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Delegating Issue Importance Judgments: An Experimental Test of the Agenda Cueing Hypothesis in an Online News Aggregator

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Agenda cueing is a theorized mechanism whereby news consumers form judgments of relative social issue importance based on exposure to media coverage. Agenda cueing entails taking issue importance signals from surface features of news presentations, such as the mere frequency of the topic's coverage. This study relies on an experimental stimulus simulating an interface of a major news platform, puts this hypothesis to the test in the context of an aggregated digital newsfeed, and investigates whether cues coming from different gatekeepers produce varying agenda-setting effects. The analysis reveals that interface features presenting the newsfeed as an algorithmic selection of mainstream media content ("top stories") had a more powerful effect on individuals' perceptions of issue importance than cues attributing newsfeed's curation to other users of the news platform. The moderating role of gatekeeping trust is replicated only partially.

Keywords: agenda setting, agenda cueing, agenda reasoning, gatekeeping theory, news aggregators

Agenda cues, understood as features of news presentation that can form media users' perception of frequent news coverage of a social problem, have been shown to exert powerful agenda-setting effects in previous experimental studies (Pingree & Stoycheff, 2013; Stoycheff, Pingree, Peifer, & Sui, 2018). Such cues can take the form of, for example, a summary report detailing the amount of coverage that certain problems received over a given period, or any other evidence of news gatekeepers' heightened attention to the issue. Importantly, such cues can affect individuals' perceptions of social issues' significance even without exposure to actual news content. These findings can have significant implications not just for the agenda-setting scholarship but also for democratic public discourse writ large. In theory, the agenda-setting function of mass media is central for a system that relies on citizens' shared understanding of the most pressing problems facing society. It is believed that the news is at least capable of directing public attention to the issues of utmost importance, mustering public support for specific courses of policy action (e.g., Baumgartner & Jones, 2009). However, the reality of agenda-setting is far from an ideal rational process of prioritizing problems. On the supply side, a host of factors

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underlying formation of news agendas—economic incentives, news values such as timeliness and conflict, interests of political elites, and diverging news preferences of journalists and the public, to name a few—result in mass media prioritizing issues on grounds other than societal importance (Bennett, 1990; Boczkowski & Mitchelstein, 2015; Cook, 1998; Price & Tewksbury, 1997). On the consumer side, news users can misinterpret signals coming from the media—particularly, by taking agenda cues such as the mere frequency of coverage as indication of what issues news professionals deem important. Some scholars have argued that such miscommunication can result in some individuals forming issue agendas that are reactive and unstable (Pingree, Quenette, Tchernev, & Dickinson, 2013).

Pingree and Stoycheff (2013) put forth the agenda cueing hypothesis, which contributes to the broader agenda-setting theory by specifying one of the mechanisms that underlie the formation of the public's issue priorities. The hypothesis postulates that some news consumers tend to delegate judgments of social issues' importance to the press based on casually perceived news agendas (agenda cueing) rather than engage in a thoughtful consideration of the issues and why they are important (agenda reasoning). This model describes a two-step process whereby agenda cues that individuals encounter first influence their perceptions of what issues are prioritized in news coverage. On the second step, this perceived news agenda informs users' own importance judgments such that individuals become more likely to name the more frequently covered problems as the most important to society. Crucially, the second step of the hypothesized process is moderated by users' belief that journalists systematically prioritize problems based on their importance more than any other criteria—a simplified view of news-making practices that Pingree and Stoycheff (2013) labeled gatekeeping trust.

Building on this theoretical framework, this study seeks to advance agenda-setting theory in several ways. First, I put the agenda cueing hypothesis to the test in a context of an online news aggregator, which is different from previous studies that explored the influence of generic mainstream media coverage (Pingree & Stoycheff, 2013) or the frequency of Twitter posts (Stoycheff et al., 2018), delivered to respondents as experimentally manipulated news/Twitter summary reports. In contrast, I use a novel, newsfeed screenshot–based stimulus that allows users to take up agenda cues from a simulation of the coverage itself. Second, informed by the idea that in today's digital media environments there exist other gatekeepers than just media professionals, I manipulate the source of agenda cues (mainstream media and news platform vs. other users) to test whether the agenda-setting effects differ between these two conditions.

The results suggest that users do pick up agenda cues from news aggregator feeds and that the source of perceived problem prioritizations does make a difference. Across two experimental tests, users were more susceptible to agenda cues coming from the feed representing the agenda shaped by mainstream media and a news-aggregating platform ("top stories") compared with the one presented as user-curated. In one of the tests but not another, gatekeeping trust emerged as a significant moderator, such that respondents who reported higher levels of gatekeeping trust were significantly more likely to perceive issues emphasized in agenda cues by mainstream media as important compared with their low-gatekeeping trust peers. In the second test that relied on a weaker operationalization of agenda cue, there was no significant overall effect of emphasizing a problem in the newsfeed.

Agenda Cueing as a Dual-Process Model

Early stages of agenda-setting research were marked by a presumption, grounded in psychological theories of knowledge activation (e.g., Higgins, 1996), that agenda-setting effects are driven by cognitive accessibility, that is, exposure to problems' media coverage makes them more easily retrievable from the top of one's mind (Iyengar, 1990; Price & Tewksbury, 1997). As some scholars called for increasing the explanatory capacity of agenda-setting theory (Kosicki, 1993), the role of accessibility as a key causal ingredient of agenda-setting effects came into question when evidence emerged that such effects are moderated by media trust (Tsfati, 2003). Furthermore, the findings of a study where cognitive accessibility of relevant objects was actually measured did not support the expectation that it mediates agenda-setting effects (Miller, 2007).

