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# Crafting Our Own Biased Media Diets: The Effects of Confirmation, Source, and Negativity Bias on Selective Attendance to Online News

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## ABSTRACT

Audiences' online information acquisition has raised questions about the nature of selective exposure in today's high-choice and fragmented news environment. To offer an overview of the *relative* contribution of several key drivers of selective exposure to political news, we assess the guiding influence of (1) confirmation bias, (2) source bias, and (3) negativity bias. The findings of an experiment in two countries (UK and US,  $N = 858$ ), demonstrate that confirmation bias has the most profound effect on selective exposure into news on immigration and the privatization of health-care systems, in conjunction with comparable and significant effects of source and negativity biases. The studied moderating role of preexisting levels of involvement and skepticism provides additional insights into news selection mechanisms. We conclude that today's online media diets are guided by different biases, which may fragment audiences based on their news preferences *and* issue positions.

The Internet's evolution into a major news source has revolutionized access to information. Audiences nowadays have arguably more options to be exposed to political news and participate in public affairs than ever before (Gil de Zúñiga et al., 2017). The ubiquity of news offers audiences the opportunity to actively personalize and shape their individual information environments (Choi et al., 2009). As a result of this notion of selectivity online, the question of what political information audiences choose to attend or avoid, among a wide-ranging news assortment, has been of central interest to communication research.

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The abundance of online media choices may offer a more diverse information environment; however, scholars have argued that this high-choice media environment may instead result in biased exposure on the individual level. Political media coverage, particularly from partisan sources, has been accused of being biased (e.g., Knobloch-Westerwick et al., 2020). Yet, not just the supply side of news, but also the demand side can be a source of information bias (e.g., Trussler & Soroka, 2014). Specifically, in their selective exposure to and avoidance of specific political content, people can create their own biased (online) news environment (Knobloch-Westerwick & Meng, 2009). Individuals may primarily expose themselves to news and sources that reinforce existing political beliefs to exclude attitude-discrepant messages, rely on channels that are part of their habitual media diet, or self-select into information that is merely entertaining and arousing (e.g., Garrett, 2009; Stroud, 2008, 2011). Such selection biases are a critical societal concern as the lack of balanced, cross-cutting news exposure can be related to the fragmentation and polarization of audiences (e.g., Hart et al., 2009; Sunstein, 2009).

This study builds upon valuable previous research on selective exposure (e.g., Garrett, 2009; Knobloch-Westerwick & Meng, 2009; Knobloch-Westerwick et al., 2020; Meffert et al., 2006; Stroud, 2008, 2011; Trussler & Soroka, 2014) by further investigating those news selection biases that might be most problematic when it comes to creating distorted and fragmented worldviews. First, previous research has primarily shown how audiences' tendency to avoid cognitive dissonance can result in a *confirmation bias* (e.g., Knobloch-Westerwick et al., 2020), meaning that individuals actively restrict themselves to messages that align with preexisting political attitudes and beliefs (Iyengar & Hahn, 2009; Stroud, 2008). Moreover, in the context of today's high-choice news environment, people's information exposure may not only be biased by systematic processing of the content and stance of information, in terms of the need for attitudinal congruence. With the 24/7 high pace overflow of information, other easy to process cues or unconscious desires might additionally play a decisive role. Two of these important factors at play are source biases and negativity. As a second selection bias, *source bias* might occur when people show a tendency to avoid engaging in repeated active news selection. The overload of information available might force audiences in habitual news selection patterns based on easy to process heuristics like the source of information (Diddi & LaRose, 2006; Van der Meer, 2018). Since source bias can also be affected by users' preexisting political orientations (Choi et al., 2009), this bias can be understood as a special case of the confirmation bias on a preceding stage of news selection. As a consequence, people may routinely prefer certain news sources while avoiding others, either based on their preexisting political orientations or based on their customary and repetitive patterns of news selection. Thus, people may not only judge the fit of information based on prior attitudes, but also on the expectation that certain sources

can deliver sought gratifications. Third, in the abundance of (online) news choices, another attention-grabbing cue or unconscious desire might play a decisive role. The *negativity bias* argues that audiences might exhibit a (unconscious) preference for negative over positive political news (Trussler & Soroka, 2014). These preferences might result from the fact that people are genetically wired to pay close attention to negative news (Lengauer et al., 2011) or have an intrinsic desire for entertainment or attractive news. Hence, in light of this bias, audiences might be drawn toward information with the highest news value in an online news environment characterized by information and sources that compete for attention.

Using an experimental design, this study aims to provide new insights into the relative role of confirmation bias, source bias, and negativity bias in the selection of political news. In doing so, this study's contribution to current literature is threefold. First, this research simultaneously explores three key selection biases to provide compelling evidence on their effects and to identify which bias is most decisive if it comes to news selection. Such insights are crucial for a better understanding of what different processes and mechanisms of selective exposure to news are present in an online news environment that overloads audiences with information. An important unanswered question is what type of news processing is most prominent in this high-choice environment. For example, do people mainly rely on more passive and habitual patterns of news selection as a response to the abundance of news content and sources – i.e., source bias? Or do audiences still focus more on the content of the news, either in terms of whether it confirms their prior political attitude and ideology – i.e., confirmation bias – or what stance out as newsworthy information with potential “arousing” elements – i.e., negativity bias? These findings will help us understand the source of how individuals receive different or contrasting pictures of the world around them, due to (active) self-exposure to different media realities. Second, to test how robust the guiding influence of these biases are, the selection biases are studied across two countries (i.e., US and UK) and politicized issues (i.e., immigration and health care privatization). Third, this study takes an important next step toward studying the mechanisms that underlie news selection biases by exploring for *whom* these biases are most influential by means of testing the moderating role of people's involvement and skepticism.

