content. It is a rare occurrence and as such cannot be modeled as an exogenous variable in an ARIMAX model. More commonly, rare occurrences are modeled as possible changepoints in a general trend component of a time series model.

<sup>14</sup> In addition to the sponsored content article changepoints, it also specifies a large number of *potential changepoints* at which the rate is allowed to change. It then puts a sparse prior on the magnitudes of the rate changes

To generate a Prophet model with good fit, time series data cannot be exceptionally sparse. Put another way, to fit a model for a corporation, news media had to regularly publish articles about that corporation. This means that only often-mentioned corporations could be modeled, an important limitation of this study. We tried multiple different thresholds, but found that by choosing the top 25 most covered corporations for elite media and all online media, we were able to build models that all had reasonable fit. In all, 27 corporations were included for time series analysis.<sup>15</sup> Additionally, to allow for good fit, daily data was resampled to weekly totals with weeks starting on Monday. While we cannot provide forecast and seasonality plots for each of the 54 models here (27 for elite; 27 for all U.S. online media), we show Aetna in Figure 1 for elite media and Huawei in Figure 2 for all media.

### **Illustrating Agenda Cutting and Building Effects**

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(equivalent to) - this essentially means that Prophet has a large number of *possible* places where the rate can change, but will use as few of them as possible. The sparse prior scale used for changepoint detection was .5.

<sup>15</sup> There was a three-way tie for the 25<sup>th</sup> most covered, meaning 27 were included: Verizon, Airbus, Volvo, American Petroleum Institute, Dow Jones, Qualcomm, Holiday Inn, Huawei, Purdue Pharma, Netflix, Gartner, Subaru, Oracle, Fox Sports, Deloitte, Walmart, Nordstrom, Allergan, Accenture, Lockheed Martin, Samsung, IBM, Wells Fargo, MetLife, Delta Air Lines, Aetna, and Starz.

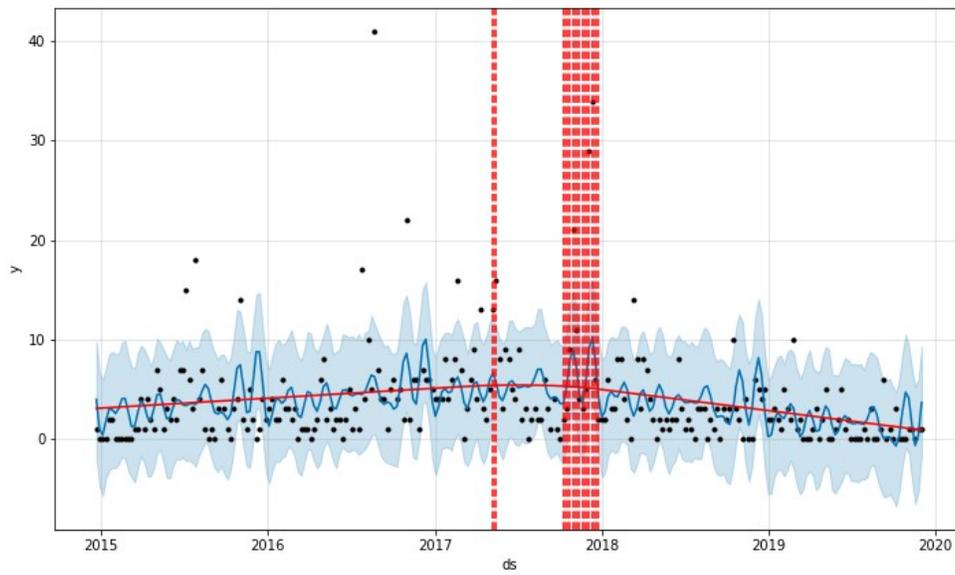


Figure 1a. Forecast and seasonality plot for Aetna in elite media.