Eventually, the agenda-setting scholarship largely departed from viewing cognitive accessibility as the main driving force behind the formation of citizens' issue priority judgments. Most of the recent theoretical developments in the field are grounded in the notion that the nature of the process is dual, following the distinction initially laid out by Petty and Cacioppo (1986) in their elaboration likelihood model (ELM) of persuasion. In the field of agenda-setting research, Takeshita (2006) was among the first to argue that people's responses to the most important issue question can be driven by distinct processes: either cognitive accessibility or a systematically reasoned opinion that a certain issue is socially important. A dual-process model of agenda setting developed by Bulkow, Urban, and Schweiger (2013) abandons the cognitive accessibility mechanism altogether and instead centers on individuals' personal involvement with the issue.

Based on these theoretical advancements, Pingree and Stoycheff (2013) have developed a dual-process agenda-setting model where the systematic process is labeled *agenda reasoning* and the heuristic process is labeled *agenda cueing*. Agenda reasoning represents a cognitively effortful, central-route process whereby individuals get exposed to the actual content of media coverage and discover substantive reasons for why a certain issue is societally important. On the peripheral side, agenda cueing, similar to the models that feature accessibility heuristic, is grounded in the notion that the answer to the most important problem (MIP) survey question is constructed at the moment of giving a response. The crucial difference from the accessibility-based processes here is that rather than simply resorting to whatever issue comes to mind first, respondents use what they recall to be on the news agenda as a substitute for their own issue importance judgments. This route does not presume active engagement with news content: Individuals can pick up agenda cues from superficial characteristics of news coverage such as frequency of headlines referencing certain topics, which can be inferred from simply scrolling through the newsfeed.

Stoycheff and colleagues (2018) extended this line of reasoning into the realm of social media. They tested the effects of perceived social media agenda, cued using a Twitter summary report, alongside the effects of the news media agenda. The researchers found evidence that telling respondents an issue is frequently discussed on Twitter increases their likelihood to name it as important, even though the effect is smaller compared with a similar cue attributed to news media. The existence of these effects and the difference in their magnitude suggests that news users' issue importance judgments are malleable to agenda cues coming from various gatekeepers, and that the perceived agency behind the cues does matter. This

warrants further experimental exploration of agenda cueing effects in digital multisource media environments, where news platforms' interface features allow for cueing diverse logics of content prioritization and presentation.

The Role of Interface Cues

Scholars of computer-mediated communication have long pointed out that certain features of website interfaces that accompany online messages can affect users' expectations and perceptions of the content of these messages (Bellur & Sundar, 2014; Sundar, 2008; Sundar, Shyam, Waddell, & Huang, 2015). One example is the interface cues that convey other people's collective behaviors toward or perceptions of media content: comments, views, likes, upvotes, and downvotes that refer to certain headlines or posts. Sundar and Nass (2001) labeled this type of interface features, arguably the most dominant in online news environments, bandwagon cues.

Past research suggests that bandwagon cues present in digital interfaces exert powerful effects on both attitudinal and behavioral outcomes, such as message persuasiveness, purchase intention, click likelihood, and selective exposure to the endorsed content (Knobloch-Westerwick, Sharma, Hansen, & Alter, 2005; Messing & Westwood, 2014; Sundar, 2008; Sundar, Oeldorf-Hirsch, & Xu, 2008; Xu, 2013; Yang, 2016). I argue that, by a similar logic, interface cues can contribute to creating a perception that online gatekeepers—either news media or other users—regard certain problems as more important than others. For example, if articles on the topic are consistently featured on top of the "most viewed" sidebar, it is reasonable to expect that individuals can take it as an indicator of other users thinking of the problem as urgent.

In the context of agenda cueing model, it does matter whose exactly is the perceived agenda that respondents rely on as they think of their own issue prioritization. The evidence of the moderating role of gatekeeping trust indirectly suggests that individuals who are prone to take up agenda cues are aware of where these cues come from. Based on the theoretical advancements in computer-mediated communication literature, one can reasonably expect that respective website interface features will allow users to differentiate between various entities behind the newsfeed's curation and update their issue importance judgments according to the level of gatekeeping trust attributed to each of these actors. To test this expectation, in this study, agenda cues presented in a news portal feed were attributed to either news media/news platforms or peer users.

Furthermore, given almost limitless opportunities for website designers to create features that convey any kind of additional information about the content present in the feed, it is possible to envision an interface element explicitly indicating that certain news stories were selected on the grounds of their perceived importance. Indeed, news portals often include areas designated for featured stories, marked as "trending" or "most popular." A feasible version of this affordance could be the one presenting some stories as specifically recommended as important, that is, highlighting that the selection of news items is the result of someone's conscious prioritization. If such a feature proves to be more effective in influencing individuals' problem importance perceptions than a nonspecific agenda cue, there might be room for strategically designing news website interfaces to facilitate news consumers forming more robust and reasoned issue agendas. This effect would be achieved by members of the public following explicit agenda cues originating

from other news media consumers who are willing to make and share circumspect issue importance judgments. The present study tests the effect of an interface cue that explicitly points to the fact that the articles are prioritized based on importance.

In the view of the expected effects of using various interface cues to convey specific gatekeeper identities and logics of content prioritization, I articulate the following three-prong research question:

RQ1: Do agenda cues attributed to (a) news media; (b) other users, in the form of a popularity indicator; (c) other users, in the form of importance-based recommendation, differ in their effects on perceived importance of the emphasized issue compared to deemphasized issue?

Key Moderators: Gatekeeping and Social Gatekeeping Trust

The agenda cueing hypothesis has roots in previous work that found evidence for the moderating role of media trust in agenda-setting processes (Miller & Krosnick, 2000; Tsfati, 2003), which maintains that the more individuals trust the media, the more likely they are to accept their agenda as a reflection of the issues important to the nation. Pingree and Stoycheff (2013) put to test an intuition that it is not the generic media trust that underlies this relationship, but rather a more specialized set of beliefs, which they labeled as gatekeeping trust. This construct captures the extent to which media consumers believe that news organizations tend to prioritize the issues that are important to the society in their coverage, and that these prioritizations reflect news professionals' importance-based judgments rather than more pragmatic considerations. This construct, however, is different from general media trust: It is possible to view mass media positively while being skeptical of their ability to always prioritize the most important issues of the day. In Pingree and Stoycheff's (2013) experiment, the measure of gatekeeping trust was validated as distinct because it moderated agenda cueing effects, whereas general media trust did not.