### **Selective exposure in high-choice information settings**

Online information environments are subject to filtering processes, as citizens can decide on the platforms they use, whilst being empowered to scroll, pause, skip, and multiscreen at any time and location they desire. In this setting, selective exposure is crucial to consider (e.g., Hameleers & Van

der Meer, 2020; Stroud, 2011). This concept entails the process by which citizens' existing beliefs play a guiding role in what new information gets selected or avoided (Iyengar & Hahn, 2009; Stroud, 2008). If people, for example, strongly oppose (illegal) immigration, these attitudinal stances can operate as a filtering mechanism. Specifically, new information that *supports* the issue position that immigrants should not be allowed access to the host country may be selected, whereas information that counters this existing issue position may be selectively *avoided*. In the US, selective exposure has been studied on the issue level and the level of partisan identities (Iyengar & Hahn, 2009). Iyengar and Hahn (2009), for example, found that Republicans prefer Fox news and avoid CNN and NPR as news sources, whereas Democrats engage in opposite biases of selection and avoidance.

Although selective exposure and avoidance describe different behaviors, the underlying psychological process of both filtering behaviors can be understood as cognitive dissonance (Festinger, 1957) and more specifically motivated reasoning (e.g., Taber & Lodge, 2006). Cognitive dissonance theory postulates that people are biased toward their in-group in order to maintain and strengthen a positive and internally consistent self-image (Festinger, 1957). The vast amount of information in today's news environments is thus scanned on its fit with preexisting views. Although accidental exposure still occurs and incongruent information is not always avoided (Garrett, 2009), experimental research has shown a consistent and robust effect of these selection biases in people's daily media choices. Moving forward in this field, this research aims to establish the *specific* drivers that motivate selective news exposure.

### **Confirmation bias as a driver of selective exposure**

As a first central driver of selective exposure, this paper zooms in on confirmation bias (e.g., Knobloch-Westerwick et al., 2020). This driver of selective exposure is strongly related to people's preferences for attitudinal congruent information (Festinger, 1957). The conceptualization of a confirmation bias aligns with a classical understanding of selective exposure. In other words, people select messages that confirm prior beliefs to maintain a consistent and positive image of the self (Festinger, 1957). However, selective exposure research failed to consistently find that selective exposure to attitudinal congruent content is a remedy for reducing cognitive dissonance (Garrett, 2009). Therefore, other studies have looked at other explanations for confirmation biases and have shown how people's information processing style can be decisive in selecting attitude-consistent content over attitude-discrepant exposure (Knobloch-Westerwick et al., 2020). It is argued that it requires less cognitive effort and engagement to process like-minded information as compared to information that converges with

preexisting views (Taber & Lodge, 2006). The framework of cognitive dissonance and information processing styles can be used to formulate the first hypothesis of this study (**H1**): People are more likely to selectively expose themselves to political news that confirms their prior attitudes than news that attacks their existing beliefs.

### ***Source bias as a driver of selective exposure***

Beyond selection induced by the content of news, and its congruence with preexisting ideologies, today's high-choice media environment might force audiences into other selection mechanisms that can be considered less demanding. The overload of information that is presented to audiences in today's fast-paced news environment might result in habitual news selection (Diddi & LaRose, 2006; Van der Meer, 2018). This could result in a *source bias* where news consumers use the source of a news item as an easy cue or heuristic to determine whether they would select the article to read. So firstly, audiences' news selection might be based on which outlet or platform the news comes from, primarily as a routine process. Such customary and repetitive patterns might help people navigate in a high-choice news environment that overloads them with information from a wide variety of news sources. Second, in this process, people's attitudinal stance and political ideology can also operate as a guiding mechanism driving selection into information from a given source. This bias may thus be driven by a form of confirmation bias in the first place: attitude-congruent exposure may create habitual exposure patterns on a longer term because audiences may develop expectations about which sources can deliver attitude-consistent information. For example, more liberal news consumers would be more likely to select news coming from The New York Times while more conservative audiences would routinely select news coming from Fox News. Accordingly, the source bias and confirmation bias can be strongly related as they both stem from people's tendency to expose themselves only to like-minded information and sources. It should be noted that this process may operate on a more or less unconscious level, indicating that source cues are not always processed systematically.

The notion of source bias further relates to the premises of the hostile media and friendly media phenomenon. First, hostile media perceptions can be understood as individuals' beliefs that media coverage on a highly involved issue is biased against their view (e.g., Choi et al., 2009). Media sources can serve as a cue for hostile media perceptions (Choi et al., 2009). As shown by Giner-Sorolla and Chaiken (1994), existing beliefs about media biases may drive hostile media perceptions. Applied to source cues, Arpan and Raney (2003) demonstrated that the same information distributed by a rival media source is seen as more hostile than the *same* information advocated by a

supported outlet. Second, the friendly media phenomenon postulates that audiences tend to perceive media sources and content that support their political attitudes as friendly. Hence, general political favoritism toward media outlets is experienced when media sources support people's perceptual screens (Goldman & Mutz, 2011). This phenomenon is also found to limit cross-cutting exposure – and therefore cultivates reliance on habitual news exposure.