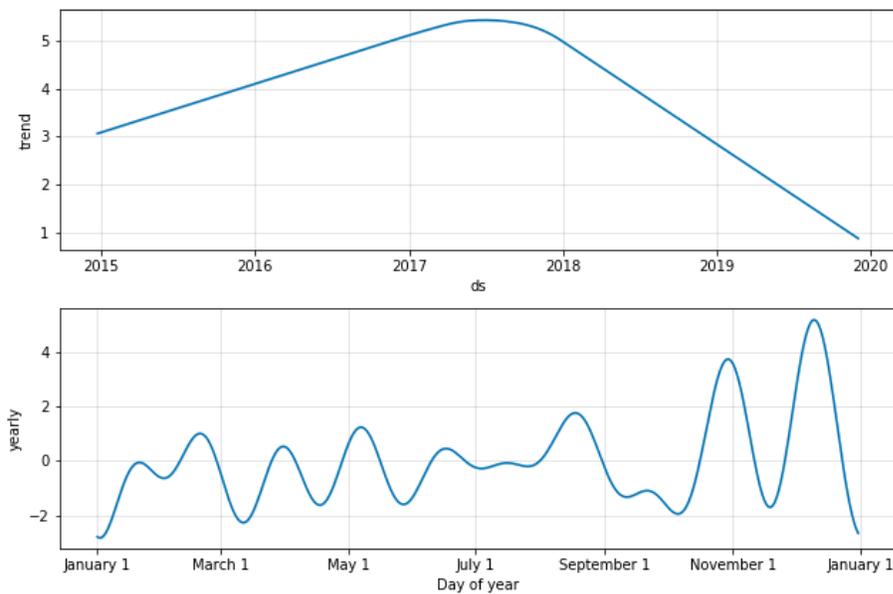
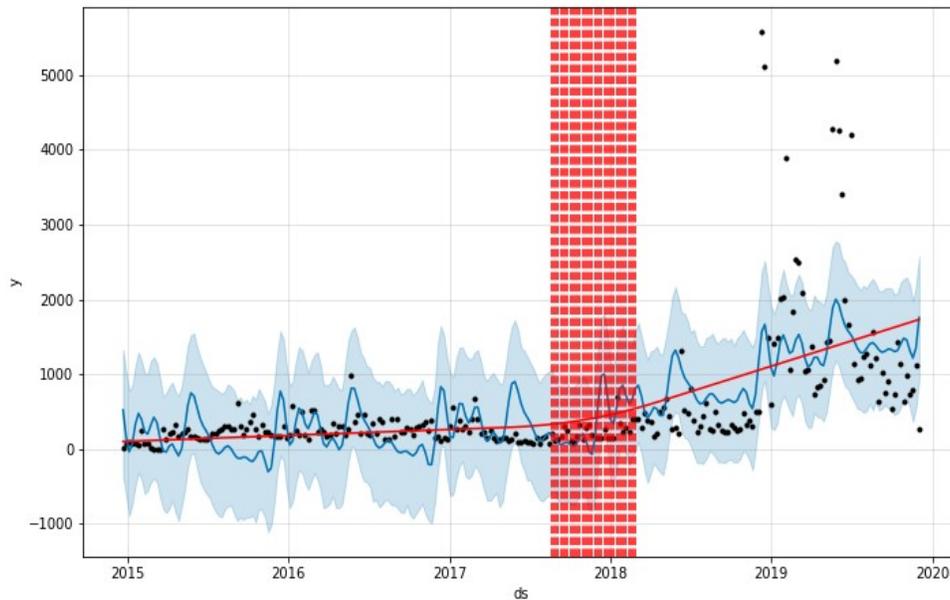