In today's digital media environments, news professionals are not the only actors to exercise gatekeeping power. Aggregated newsfeeds where a significant portion of the digital audience encounters media content are also curated by members of their social networks, users who comment and "like" articles on news websites, and recommendation algorithms (Thorson & Wells, 2016). If users of online news are susceptible to these "bandwagon" agenda cues, their effects should be moderated by the belief that the source of the cue has done the requisite cognitive work. Following this logic, Stoycheff and colleagues (2018) introduced the concept of social media gatekeeping trust in a study that examined the effects of both media agenda and user agenda (inferred from Twitter) on respondents' perceptions of relative issue importance.

In this study, I use a modified version of social gatekeeping trust that taps into the respondents' perception of the "wisdom of the crowd" as the source of the cue. It is also not confined to a single platform or social media at large; instead, it relates to all users of online news as a gatekeeping authority.

Based on previous findings of the role of distinct variations of gatekeeping trust, I articulate the following expectations:

H1: *Agenda cues attributed to news media/news aggregators produce a greater increase in perceived importance of the cued issue among individuals with high gatekeeping trust compared with those with low gatekeeping trust.*

H2: *Agenda cues attributed to other users produce a greater increase in perceived importance of the cued issue among individuals with high social gatekeeping trust compared with those with low social gatekeeping trust.*

Methods

The study was designed as a between-subjects experiment with a pretest and posttest. In the pretest, participants responded to a battery of demographic questions and series of items measuring the two versions of gatekeeping trust (general and social) and general media trust. Respondents were then randomly assigned to see one of the three labels on top of their newsfeeds: "top stories," "most viewed," and "recommended." Next, participants were exposed to two consecutive sets of stimuli that used different variations of agenda cues.

In the first sequence, participants saw three static screenshots of a general Google News feed each containing eight real news headlines. Out of the total of 24 headlines, the issue of either abortion or drug abuse was cued by featuring an increased number of headlines (six) on the emphasized issue in the newsfeed while filtering out all coverage of the deemphasized issue. On top of each newsfeed screenshot, respondents saw a prompt that read: "Screenshot of Google News from [date]. Please click on headlines to mark which stories you would have chosen to read. You can choose up to 5 headlines." The task was designed both to obscure the main goal of estimating agenda-setting effects and as a means of focusing users' attention on the newsfeed content.

In the second sequence, respondents were exposed to three screenshots of a newsfeed that was purported to represent the technology section of Google News. Two issues, artificial intelligence regulation and cybersecurity, were cued alternatively in this set of stimulus screenshots. Here, the operationalization of the agenda cue followed a different logic from the first sequence: Both issues were present in the stimulus screenshots, yet headlines on the emphasized issue were consistently shown on top of the feed (spots 1–4), whereas stories on the deemphasized issue occupied spots closer to its bottom (spots 5–8). In all other respects, the second sequence was identical to the first one. Examples of newsfeed screenshots used in both sequences can be found in the Appendix.

Following the exposure, participants answered two open-ended MIP questions, each corresponding to a respective stimulus set (general issues facing the nation and technology-related most important issues). Stimuli assignment workflow is visualized in Figure 1.

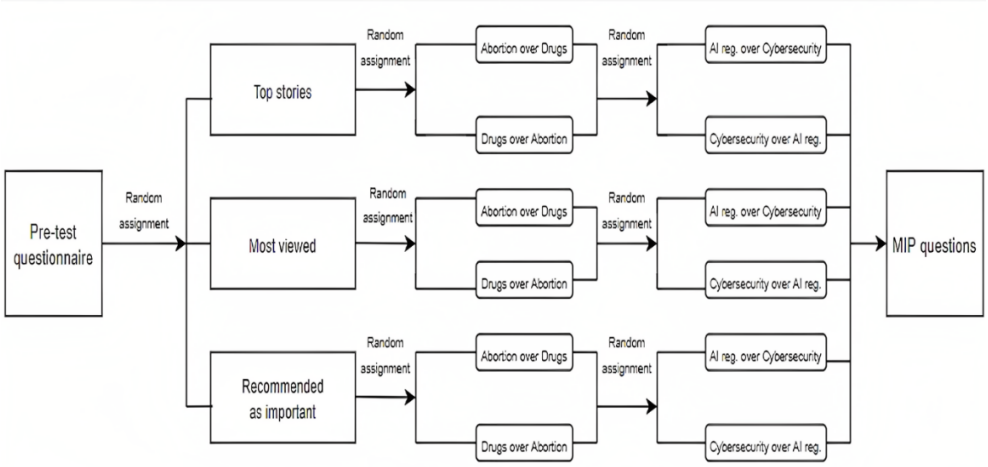

Figure 1. Stimuli presentation workflow.

As visible in the graph, for each respondent, the newsfeed label was consistent throughout both stimulus sets; that is, if a participant was exposed to the "most viewed" general newsfeed, their technology newsfeed was also "most viewed." In each sequence, the assignment of emphasized/deemphasized topics was random and independent of the other sequence. Therefore, the procedure essentially yielded two discrete between-subjects experiments, each described by the following design statement: 3 (Source of agenda cue: "top stories"/"most viewed"/"recommended") × 2 (Issue cued: Abortion/drugs or AI regulation/cybersecurity). To expedite presentation of the results, these two experiments will henceforth be referred to as Study 1 and Study 2.