Extrapolating these findings to news selection in a high-choice media environment, people should be most likely to select information coming from news sources they support as an easy to process heuristic, whereas they avoid information of sources they oppose. We, therefore, raise the second hypothesis of this study (H2): People are more likely to selectively expose themselves to political news from ideologically congruent media sources than news from ideologically incongruent media sources.

### ***Negativity bias as a driver of selective exposure***

In an information environment where news providers compete for audience attention, more and more news is produced in formats that stand a higher chance of selection. One way to attract audiences is to provide news with a particularly negative overtone (e.g., Van der Meer et al., 2019). On the audience side, people may, respectively, be drawn to select negative news over positive content as it stimulates more interest. Thus, by moving beyond the traditional approach of predicting news selection based on people's preexisting political orientation, this study aims to investigate the relative role of negativity as a predictor of selective exposure.

A great body of research has already indicated that negativity is an important news value. From a news value perspective, negativity in news is considered as an instrumental value in the competition for audiences' attention (e.g., Galtung & Ruge, 1965). In general, negativity, as compared to positivity, is considered more entertaining, interesting, eye-catching, and understandable (Lengauer et al., 2011). Accordingly, as a result of the impact of competition and commercialization within the media system, media and their journalists tend to overemphasize negative news in an effort to obtain the highest ratings (Lawrence & Mueller, 2003; Van der Meer et al., 2019).

If negative news reporting is used as a strategy to appeal to a larger audience, audiences should also show a *preference* for more negative news as opposed to positive reporting (e.g., Dunaway, 2013; Eilders, 2006; Knobloch-Westerwick et al., 2020). Psychologically, preferences for negativity can be explained by people's build-in mechanism, as an outcome of the evolutionary process, to scan their environment for threats (Lengauer et al., 2011; Soroka & McAdams, 2015). If (online) information environments



point to potential threats to people's well-being or identity, it should be processed to evaluate the risks and avert the potential threat (Soroka et al., 2019). Positive information, in contrast, may not pose a direct threat to individuals. Thus, rooted in evolutionary theory, negative information has special value in terms of "diagnosticity" (Skowronski & Carlston, 1989) or "vigilance" (Irwin et al., 1967) that is required to avoid negative consequences. The prevalence of these psychological processes is confirmed in empirical research on negativity biases in the fields such as (social) psychology (e.g., Baumeister et al., 2001; Ito et al., 1998; Rozin & Royzman, 2001) and neurology (e.g., Dehaene et al., 1994; Smith et al., 2003). Information with a negative valence has a stronger effect on evaluations than equally strong positive information. Hence, negative events are more salient, contagious, dominant, and efficacious compared to positive events. Negativity consequentially has a stronger impact on physiological arousal, perceptions, attention, and learning (Rozin & Royzman, 2001).

Previous research that has studied the selective exposure of political information has indeed observed a negativity bias in news selection (Donsbach, 1991; Knobloch-Westerwick et al., 2020; Meffert et al., 2006). Studying this negativity bias, Trussler and Soroka (2014) demonstrated that people show an (unconscious) preference for negative over positive news when asked to select political content. Hence, *ceteris paribus*, because of the psychological and discursive appeal, it can be expected that people are more likely to select negative news over positive news. We, therefore, raise hypothesis three (**H3**): People are more likely to selectively expose themselves to political news that is negatively valenced than positively valenced news.

### ***The relative contribution of the three selection biases***

The most important contribution of this research is to explore the driving factors of selective exposure to political news. Therefore, we aim to establish the *relative* role of all three aforementioned selection biases. In this setting, we also test the robustness of these driving forces by focusing on two polarized topics with different ideological underpinnings that are central to selective exposure research – i.e., immigration (e.g., Gil de Zúñiga et al., 2012) and health-care privatization (e.g., Iyengar et al., 2008; Knobloch-Westerwick & Meng, 2009) – in two different settings that have been associated with polarization – i.e., the US and the UK. Indeed, as indicated by Iyengar et al. (2018), previous studies on (affective) polarization mostly rely on a single-country context. The following research question is formulated (**RQ1**): (a) What are the relative roles of conformation bias, source bias, and negativity bias in predicting selective exposure to political news? (b) Are the effects of these biases robust when comparing two political



issues (immigration and health-care privatization) and two countries (US and UK)?

### ***The conditionality of selection biases: moderating effects***

Moving toward a refined understanding of the predictive power of the here-studied selection biases, the current study models individual differences as moderators of selection patterns. In doing so, the study establishes for *whom* the three media biases are most influential. Recognized as key concepts by selective exposure scholarship, we focus our attention in particular on preexisting levels of *involvement* and *skepticism*. As involvement, as well as skepticism, is found to predict media selection patterns, these factors might intensify biases in news selection.

### ***The moderating influence of involvement***

The effects of the selection biases likely vary across different levels of involvement. First, individuals highly involved with an issue are likely to hold more extreme attitudes, which could lead them to experience greater dissonance if confronted with counter-attitudinal information (Knobloch-Westerwick & Meng, 2009). By attempting to avoid such information, selection effects of the confirmation and source bias will be accelerated. Accordingly, previous scholarship finds that when people hold more extreme attitudes, they are more likely to select attitude-congruent news about that specific topic (Brannon et al., 2007). By the same logic, confirmation bias is a more likely driver of selection for individuals who largely affiliate with the political ideas at display in the media (Johnson et al., 2009). Along these lines, the strength of source bias is expected to differ across levels of news involvement. Heavy media users, strongly engaged and involved with salient issue in the news, are likely aware of the diverse pallet of opinions distributed by the media, giving rise to the possibility that hostile media effects will drive selection.