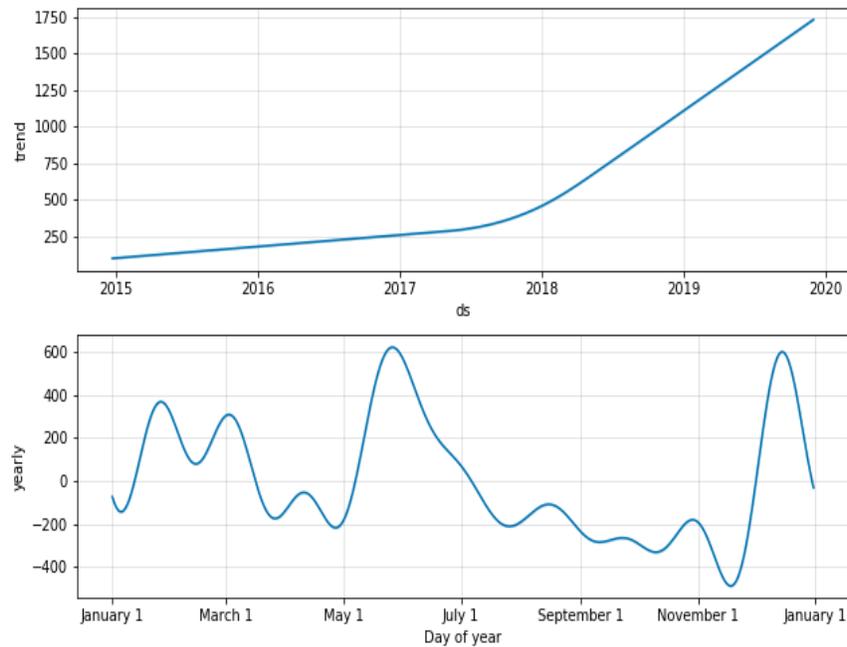
Figure 1b. Forecast and seasonality plots for Aetna in elite media.

In Figure 1a, one can see that there were two different periods of time where significant changepoints were detected through L1 regularization. They are visually represented by the dotted red lines. By inspecting the change in the general trend (the top subplot) in Figure 1b, one

can see that both changepoints resulted in a negative change to the general trend. Because the change is negative, we consider this an agenda cutting effect. Put in context, sponsored content published on these dates marked the beginning of a negative change in elite media coverage for Aetna.



*Figure 2a.* Forecast and seasonality plot for Huawei in all online U.S. media.



*Figure 2b.* Forecast and seasonality plots for Huawei in all online U.S. media.

Conversely, in Figures 2a and 2b, we observe a positive significant change in the general trend. We interpret this as one, rare, observation of agenda building. Put in context, sponsored content published on these dates marked the beginning of a positive change in elite media coverage for Huawei.

Notice that while Facebook Prophet does a generally good job of fitting the data, it does not adjust well in Figure 2a. Secondary research reveals that the spike corresponded with the U.S. government announcing that they would no longer allow Huawei phones to be sold in the U.S. citing privacy and national security concerns with China.<sup>16</sup> This is a disadvantage to Prophet's approach when compared to ARIMA. Because the spike was not consistently observed in the data from year to year, the Prophet model did not incorporate it into its seasonality models. In this way, Prophet does not overfit the data to past values like an ARIMA approach. It models

<sup>16</sup> See the discussion section for a detailed review of this case study.

the consistent change in media across time, but it does not fit breaking news. All things considered, we think this approach models changepoints in the data more conservatively and allows for changepoints to act as intended, as an indication of an event.

## Results

H1 predicted that sponsored content would build the salience of corporations in news coverage. H1a focused specifically on this effect in elite media. Of the 27 brands analyzed, only three corporations exhibited an agenda building effect: Huawei, Qualcomm, and Purdue Pharma showed signs of agenda building (all with changepoint effects of  $\beta > .05$ ).<sup>17</sup> As such, we find little support for agenda building across the corporations here. H1b addressed agenda building across the entire U.S. media landscape. Only Huawei and Purdue Pharma generated such an effect (with changepoint effect of  $\beta > .05$ ). Given the overabundance of negative evidence, we conclude that agenda building is very rare. As such, we find little support for both H1a and H1b hypotheses.