Stimuli

Advancement of agenda cueing theory requires more externally valid tests of the actual forms that real-life cues can take. It is imperative to demonstrate that agenda cue uptake occurs in a situation of users' exposure to a realistic news environment, while minimizing exposure to agenda reasons. The present study seeks to complement the existing theory with empirical evidence generated from a test that combines a realistic experimental stimulus with users' minimal exposure to substantive coverage of issues.

This study was designed to improve on external validity of past agenda cueing investigations by using an experimental stimulus that consisted of a series of static screenshots simulating an aggregated newsfeed. Because it resembled a snapshot of a real-life newsfeed with story headlines, source titles, and attendant presentation cues, such stimulus could convey the frequency of problems' coverage, the agency behind the feed's curation, as well as the logic of headlines' selection. At the same time, the headlines were not clickable, and they did not allow respondents to proceed to read the actual articles and learn agenda reasons that they likely contained.

Stimulus screenshots were designed to closely resemble the newsfeed of Google News, one of the most trafficked news aggregators globally. The logo on top of every page, the general interface layout, major interface elements, and fonts were identical to those used by Google News at the time of the experiment.

A label on top of each newsfeed read either "top stories," "most viewed" or "recommended," consistent between all screenshots that a respondent received. These interface features were designed to attribute curation of the newsfeed to particular gatekeepers and highlight the logic of story prioritization, thus isolating their effects from those of the newsfeed content.

In the "top stories" label condition, the gatekeeping authority was ascribed to a combination of the Google News ranking algorithm and the aggregated prioritizations of mainstream media organizations. Google is a dominant player in online information search market, and several recent computational studies showed that the top stories algorithm heavily favors news content produced by a limited number of mainstream publications (Kawakami, Umarova, & Mustafaraj, 2020; Lurie & Mustafaraj, 2019). The top stories section can thus be viewed as a reliable representation of what the mainstream media are talking about generally—a news agenda validated by the platform's algorithmic selection. The other two conditions were designed to represent two different versions of the news portal users' aggregated judgments. The "most viewed" label merely signified users' heightened interest to the stories featured, and the "recommended" label was supposed to convey users' conscious effort to prioritize the coverage of MIPs. To further clarify this mechanism, this label came with an explanatory note underneath it, which read, "Recommended by portal users as important."

Each news item was represented by a headline, thumbnail illustration, and source label. The articles were recent news items covering various topics, all of them drawn from Google News' top stories section, regardless of the label ascribed to them in the experiment.

The stimulus in Study 1 was designed to test the combined effects of what Stoycheff and colleagues (2018) refer to as cue presence—whether or not the issue was covered in the news at all—and cue prominence, or the salience of the problem's coverage. For example, in the Abortion condition, three newsfeed screenshots contained six abortion-related headlines between them, which occupied spots in the upper half of the feed, and no headlines related to drug-related problems. Conversely, in the Drugs condition, the same top spots were occupied by headlines of stories on topics such as drug abuse and the government's response to the opioid epidemic, with no stories on abortion present in the feed. Study 2 was designed to test the effects of an agenda cue delivered by differential ranking of problems' coverage in the newsfeed. Although headlines related to both issues were present in each of the technology newsfeed screenshots, stories covering the emphasized issue always occupied spots in the top half of the feed, and stories on the deemphasized issue were in the bottom half.

Sample

To address the questions at the center of this study, I employed a sample (initial N = 1026) of U.S.-based respondents, recruited through Amazon Mechanical Turk (MTurk) crowdsourcing platform. Respondents were paid $1 for participating in the study. MTurk has become a common venue for social scientists to recruit study participants because it is relatively affordable, offers greater demographic diversity compared with college undergraduate samples, and outperforms many other Internet-based recruitment tools on this measure (Buhrmester, Kwang, & Gosling, 2011). With the rise of online recruitment tools and particularly widespread adoption of MTurk, some scholars voiced concerns regarding the quality of the data thus obtained, citing participants' possible lack of attention and diminished trust in online experimental

stimuli. However, an empirical investigation of the MTurk-sourced data showed that the levels of attention that respondents on the platform exhibit are comparable with that of other popular commercial samples, and the levels of trust that they report are similar to participants' in laboratory experiments (Thomas & Clifford, 2017). The main characteristics of the sample are summarized in Table 1.

Table 1. Sample Demographics.

Age (median)	33
Male	57%
Democrats	48%
College degree	56%
Caucasian	76%

After dismissing cases with excessively patterned responses and those who did not provide a meaningful answer to both open-ended questions measuring the focal outcome, I arrived at my final $N = 785$. Treating the MIP nonrespondents as dropouts, I conducted attrition analyses by estimating a logistic regression model to test whether any of the key demographic characteristics, experimental treatments, or interactions between these two types of predictors were associated with a greater chance of failing to provide a meaningful MIP response. The analysis revealed that none of these factors or their interactions predicted dropout.

Measures

Dependent Variable: Perceived Issue Importance

The main outcome of interest—perceived importance of focal issues—was measured using an open-ended question borrowed from Stoycheff and colleagues (2018): "What do you think are the most important problems facing the nation? Please list them in order of importance, starting with the most important problem" (p. 12).

Each participant's problem importance scores for abortion and drugs were calculated by dividing the problem's inverse position on the respondent's MIP list by the total number of issues that they mentioned. As a result, regardless of the total number of issues named, the problem listed first would always receive the importance score of 1; if a respondent did not mention the issue at all, its importance score is 0; if a problem was mentioned halfway through the list of several problems, it is coded as 0.50. For instance, if "drugs" was last in a list of three problems, its importance score would be 0.33; if "opioid crisis" was listed last in a list of five problems, drugs would receive a score of 0.20. Two trained coders recoded open-ended MIP responses into standardized rank-ordered problem lists, from which they generated importance scores for the four focal issues. Reliability was acceptable on all four items, with Krippendorf's alpha ranging from 0.72 to 0.91.