Moreover, involvement also matters for the weight of the negativity bias in selection patterns. Although often conceptualized as a general preference for the negative above the positive, psychological research points in the direction of individual-level variation in terms of predispositions toward negativity (Hibbing et al., 2014) and a need for entertainment in political information. It can be therefore anticipated that the negativity bias is more decisive regarding the outcome of selection patterns among those high in need for and tolerance of negative and entertainment news than those who are not. Following, depending on individuals' involvement and interest, news biases may motivate selection and avoidance to a higher degree than for others. We anticipate (H4): When individuals are generally more

involved/interested, the effects of (a) confirmation bias, (b) source bias, and (c) negativity bias on selective exposure are more pronounced.

### ***The moderating influence of skepticism***

Next, the influences of selection biases are likely to differ across individuals that are generally high or low in skepticism toward the media or politics. Although skepticism and distrust are strongly related concepts, skepticism refers to a more concrete evaluation of the (performance of) institutions and actors, whereas distrust is a more general negative evaluation (Hetherington, 1998). To understand the role of skepticism in biased selection patterns, we take into account the negative evaluation of politics, media systems, and media content in terms of political news. Particularly, the current study distinguishes *three types of skepticism* with inherent relevance to the here-studied selection biases. First, we expect that confirmation bias might be especially influential among more *politically skeptical* individuals. As the concept of political skepticism is negatively related to solidarity as well as political interest (Pattyn et al., 2012), individuals with high—as opposed to low—levels of political skepticism may be reluctant to change their minds and more probable to ignore disconfirming evidence. Consequently, politically skeptical individuals might be particularly attracted by congenial information and actively filter out opposing arguments and less motivated to scrutinize the viewpoints of opponents.

Second, the motivation to avoid opposed media sources, incited by source bias, is likely more pronounced among people who are *distrustful* and *skeptical of the media*. As trust in the media is often related to exposure to a wider variety of information sources (Tsfati & Cappella, 2005), trust might partly override related hostile media effects. In other words, individuals that are generally trustful of media may still expose themselves to sources that they dislike. Moreover, individuals who have grown skeptical of media sources may be more prone to view such sources as being unfair or biased against their viewpoints, which may consolidate the tendency to avoid such sources.

Last, it can be anticipated that *skepticism* toward *negative political news* will exaggerate individuals' focus on negatively valenced information. Extant scholarship documents that the negativity bias is more prominent among individuals that consider the world a dangerous place (Fessler et al., 2014). This sensitivity for the dangerous and the threatening might well be linked to preexisting levels of skepticism and mistrust regarding negativity in the media: Skeptical individuals might be more prone to focus on pitfalls than promises. Accordingly, skeptical news consumers might be especially drawn to deviant or negative information. Based on these considerations, we formulate (H5): For individuals with higher (as opposed to lower)

preexisting levels of skepticism toward politics, media, and negative political news, the effects of (a) confirmation bias, (b) source bias, and (c) negativity bias on selective exposure are more pronounced.

## Method

To test the role of confirmation, source, and negativity bias in the selection of political news, we relied on an online survey-embedded experimental design. The experiment was a two within-subjects (*confirmation bias*: pro-versus counter-immigration/public health-care framing of news item) by two within-subjects (*source bias*: source of news item in line with peoples' political leaning or not, distinguishing between more liberal or conservative news outlets) by two within-subjects (*negativity bias*: news items negatively valenced versus positively valenced) by two within-subjects (*political issue*: immigration and health care) factorial design. Since all factors were within-subjects, all respondents were exposed to multiple news items that represent all combinations of biases. The Ethics Review Board of the University of Amsterdam, Amsterdam School of Communication Research, approved the design of this experimental study.

As argued in the theory section, part of the object of this study was to test the robustness of the effect of selection bias. First, to investigate if selection biases are present and equally prominent across national contexts, we conducted the study in both the US and UK. Selecting these two countries allowed us to keep the language consistent across the conditions. Even though the media systems of both countries may be classified as relatively similar (Hallin & Mancini, 2004), the political contexts at the time of data collection may have cultivated different confirmation biases. In the UK, public opinion and media discourse were divided by opposing Remain and Leave camps, providing a more issue-specific discursive opportunity structure for selection bias than general partisan or ideological identifications. In the US, a more traditional Liberal versus Conservative bias may have prevailed at the time of data collection. Hence, different types of sources, negativity, and confirmation biases may be promoted in different national settings. This paper thus attempted to demonstrate how robust the different biases are in different national settings.

Second, to confirm if the findings hold across different contexts and are therefore more generalizable and reliable, the experiment relied on two polarized political issues, namely, immigration and the privatization of the health-care system. For the first issue, we examined news selection processes in the context of immigration and refugees, drawing on news about the continuing refugee crisis in the US, Europe, and the Middle East. For the second issue, we studied news selection in the context of welfare and health care, relating to a fierce debate regarding whether health care should

be privatized or not. These two issues were selected as they are both polarizing themes where public debate is strongly driven by political ideology. Yet, these issues may have different meanings in the two selected countries. Whereas issue positions on health-care privatization follow traditional Liberal versus Conservative partisan divides in the US (i.e., the affordable health-care act is supported by Democrats and opposed by Republicans), citizens in the UK have access to National Health Service (NHS), albeit there are debates on whether this has to be transformed. Moreover, the selection of these two highly polarized issues limited the scope of the study and therewith the findings are not easily generalizable.