H2 predicted that sponsored content would cut the salience of corporations in news coverage. H2a focused specifically on this effect in elite media. Of the 27 brands analyzed, seven brands exhibited significant agenda cutting effects (with changepoint effects of  $\beta > .05$ ): Netflix, Nordstrom, Starz, Wells Fargo, Aetna, Oracle, and Qualcomm. Overall, we give some support to H2a.

H2b addressed the extent to which this effect was observed across the entire U.S. media landscape. Aetna, Delta Airlines, Wells Fargo, IBM, Samsung, Lockheed Martin, Accenture, Nordstrom, Oracle, Subaru, Netflix, Dow Jones, American Petroleum Institute, and Verizon

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<sup>17</sup> The higher the threshold, the more malleable the trend, we chose here to be conservative and use a strong statistical bar for evidence of an effect. For more, please see: [https://facebook.github.io/prophet/docs/trend\\_changepoints.html](https://facebook.github.io/prophet/docs/trend_changepoints.html)

(52% of the sample) all showed significant agenda cutting effects (with changepoint effects of  $\beta > .05$ ). This gives moderate support to H2. Some corporations receive less coverage in the U.S. online media after publishing sponsored content.

Overall, when considering H2, we observe some support for the general notion that corporate-sponsored content leads to agenda cutting of that corporation in online news.

Table 1  
*Summary of Significant Changepoint Effects*

Corporation	Agenda Building		Agenda Cutting	
	Elite	All U.S. Media	Elite	All U.S. Media
Huawei	*	*		
Qualcomm	*		*	
Purdue Pharma	*	*		
Netflix			*	*
Nordstrom			*	*
Starz			*	
Wells Fargo			*	*
Aetna			*	*
Oracle			*	*
Delta Airlines				*
IBM				*
Samsung				*
Lockheed Martin				*
Accenture				*
Subaru				*
Dow Jones				*
American Petroleum Institute				*
Verizon				*

*Note.* \*denotes significant changepoint effect as observed through time series modeling. Changepoints are deemed significant if the effect size  $> .05$ .

RQ1a asked about the extent to which sponsored content drove significant change in news coverage in *elite media*. Of the 27 brands studied, 10 exhibited at least one significant

effect (with changepoint effects of  $\beta > .5$ ). This suggests that some of the corporations that invested in elite media sponsored content saw a significant change (up or down) as a result. RQ1b asked about the *entire online, U.S. media landscape*. To this end, 16 companies exhibited some effect (with changepoint effects of  $\beta > .5$ ), suggesting that half of the corporations see a significant change in salience across the media landscape when they publish sponsored content, one way or another.

RQ2a asked whether sponsored content more commonly cut or built agendas of major corporations in *elite media*. Three corporations exhibited a building effect, and seven exhibited a cutting effect (with changepoint effects of  $\beta > .5$ ), suggesting that agenda cutting was a more common result of corporate-sponsored content. RQ2b inquired about the same effect across the entire online, U.S. media landscape. Only two corporations built an agenda (with changepoint effects of  $\beta > .5$ ), whereas 14 cut agendas. Overall, agenda cutting appears to be more prevalent than agenda building.

### Discussion

Only three of the 27 corporations studied here appear to have built news agendas using sponsored content. This effect was observed inside elite media and across the entire online, U.S. media landscape. Although agenda building is the most commonly researched and discussed agenda setting effect that corporations are known to have on mainstream media, here we show that, more often than not, the effect is observed in the opposite direction. That is, sponsored content tends to suppress the salience of a corporation across the entire online U.S. media landscape for approximately half of the corporations studied here. While corporations build agendas by gaining news coverage through public relations efforts, they appear to cut agendas using sponsored content. The data studied herein cannot conclusively tell us *why* sponsored

content cuts agendas. However, this finding is entirely consistent with research by Atal (2018) who found that content studios act like advertising departments of news organizations, which have been known to suppress critical coverage of their corporate clients due to the significant revenue they bring to the company (An & Bergen, 2007; Colistra, 2012; DeLorme & Fedler, 2005; McChesney, 2008).