Gatekeeping trust (Cronbach's $\alpha = 0.89$, $M = 4.45$, $SD = 1.38$) was adapted from Pingree and Stoycheff (2013) and included items like "News outlets choose which stories to cover by carefully deciding which issues or problems are the most important in society," measured on a 1–7 Likert-type scale. Social gatekeeping trust (Cronbach's $\alpha = 0.84$, $M = 4.76$, $SD = 1.24$) followed a similar logic that Stoycheff and colleagues (2018) used in adapting the original gatekeeping trust measure to the context of social media. However, in contrast with their social media gatekeeping trust construct, social gatekeeping trust measured in this study is not limited to

users of platforms such as Twitter or Facebook but rather is intended to tap into the perceptions of the gatekeeping capacity of online news users at large (e.g., "You can trust that when there is a problem in society that is really urgent and important, people will pay a great deal of attention to it online"). As in previous agenda cueing studies, I also included a measure of general media trust (Cronbach's α = 0.95, *M* = 4.11, *SD* = 1.62) to test whether the effects of gatekeeping trust are distinct from those of the general construct capturing individuals' trust in mainstream media.

Results

Study 1

I begin with describing the data on the main outcome of interest: perception of the importance of the experimental issues. Mean values and standard deviations are summarized in Table 2. Respondents perceived abortion as a somewhat more important problem than drugs when averaging across all experimental conditions. More importantly, when the scores were recoded to reflect the perceived importance of the issue emphasized or deemphasized by the treatment for a particular respondent, the difference between mean importance scores of the emphasized and deemphasized issues was in the expected direction and significant using a paired-samples *t*-test, t (784) = 3.95, $p < 0.001$.

Table 2. Descriptive Statistics of Outcome Variables in Study 1.

Variables	
Importance of abortion	0.052 (0.191)
Importance of drugs	0.039 (0.162)
Importance of the emphasized issue	0.065 (0.212)
Importance of the deemphasized issue	0.025 (0.132)

Note. All variables are means with standard deviations in parentheses.

This preliminary analysis suggests that the experimental treatment in Study 1 succeeded in eliciting higher perceived importance of the problems emphasized in the main portal newsfeed. Overall, the treatment has had an effect only on a modest share of participants. Only 10.8% of users mentioned their emphasized issue when responding to the most important problem question, compared with 4.6% who mentioned their deemphasized issue.

Testing Differential Effects of Cues

To address RQ1, H1, and H2, I estimated an ANCOVA model with all experimental factors entered as main effects, cue source factor's interactions with hypothesized moderators (gatekeeping trust and social gatekeeping trust, both dichotomized), general media trust as a covariate, and the agenda-setting effect (difference between importance scores of the emphasized and deemphasized issues) as an outcome variable. The initial model yielded a one-way significant main effect for source of agenda cue, F (2, 773) = 2.97, one-tailed $p = 0.026$, partial $\eta^2 = 0.008$, such that participants in the "top stories" condition reported higher agenda-setting effect scores ($M = 0.072$, $SE = 0.015$) than their peers in both user-sourced conditions, "most viewed" ($M = 0.028$, $SE = 0.016$) and "recommended" ($M = 0.026$; $SE = 0.016$). Because the mean outcomes for both user cue conditions were nearly identical, and because there was no difference between these two cue types

across levels of gatekeeping trust and social gatekeeping trust, I collapsed them to produce a two-level cue source factor ("top stories"/user-sourced), which I used in all subsequent statistical analyses.

A similar ANCOVA model specified to include a two-level cue source variable yielded a significant main effect for that factor, F (1, 776) = 5.92, p = 0.015, partial η^2 = 0.008, such that respondents in the news agenda ("op stories") cue condition reported significantly higher importance scores (M = 0.072, SE = 0.015) than did respondents in the combined user-sourced cue condition (M = 0.027, SE = 0.011). Answering RQ1, the analysis revealed that the agenda-setting effect produced by newsfeeds whose curation is attributed to mainstream media and a news-aggregating platform was greater than by those labeled as user-curated.

Controlling for general media trust, an interaction between the cue source factor and dichotomized measure of gatekeeping trust was significant, F (1, 776) = 2.76, one-tailed p = 0.048, partial η^2 = 0.004. Post hoc Bonferroni comparisons revealed that inside this interaction, one group was significantly different from all others: users in the news cue condition who are high in gatekeeping trust. Whereas agenda-setting scores reported by participants in the user-sourced cue condition who were both low (M = 0.019, SE = 0.016) and high in gatekeeping trust (M = 0.034, SE = 0.020), as well as by participants in the news cue condition who were low in gatekeeping trust (M = 0.030, SE = 0.021) were statistically indistinguishable from each other, users who were exposed to the "top stories" news feed and scored high in gatekeeping trust were significantly more likely than any other group to name the emphasized issue as important (M = 0.114, SE = 0.024). These differences are visualized in Figure 2. Hypothesis 1 was thus confirmed in the context of Study 1.

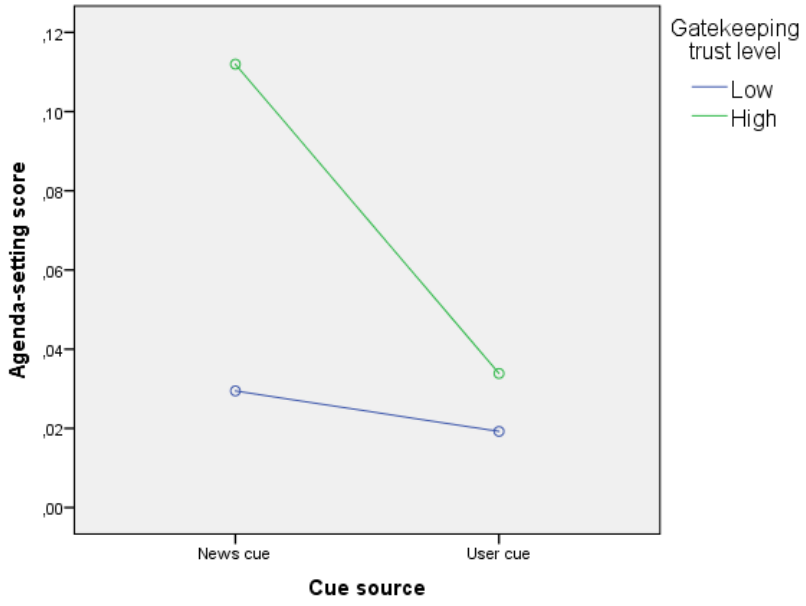

Figure 2. Interaction between cue source and gatekeeping trust on agenda-setting effect in Study 1.