By relying on these polarized issues we determined whether the selection of news items was either congruent or incongruent with respondents' existing attitudes when testing the confirmation bias. In addition, through a random process, we ensured that we ended up with equally sized group of supporters and opposers of immigration and privatization of health care.

### **Sample**

US and UK participants were recruited via the SSI research company in March 2018. Only those who correctly answered a pre-stimuli attention check were included in the final sample. Additionally, quotas were set for attitude regarding immigration and health care. In total, 428 respondents in the U.S. fully completed the survey. The average age was 38.89 years and 67% was female. Regarding the distribution of education, 40% was lower educated, 26% was higher educated, and 34% had a moderate level of education. For the UK sample, 430 respondents fully completed the survey (mean age = 37.69, 55.74% female, 28% lower educated, 20% higher educated, and 52% moderate level of education).

### **Procedure**

After an introduction and the informed consent procedure, the online survey asked two issue-attitude questions on a 7-point likert scale assessing respondents' overall support of the issues of migrants coming to the US/UK and the privatization of the health-care system (as compared to a public health-care system). Those respondents who held moderate-level attitude were excluded from the study as all participants had to be allocated to a condition with either an attitude congruent or incongruent news article to test the confirmation bias (Hameleers & Van der Meer, 2020). Next, a pretest questionnaire was shown, including respondents' demographics, political orientation, media orientation, and an attention check question.

Afterward, participants were informed that, on the following pages, they would view an online feed that displayed several news items. The next page

showed the eight stimuli (news items) in social media or online newsfeed-style newsfeed either about immigration or health care (random allocation of order). Both US and British participants were exposed to a news feed containing sources and news from their own country only. The eight items were a combination of the three conditions related to selection biases – i.e., a combination of all attitude-congruent and incongruent news items, positive and negatively formulated news items, and both sources that were either more liberal or conservative. When viewing these news items, respondents were instructed to select the three news items they would most likely choose to read in real life (i.e., top three news items) (see [Figure A1](#) for an example). After that, the next pages individually showed the same eight news items in a random order, and participants were instructed to give a rating of the likelihood that they would select each item to read (see [Figure A2](#) for an example). Afterward, respondents followed the same procedure for the other political issue.

### ***Stimuli and independent variables***

The stimuli were made up of eight headlines on immigration and eight on health care inspired on actual news media coverage on these topics. For the experiment, four pro-immigration/privatization of health care and four anti-immigration/privatization of health-care headlines were combined with four negatively framed and four positively framed headlines. For each combination (e.g., negatively formulated anti-immigration headline), two headlines needed to be included as they were matched with both conservative and liberal source types. Based on extensive pilot testing (US:  $N = 44$ ; UK:  $N = 48$ ) (testing 20 headlines per issue, five per confirmation bias, and negativity bias combination), the selected headlines conveyed the specific biases to participants across conditions to ensure that they perceived the stimulus material as intended. Moreover, to maximize internal validity, we ensured that headlines did not differ on perceived arousal, complexity, and salience and headlines that were comparable regarding the perceived biases were selected for the within conditions. [Table 1](#) details the headlines used in the final experiment.

For the manipulation of the source, each headline combination was matched with either a more liberal or conservative news source. For the liberal information source, The New York Times (US) and The Guardian (UK) were selected as it can be argued that these sources relate more to pro-immigration and Pro-public health care. Fox News and The Sun were selected as the more conservative sources.

The order in which the issues were presented was randomized (for both the ranking option and the likelihood of selecting). Also, the within-issue pairings of the different sources and headline exemplars were randomly

**Table 1.** Headlines for the conditions of confirmation bias and negativity bias.

Conditions		Headlines <sup>a</sup>
<b>Immigration</b>		
Pro-immigration	Positive	1. Effective ideas for creating a better world for refugees 2. Residents raising funds to sponsor refugee family
Pro-immigration	Negative	1. Neglect of refugees means forcing them to return to war zone 2. When deportation of refugees is a death sentence
Anti-immigration	Positive	1. Keeping out refugees in region is best way to help most people 2. Less support for refugees will strengthen trust in workers' freedom of movement
Anti-immigration	Negative	1. Refugees: the Trojan horse of terrorism 2. Refugees are taking the jobs of native US/UK citizens
<b>Health care</b>		
Pro-public health care	Positive	1. Health care is a human right for all citizens 2. America/UK needs an universal health care system built for care, not profit
Pro-public health care	Negative	1. Privatization of social security puts people's retirement income at the mercy of the stock market 2. Privatized health care is a death sentence for the poor
Anti-public health care	Positive	1. How privatizing social security can improve quality of care 2. Private health insurance leads to higher satisfaction of care
Anti-public health care	Negative	1. Health care fraud will increase if we do not privatize the system 2. Public welfare spending is draining our economy

<sup>a</sup>Headlines 1 or 2 were randomly matched with a more conservative or liberal source type

allocated. In doing so, different combinations per source-headline pairing were presented to participants to control for the chance that a specific combination of source and headline would be more appealing to respondents.

## Measures

### *Attitudinal congruence*

To split respondents based on their political attitudes toward immigration and health care, we used the attitude questions that were asked at the start of the survey: "On a scale from 1 to 7, please indicate how strongly you support or oppose that immigrants are entering the UK/US?" and "Next a question about the welfare system in the UK/US. On a scale from 1 to 7, please indicate whether you support or oppose privatizing the health care system (e.g., health care) (as compared to a public health care system)." Those who scored 1 through 3 were labeled as opposing, those who scored 5 through 7 were labeled as supporters. Respondents who answered 4, neither oppose nor support, were excluded.