It is important to note the overall frequency of the observed effects. Approximately half of the cases in this study exhibited an agenda cutting effect, but conversely, half did not. Our statistical tests are rigorous enough to suggest that such an incidence rate is highly unlikely due to chance alone. Nonetheless, *agenda cutting does not always* occur; it may not even be the most common result. Combining this finding with the absence of virtually any agenda building, we caution readers not to paint a picture of newsrooms having completely succumbed to the agendas of sponsored content. At worst, it appears that content studios may have *some* influence in redirecting *some* journalistic attention away from its clients. This reinforces the idea that while sponsored content may suppress content, newsrooms are not completely malleable. After all, as we observed anecdotally, the news agendas of corporations do respond to real world cues, such as quarterly earnings announcements, product launches and newsworthy events involving corporations.

That being said, 20 of the 27 companies studied here and their sponsored content exhibited at least one instance of agenda cutting or agenda building. In all likelihood, this means that not all sponsored content is created equal. Some sponsored content can cut and on rare occasions, build agendas of corporations. This is in line with most newer agenda-setting studies which show that no effect happens in one direction, each and every time (e.g., Meraz & Papacharissi, 2013; McCombs 2018; Author, 2018). It is also important to acknowledge that

although the findings identified agenda cutting as more common, the present study cannot address under what conditions agenda cutting or agenda building happens and therefore merits further research. For example, does the valence of prior news coverage predict the appearance of sponsored content? Is prior negative news coverage more likely to precede sponsored content than prior positive news coverage, or vice versa? We encourage more research to address these questions.

Of the three corporations that did exhibit an agenda building effect, Huawei (see figures 2a and 2b) is interesting, given the recent news about the company. Huawei's presence was the 7th largest of any corporation studied, larger than all but three comparable tech corporations.<sup>18</sup> Huawei ran at least 56 sponsored content articles from March 2017 to May 2019. Huawei exhibited a fairly consistent seasonal media coverage pattern during that time. However, after the U.S. announced restrictions on the sale of Huawei equipment, the coverage became more irregular with several events occurring. It happens that Huawei's divestment from sponsored content came before restrictions were first reported in December 2019. To our models, it looks like the sponsored content campaigns, which ended in May 2019, predate the rise in coverage, thus predicting it. However, it is also logical that the heavy investment in sponsored content was suppressing coverage. Little news coverage is observed during times of heavy investment. It is possible that our analysis did not detect agenda cutting simply because the agenda was *already cut* at the onset of the analysis. Future work should better assess how the sudden absence of corporate sponsored content "uncuts" or builds agendas.

Interestingly, the agenda cutting effect is actually stronger across all U.S. online media than it is inside of the very media organizations — the elite ones — that generated the sponsored

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<sup>18</sup> The top three tech companies were Oracle (n = 133), Dell (n = 78), and Amazon (n = 74).

content. Content studios have little influence outside of the news media organizations in which they reside. However, given that we have only captured *elite* sponsored content, it could signal a much broader effort. When large, *Fortune* 1000 companies employ sponsored content, they do so across the entire mediascape broadly, not just in elite media. The average sponsored content article from *NYT's* T Brand Studio costs somewhere between \$100,000 and \$150,000. The average programmatic native advertising cost for any one smaller publisher is in the \$100s.<sup>19</sup> Moreover, programmatic native advertising allows sponsored content from a content studio like *NYT's* to be cheaply amplified across all online U.S. media as “suggested content.”<sup>20</sup> Many of the sponsored content articles created by elite media also broadcast across a wide variety of smaller news publishers. The present work speaks to the power of sponsored content originating from elite media. It appears to chill the entire online U.S. media landscape. Elite media tend to dictate the coverage of non-elite media (McCombs, 2018).