The data did not support the expectation in Hypothesis 2 that social gatekeeping trust moderates the agenda cueing effects for users in user-sourced cue condition, because the interaction between cue source and dichotomized social gatekeeping trust was not significant, F (1, 776) = 0.332, p = 0.56, partial η^2 = 0.000.

Study 1 supplied evidence supporting the notion that increasing the amount and salience of the coverage dedicated to an issue in an aggregated newsfeed leads to a corresponding increase in perception of this issue's social importance shortly after exposure. However, this effect appeared to be confined to a limited share of respondents. News agenda conveyed via a Google News–powered selection of top stories exerted a significantly stronger agenda-setting effect than the agenda of a newsfeed presented as user-curated. As predicted by theory, a small interaction effect between cue source and a dichotomized measure of gatekeeping trust was detected, indicating that users high in gatekeeping trust are somewhat more susceptible to the cues offered by the news media/news platform agenda. At the same time, no similar moderating effect of social gatekeeping trust on the effects of bandwagon agenda cues was revealed.

Study 2

A look at the distribution of perceived importance scores of technology-related issues presents a different picture. For Study 2, the average importance scores of both emphasized (M = 0.264, SD = 0.411) and deemphasized issues (M = 0.248; SD = 0.396) is much greater than in Study 1 (Table 3).

Table 3. Descriptive Statistics of Outcome Variables in Study 2.

Variables	
Importance of AI regulation	0.186 (0.356)
Importance of cybersecurity	0.327 (0.437)
Importance of the emphasized issue	0.264 (0.411)
Importance of the deemphasized issue	0.248 (0.396)

Note. All variables are means with standard deviations in parentheses.

Although the difference between these two scores is in the expected direction, a paired-samples t-test suggests their means are statistically indistinguishable, t (787) = 0.72, p > 0.05, indicating that manipulation of relative ranking of the two problems' coverage in the newsfeed did not result in a statistically significant agenda-setting effect when averaged across all cue source conditions. At the same time, availability of both issues in the news portal, perhaps coupled with lack of coverage of other societally important problems related to technology, resulted in a much higher rate of recall of both experimental problems by respondents: when listing the most important technology issues, almost 32% of participants mentioned the emphasized problem, whereas the deemphasized problem was mentioned by just more than 31% of participants.

Testing Differential Effects of Cues

I then estimated an ANCOVA model similar to the one in Study 1, with an agenda-setting measure based on technology-specific MIP responses as an outcome variable. A nonexperimental effect was revealed for

the type of emphasized technology issue, such that in the AI regulation condition, the average importance score (M = −0.115, SE = 0.030) of the highlighted problem was significantly smaller than in the cybersecurity condition (M = 0.170, SE = 0.30). The negative sign before the first group's mean indicates that even when stories related to AI regulation were ranked higher in the newsfeed than stories on cybersecurity issues, study participants still reported higher average importance scores of the latter problem. The analysis yielded a significant main effect of the cue source, F (1, 774) = 4.41, p = 0.036, partial η^2 = 0.006. Answering RQ1, the difference in the importance scores of the emphasized and deemphasized issues for respondents in the news cue condition (M = 0.074, SE = 0.035) was considerably greater compared with the same difference reported by their peers in the user-sourced cue condition (M = −0.019, SE = 0.027). Thus, it appears that the absence of the aggregated agenda cueing effect of the portal newsfeed in Study 2 can be seen as a manifestation of the differential effect that the experimental manipulation had on respondents in the news-sourced and user-sourced conditions. Although the agenda-setting effect on those exposed to the "top stories" newsfeed was detected, respondents who saw the "most viewed" and "recommended" newsfeeds reported marginally higher importance scores for the deemphasized issue. Because there was no overall agenda-setting effect of the portal exposure in Study 2, Hypotheses 1 and 2 were not tested.

In Study 2, the treatment based on the differential ranking of headlines related to the emphasized and deemphasized issues fell short of achieving the intended agenda-setting effect across all cue source conditions. Rather than providing evidence that differential ranking does not have an influence on user perception of problem importance generally, the weakness of the effect can be explained by the insufficient strength of this particular design of the experimental manipulation. The stimulus was likely unsuccessful in giving a significant share of respondents the impression that the newsfeed was hierarchically organized and that the higher position on the list of headlines corresponded with the higher priority that the gatekeeper had assigned to a particular article. News items in the real Google News feed are ordered chronologically and thematically, and the order of headlines does not presume that those coming first are given more weight by the algorithm, news professionals, or users. At the same time, the presence of the theorized effect among the respondents assigned to the "top stories" condition suggests that the expectation of eliciting it was not completely unrealistic.

Discussion

This study set out to test the agenda cueing hypothesis in the context of a news-aggregating portal while using a screenshot-based experimental treatment enhancing the external validity of the test compared with previous investigations. In Study 1, the data supported my expectation that when the agenda cue is present in the portal newsfeed, users' perceived importance of the cued problem increases. In Study 2, which relied on a different operationalization of the agenda cueing mechanism, the expected effect manifested itself only in one of the cue source conditions ("top stories") but not across all respondents. Although the latter discrepancy is likely an artifact of the Study 2 stimulus design, the presence of some form of the agenda cueing effect in both operationalizations suggests that exposure to aggregated digital newsfeeds can affect individuals' judgments of social issue importance even when they do not consume the news content itself. These results extend the findings from the previous work that established similar effects for news media at large (Pingree & Stoycheff, 2013; Stoycheff et al., 2018) and for Twitter users (Stoycheff et al., 2018).