In the next step, we constructed new conditions based on congruence between participants' attitude and the headline's stance on the political issues and the sources. Headlines and sources were considered congruent

if they were in line with respondents' existing immigration/health care attitudes and were coded as incongruent if they countered their views on immigration/health care.

### **News selection biases**

The three selection biases based on the experimental conditions, that serve as independent variables, were scored as following: coded as 1 if the news item was congruent with ones preexisting attitude for confirmation bias; coded as 1 if the news item was coming from an ideologically congruent source for source bias, and coded as 1 if the news item was negatively valenced for negativity bias.

### **News selection**

To measure selective exposure based on biases in news items, we relied on two dependent measures. First, participants were asked to rank the headline news items and indicate their top three out of the eight items that they would most likely choose to read. This *selection measurement* indicated whether participants selected certain news items over others based on the presented headline and source in a setting where they are exposed to multiple options (Figure A1). Second, as a follow-up, the same eight news items were shown in a random order on separate pages, and respondents were asked about the likelihood that they would select each news item to read when they would come across it in their everyday life on a scale from 0 "very unlikely" to 100 "very likely." This dependent measure can be seen as an indication of participants' *likelihood of reading news items* with different combinations of headlines and sources (Figure A2).

### **Moderation of involvement**

To measure whether the three biases are moderated by involvement, bias-specific items were presented to the respondents. First, for the confirmation bias, we measured political opinion strength or attitude extremity to see how involved they are in the issues of immigration and health care. We folded the scales of attitudes on immigration and health care to create the opinion extremity variable per issue (Barnidge et al., 2020). Second, for source bias, we measured respondents' involvement by the frequency with which they used their most common news sources included in the experimental design on a 7 point likert scale ( $M = 2.38$ ,  $SD = 3.43$ ). Third, for negativity bias, we measured, on a 7 point likert scale, the extent to which respondents were interested in or tolerate negative news (Cronbach's  $\alpha = .74$ ,  $M = 3.84$ ,  $SD = 1.29$ ) with two items (i.e., "I do not mind negative news items" and "I prefer news items that attack politicians for their misconduct") and their need for entertainment in political news or affinity for political humor (i.e., Entertainment in political news ...



makes me aware that our political system is dysfunctional/can help me express my political opinions) (Cronbach's  $\alpha = .84$ ,  $M = 4.09$ ,  $SD = 1.15$ ) (Boukes, 2018).

### *Moderation of skepticism*

Also, bias-specific items were used to measure respondents' skepticism. First, for confirmation bias, political skepticism was measured with four items (e.g., politicians are primarily self-interested) on a 7 point likert scale (Cronbach's  $\alpha = .82$ ,  $M = 5.43$ ,  $SD = 1.27$ ) (Bos et al., 2013). Second, for source bias, media skepticism was measured with six items (e.g., news media help society to solve its problems (reversed scored)) on a 7 point likert scale (Cronbach's  $\alpha = .95$ ,  $M = 3.15$ ,  $SD = 1.47$ ) (Tsfati & Cappella, 2003). Third, for negativity bias, skepticism toward political news being overly negative was measured with two items (e.g., "I think political news is generally skewed to the negative rather than the positive") on a 7 point likert scale (Cronbach's  $\alpha = .71$ ,  $M = 4.02$ ,  $SD = 1.02$ ). Here, it may be argued that our measures of skepticism are closely related to perceptions of distrust. However, as we connected these negative perceptions more concretely to the performance of different institutions, we refer to skepticism to tap participants' negative evaluation of political institutions, the media system, and media content in terms of political news.

In [Appendix B](#) a means table is provided with the scores on all key variables for the dependent variable selection measure. The table details the mean scores of those respondents who ranked that headline as part of their top three out of the eight news items available to them.

## **Analyses**

The data were wide-to-long stacked in order to deal with the within-subject design. Hence, each evaluation given by a participant for a single news item is regarded as a single case. As every participant rated eight news items, there were eight observations per individual. To control for the fact that the stacked responses are clustered within participants, a multilevel approach with random intercepts was applied. Finally, multilevel regression analyses tested if the biases and hypothesized moderation variables can explain the selection and likelihood of reading political news items.

## **Results**

### *Biases in political news selection*

To test if confirmation bias (**H1**), source bias (**H2**), and negativity bias (**H3**) determine the selection of political news, multilevel regression analyses were run. The three biases were tested simultaneously as dummy variables in the regression analyses and ran for both dependent selective exposure

measures; likelihood of reading and the selection variables. Table 2 shows the results of the regression models for both dependent variables and split up per political issue and country. Taken together, the findings show that all three biases consistently affect news selection. Thus, when the headlines of political news items are (a) in line with peoples' political attitude, (b) from a congruent news source, and (c) framed in a negative way, participants were more likely to select these items in online news. These findings confirm H1-3.