The theoretical contribution of this study to agenda setting theory is twofold. Publisher “content studios” work with corporations to generate revenue. Through their publications, they create their own agendas, one that is malleable based on their clients. Content studios should be assessed for agenda setting influence. We put forward methodology that allows researchers to test for two ways in which a corporate news agenda can be altered, both via agenda building and agenda cutting. In so doing, we expand our knowledge to show that corporate actors, through content studio departments, can lead to dampened news coverage of a corporation. Further agenda setting work is needed to validate these findings.

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<sup>19</sup> For a review of *NYT* Brand Studio costs, see: <https://digiday.com/media/beyond-native-ny-times-plans-turn-t-brand-studio-full-fledged-agency/> For a review of programmatic native advertising costs: <https://www.emarketer.com/content/us-native-advertising-2019>

<sup>20</sup> To see a platform that makes this kind of advertising possible, see industry leader Taboola: <https://www.taboola.com/>

Beyond the previously mentioned limitations of this study, additional considerations require recognition. Future work should model confounding variables, such as stock market performance, lawsuits, or other business events that might have influenced the changes observed here. We recognize that the sponsored content identified in this study could also signify the launch of a broader marketing campaign. If true, other marketing variables, such as advertising spend for these companies, may also successfully predict change in news coverage across time. Furthermore, this analysis was only able to model corporate news media agendas that were salient. That is, companies that are regularly covered by many outlets. Future qualitative work will be better suited to investigate the agenda cutting effect smaller corporations exhibit with sponsored content.

Further work investigating sponsored content and its agenda cutting and building effects should take into account the valence and second-level attributes of media coverage. As we have explicated here, the aim of agenda cutting is to chill critical coverage of a corporation, while agenda building seems to boost coverage that puts forward a corporate agenda. By studying these two different outcomes, and assessing the degree to which a corporation is suffering from critical coverage and/or is not in control of its perception in the mediascape, researchers can better offer theoretical predictions as to whether sponsored content will cut or build a corporation's agenda.

Another limitation of this study is the elite nature of the sponsored content investigated. By only looking at sponsored content from the *NYT*, *WaPo* and the *WSJ*, we only investigated fairly large financial investments in sponsored content. While all sponsored content in these publications were clearly labeled, the extant literature indicates that this is not always so (Einstein, 2016; Sirrah, 2019). Unlabeled content significantly decreases the likelihood that readers can distinguish it from editorial content (Author, 2020; Wojdyski & Evans, 2016).

Future research should investigate the effects of non-elite publishers, particularly those publishers whose labels are difficult to identify, or are missing all together.

Over half of the Fortune 1000 companies invested in sponsored content. That purchase of sponsored content by a corporation can chill future news reporting about that company. While it's one thing if the company is a producer of clothes or cell phones, it becomes more concerning when the company is a producer of fossil fuels – such as Chevron or Exxon Mobil. Reduced investigative journalism in these areas can have worldwide effects on the climate or government regulation (Author, 2020; Serazio, 2019; Westervelt, 2020). Elite news media are allocating resources – including journalists – to create content that presents these clients in a favorable light. This can undermine the genuine reporting of critical journalism (Author, 2020; Cusick & Boros, 2018; Einstein, 2016; Serazio, 2019; Sirrah, 2019; Westervelt, 2020). Furthermore, as Sirrah (2019) has documented, the contractual obligation of corporations that purchase sponsored content does not end with producing and publishing the content. Publishers are also required to *promote* the content on their social media accounts. Because audiences have a finite amount of attention they can offer, a publisher that prioritizes the promotion of sponsored content over real journalism reduces the likelihood audiences will see critical news about corporations. When journalists are reluctant to write about clients “without fear or favor,” public enlightenment may suffer.

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