The central research question of this study was informed by the expectation that users' perceptions of different gatekeepers behind the newsfeed's curation can exert varying agenda-setting effects. The experiment pitted the mainstream news media, whose aggregated agenda prioritizations were represented in the news portal's top stories selection, against portal users as the source of agenda cues. The analysis supported the hypothesized differential effects of cues coming from different curatorial actors, lending further credence to the idea that the process of agenda cueing entails conscious delegation of problem importance judgments to an authoritative gatekeeper. Answering RQ1, in both studies, the "top stories" label induced greater perceived importance of the emphasized issue compared with the labels that ascribed curation of the newsfeed to other users of the portal.

The finding in Study 1 that the increase in the agenda-setting efficiency of the news agenda cue is primarily driven by users high in gatekeeping trust can also be viewed as evidence in support of the agenda cueing hypothesis, which predicts that this effect is concentrated among those who trust news media to prioritize the most important issues of the day in their coverage. At the same time, similarly to Stoycheff and colleagues (2018), a measure designed to capture users' propensity to rely on other users' collective judgments of issue importance did not moderate the agenda cueing effect.

My conclusion that mainstream news media has been the most influential gatekeeper in the context of a news portal feed rests on the assumption that users treated Google News' top stories section as a reliable representation of what the news talked about. Google News is a news-aggregating service provided by a single most dominant player in the information search industry. As such, it is the entity whose logo is arguably the most suitable to be put on top of an experimental newsfeed that attempts to represent the aggregate mainstream news agenda online. Still, there remains a possibility that some of the resulting agenda-setting effect could be explained by the attitudes that users have toward the delivery platform rather than news publishers. Future studies could further advance the theory by incorporating tests to discern the effects of user trust to either mainstream media or the news delivery platforms' sponsors (Flanagin & Metzger, 2007; Westerwick, 2013).

The effects produced by the two variations of the user-sourced agenda cue were not different from one another, but they were significantly smaller than the agenda-setting effect of the media-sourced cue. One possible explanation for this is, again, contextual: users may have not perceived Google News as a platform from where collective behaviors and attitudes of Internet users at large could be gauged, even when "bandwagon" interface cues are present. Future research should continue investigating the comparative effects of agenda cues coming from various gatekeepers with due consideration of the digital platforms' contextual features.

Gatekeeping trust emerged as a significant moderator in the agenda cueing process, supporting Hypothesis 2 in Study 1. Respondents who reported higher levels of the belief that news media prioritize the issues most important to society were more susceptible to the news agenda cue, even when controlling for general media trust. This finding further supports the notion that media literacy interventions aimed at reducing citizens' level of gatekeeping trust are needed to mitigate some individuals' propensity to uncritically accept media agenda as a reliable representation of the most important social issues (Pingree et

al., 2013). As the present study illustrates, this logic remains valid even as the bulk of news consumption migrates to multisource, digital news environments.

No similar effect was observed in the tests of the role of social gatekeeping trust in the agenda-setting process driven by user-sourced cues. However, this is not a definitive rebuttal of the expectation articulated in H2. The reason why there was no moderation of agenda cueing from portal users by social gatekeeping trust is not that the construct itself is irrelevant; rather, it is because there was no separate socially driven agenda cueing process to moderate. Social gatekeeping trust is still potentially relevant and should be tested in the context of appropriate newsfeeds, such as Reddit-style news websites with explicit user content ranking affordances or social-first information spaces like Twitter.

The absence of a proper manipulation check is a major limitation of the design of this study. The conclusion of the presence of the agenda-setting effect rests on the observed significant difference between respondents' importance scores of the emphasized and deemphasized issues, which in Study 1 is roughly 10% and 5%, respectively. The low rate of the focal issues' recall is unsurprising given the relative subtlety of the experimental manipulation, as well as the fact that the outcome variable was measured using an open-ended question. Although prominent in the public discourse at the time of the study, abortion and drugs were not among the top 10 issues that Americans mentioned as the most important in a Gallup poll (Gallup, n.d.). A different picture emerged in Study 2. Availability of both focal technology-related issues in the news portal simultaneously, compounded by the lack of coverage of other societally important problems related to technology, resulted in a much higher rate of recall of both experimental problems by respondents when listing the most important issues related to technology (around 31% for both). This was likely due to a much narrower set of tech-related problems available to respondents compared with a wide variety of "generic" problems. Future studies of agenda cueing in online news environments should incorporate robust manipulation checks to be able to definitively conclude that the observed outcomes are produced by agenda cues offered to respondents.

Overall, the findings validate the agenda cueing hypothesis in the novel context of news-aggregating platforms. They also suggest that at least some individuals are perceptive to variation in the source of agenda cues, indicating a promising research avenue: investigation of various gatekeepers' relative effectiveness in setting public agenda.

The existence of agenda cueing effects in online news environments holds significant implications for democracy. With incidental news consumption becoming increasingly prevalent among users across the globe, the role of superficial, heuristic processing is also rising (Boczkowski, Mitchelstein, & Matassi, 2018; Lewandowsky et al., 2020; Newman, Fletcher, Schulz, Andi, Robertson, & Neilsen, 2021). Online news consumers' judgments of the relative importance of social problems can thus be driven by such "casual" news consumption, making people's socially and politically consequential attitudes malleable to the various online gatekeepers' prioritizations. This warrants the need for policies and that would both incentivize the architects of online newsfeeds to embrace their social responsibility and educate news consumers on the processes of news production and distribution in high-choice media environments.