Next, to explore **RQ1a**, we investigated which of the three biases is the strongest predictor of selective exposure. When interpreting the regression coefficients and confidence intervals in Table 2, it can be observed that the effects of the confirmation bias on selection are the strongest, while the effect of source bias and negativity bias is comparable in size. Additional post-estimation tests confirmed that the effect of confirmation bias on likelihood of reading is significantly higher than the effect of source bias ( $bdiff = 14.05$ ,  $SE = .73$ ,  $\chi^2 = 370.54$ ,  $p < .001$ ) and negativity bias ( $bdiff = 13.72$ ,  $SE = .73$ ,  $\chi^2 = 353.19$ ,  $p < .001$ ), while the effect size difference between source and negativity bias was insignificant ( $bdiff = .35$ ,  $SE = .73$ ,  $\chi^2 = .21$ , n.s.). The same pattern was observed for the other dependent measure of selection. The effect of confirmation bias was significantly stronger than source bias ( $bdiff = .47$ ,  $SE = .03$ ,  $\chi^2 = 352.11$ ,  $p < .001$ ) and negativity bias ( $bdiff = .45$ ,  $SE = .03$ ,  $\chi^2 = 320.29$ ,  $p < .001$ ), while source and negativity bias did not differ ( $bdiff = .02$ ,  $SE = .03$ ,  $\chi^2 = .76$ , n.s.).

### Robustness

To answer **RQ1b** about the robustness of the section bias effects we aim to see if the effects hold across different political issues – immigration and health care – and countries – US and UK. Based on the findings presented in Table 2, we can observe that the effects of all three biases are consistently significant for both issues and in both countries. Thus, it can be concluded that the effect of the confirmation bias, source bias, and negativity bias is robust across different contexts in a way that they play a significant role in the selection of political news.

Next, to test if the effects are significantly more profound across contexts, additional analyses were run using issue and country as interaction terms in the regression model. First, we found that the additional effect of the interaction term *political issue*, beyond the effect without information on the political issue, was significant for the effect of confirmation bias ( $b = 8.99$ ,  $SE = .82$ ,  $p < .001$ ) and source bias ( $b = 2.22$ ,  $SE = .82$ ,  $p < .01$ ) on likelihood of reading of political news and insignificant for negativity bias ( $b = 4.91$ ,  $SE = .82$ , n.s.). These results imply that confirmation bias and source bias are more important factors in the likelihood of selecting news

**Table 2.** Multilevel models explaining the likelihood of reading and selection.

	Overall			US			UK			Immigration			Health care		
	b(SE)	95% CI	N	b(SE)	95% CI	N	b(SE)	95% CI	N	b(SE)	95% CI	N	b(SE)	95% CI	N
<i>Likelihood of reading</i>															
N	858		428		430		858		858		858		858		858
Confirmation bias	17.96 (.42)*	17.14; 18.78	16.97 (.60)*	15.79; 18.15	18.95 (.58)*	17.82; 20.07	22.44 (.60)*	21.28; 23.61	13.46 (.56)*	12.36; 14.55					
Source bias	3.90 (.42)*	3.08; 4.71	3.17 (.60)*	1.99; 4.35	4.62 (.58)*	3.49; 5.75	5.00 (.60)*	3.84; 6.17	2.78 (.56)*	1.68; 3.87					
Negativity bias	4.27 (.42)*	3.46; 5.09	4.69 (.60)*	3.51; 5.87	3.86 (.58)*	2.73; 4.99	4.52 (.60)*	3.36; 5.69	4.02 (.56)*	2.92; 5.11					
Constant	39.71 (.74)*		42.80 (1.08)*		36.63 (.99)*		33.90 (.83)*		45.55 (.87)*						
ICC level	.3496		.3565		.3332		.3179		.4152						
LL full model	-64,267.36		-32,259.58		-31,988.37		-32,491.63		-31,981.49						
<i>Selection</i>															
Confirmation bias	.64(.02)*	.60;.67	.55(.03)*	.50;.60	.73(.03)*	.68;.78	.68(.03)*	.63;.72	.60(.03)*	.55;.65					
Source bias	.17(.02)*	.13;.21	.11(.03)*	.06;.16	.22 (.03)*	.18;.27	.22(.03)*	.17;.27	.12(.03)*	.07;.17					
Negativity bias	.19 (.02)*	.16;.23	.21(.03)*	.16;.26	.17(.03)*	.13;.22	.13(.03)*	.08;.18	.25(.03)*	.21;.30					
Constant	.25(.02)*		.31(.03)*		.18(.03)*		.24(.03)*		.26(.03)*						
ICC level	1.82e-23		1.08e-23		1.43e-23		6.37e-24		7.34e-24						
LL full model	-19,957.7		-10,060.55		-9874.68		-9958.44		-9986.37						

Note. Cells contain unstandardized regression coefficients with standard errors (SE), ICC = Intraclass correlation coefficient; LL = Log likelihood. \* =  $p < .0001$

on immigration as compared to news about the privatization of health care. The additional effect on the dependent variable selection was significant for all of the three effects; confirmation bias ( $b = .19$ ,  $SE = .08$ ,  $p < .05$ ), source bias ( $b = .24$ ,  $SE = .02$ ,  $p < .005$ ), and negativity bias ( $b = -.16$ ,  $SE = .08$ ,  $p < .05$ ). Thus, the confirmation bias and source bias are stronger predictors for the selection of news about immigration compared to health care and negatively framed news items about health care are more likely to be selected than negatively framed items on immigration. Second, the confirmation bias (likelihood of reading:  $b = -1.98$ ,  $SE = .83$ ,  $p < .05$ ; selection:  $b = -1.95$ ,  $SE = .04$ ,  $p < .001$ ) and source bias (likelihood of reading:  $b = -1.44$ ,  $SE = .83$ ,  $p < .10$ ; selection:  $b = -1.1$ ,  $SE = .04$ ,  $p < .005$ ) were found to be stronger predictors for the UK context compared to the US while the effect of negativity bias (likelihood of reading:  $b = .83$ ,  $SE = .83$ , n.s.; selection:  $b = -.03$ ,  $SE = .04$ , n.s.) was equally strong.