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Appendix

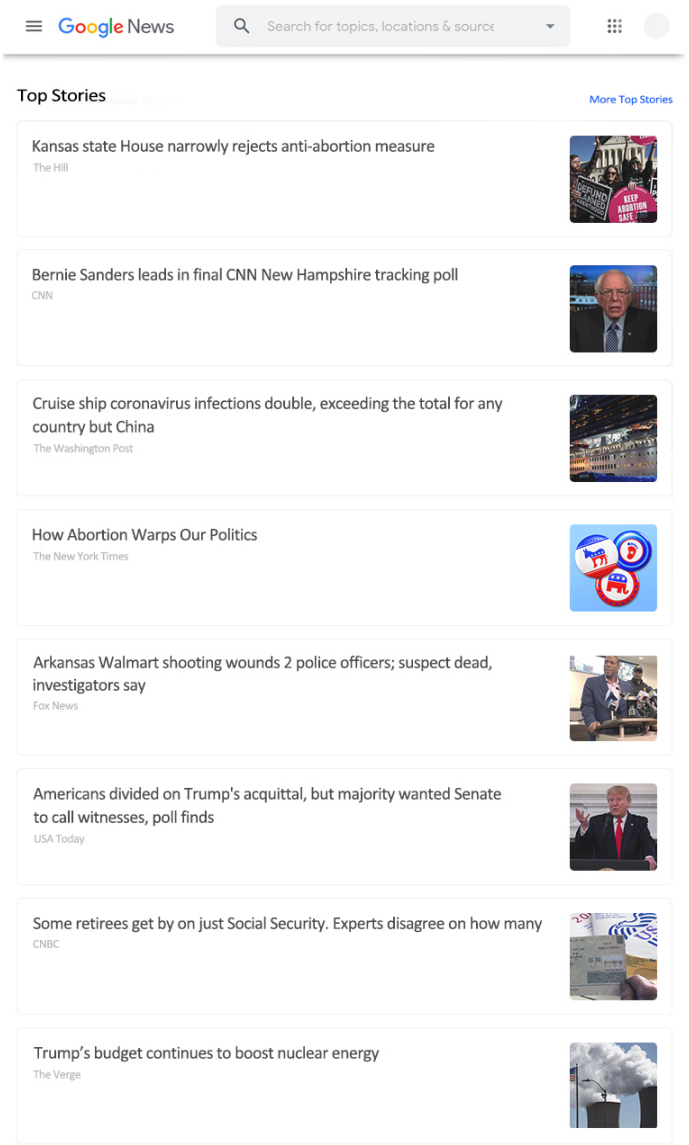

Figure 1. Stimulus material: Newsfeed screenshot 1 out of 3 in Study 1, abortion emphasized over drugs, "top stories" agenda cue.

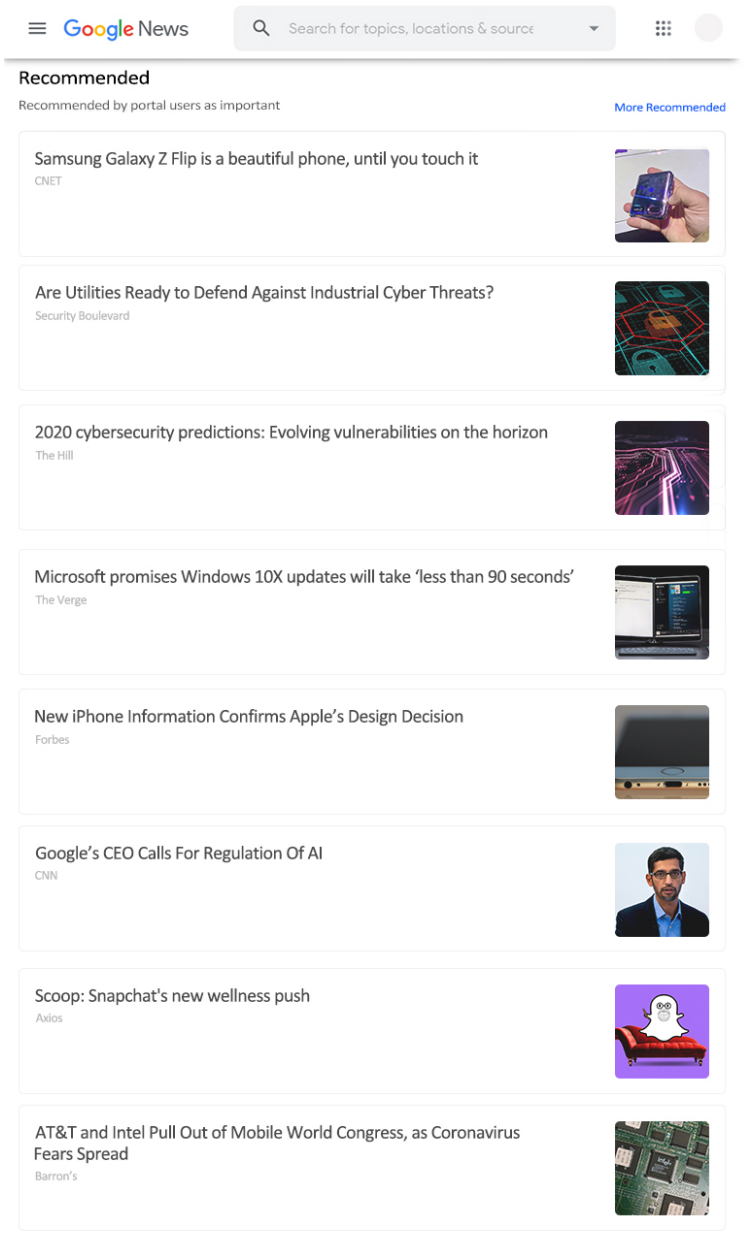

Figure 2. Stimulus material: Newsfeed screenshot 1 out of 3 in Study 2, cybersecurity emphasized over AI regulation, "recommended" agenda cue.