Next, additional analyses were run to divide the findings on the specific issues by countries. [Appendix C](#) shows the effects of the three biases on the likelihood of reading and selecting the different headlines separately per issue and country. Post hoc Chi-Squared test shows the significant differences of coefficients of the three biases across the four models. First, the findings show how the confirmation bias is the strongest in the UK for the issue of immigration, in terms of likelihood of reading and selection, compared to the other combinations of issue and country. In addition, the confirmation bias in both countries is stronger for the immigration issue than for the health-care issue. Second, the source bias shows also the strongest effects in the UK for the issue of immigration. Third, the effect of the negativity bias appears to be most pronounced in the UK for the immigration issue whereas it is more prominent for the health-care issue in the US.

### **Interaction effect of involvement**

To test the additional effect of respondents' involvement in the context of selection biases (H4), bias-specific interaction terms were tested to see if the effects differ by level of involvement (see [Appendix D](#)). Each multilevel regression model controlled for the other biases in this study. First, to test H4a, the confirmation bias was interacted with political opinion strength. The aggregated findings showed that when respondents had a stronger political opinion regarding immigration or health care, this significantly added to the effect of the confirmation bias on selective exposure (likelihood of reading:  $b = 2.82$ ,  $SE = .32$ ,  $p < .001$ ; selection:  $b = .05$ ,  $SE = .01$ ,  $p < .005$ ). Second, regarding H4b, we found that the frequency of media use strengthened the source bias in news selection (likelihood of reading:  $b = 1.15$ ,  $SE = .21$ ,  $p < .001$ ; selection:  $b = .06$ ,  $SE = .01$ ,  $p < .001$ ). Third,

when testing H4c, we found that the negativity bias becomes a stronger predictor of some selective exposure measures when participants were overall more interested in negative news (likelihood of reading:  $b = .54$ ,  $SE = .32$ ,  $p < .05$ ; selection:  $b = .02$ ,  $SE = .01$ , n.s.) and had a higher need for entertainment in political news (likelihood of reading:  $b = .89$ ,  $SE = .36$ ,  $p < .05$ ; selection:  $b = .03$ ,  $SE = .01$ ,  $p < .10$ ). These findings largely confirm H4a-c.

### **Interaction effect of skepticism**

To test the interaction effect between skepticism and the selection biases (H5), bias-specific interaction terms were tested for skepticism in the multilevel regression models (see Appendix D). First, when testing H5a, we observed that respondents' level of political skepticism reinforced the effect of confirmation bias (likelihood of reading:  $b = 2.27$ ,  $SE = .33$ ,  $p < .001$ ; selection:  $b = .07$ ,  $SE = .01$ ,  $p < .001$ ). Second, no bolstering effect was found for general news skepticism on the effect on source bias on selective exposure (likelihood of reading:  $b = .10$ ,  $SE = .28$ , n.s.; selection:  $b = .01$ ,  $SE = .01$ , n.s.). Third, testing H5c showed how skepticism toward negativity in the news reduced the selection of negatively framed news (likelihood of reading:  $b = -1.25$ ,  $SE = .41$ ,  $p < .005$ ; selection:  $b = -.03$ ,  $SE = .02$ ,  $p < .05$ ). These results confirm H5a and H5c, and reject H5b.

## **Discussion**

In today's media environment, citizens have increasingly become more powerful in composing their own media diet by selecting and avoiding information from the endless stream of online content. In this setting, selective exposure is important to consider (e.g., Stroud, 2008). Selective exposure may be driven by different receiver-side factors, among which confirmation bias, source bias, and negativity bias may be the most decisive factors. Building further on existing research, this paper studied the *relative* contribution of these factors in motivating selective exposure, and the individual-level differences making people more or less susceptible to these selection biases.

Our findings suggest that all three factors drive selective exposure, and that these biases are robust across different highly polarized topics and countries. Importantly, confirmation biases have the strongest impact on selective exposure, whereas source and negativity biases play a less central, yet significant role. Although our findings support extant research that focused on confirmation bias as an explanation of selective exposure and avoidance (e.g., Stroud, 2008), we show that this bias only provides a *partial* explanation of how people navigate through their information environment

when selecting news about the two polarized political issues of immigration and health-care privatization. On the source level, our findings demonstrate that the hostile media phenomenon can be extrapolated to selection biases of citizens (e.g., Choi et al., 2009) and can, therefore, be seen as a case of the confirmation bias on a preceding stage of news selection. In line with extant research by Arpan and Raney (2003), the results of our study demonstrate that the same information is more likely to be selected when it comes from a supported than an opposed media channel. The source may be regarded as an important heuristic cue, used to quickly judge the trustworthiness, relevance, and attitude-congruence of news in an overloaded information environment. Furthermore, in line with social identity research on the mobilizing effect of frames that cultivate a threat (e.g., Polletta & Jasper, 2001) and previous selective exposure research (Donsbach, 1991; Knobloch-Westerwick et al., 2020; Meffert et al., 2006; Trussler & Soroka, 2014), we found that negative news is more mobilizing than positive news in terms of selection effects. Taken together, our findings demonstrate that negativity, identified as a crucial supply-side news value (e.g., Lengauer et al., 2011), resonates with the selection bias of citizens on the demand-side. The pronounced role of confirmation bias in online news selection seems to indicate that audiences strongly rely on the content of information for their selection mechanisms. While source cues also play an important role, the findings seem to suggest that such easy to process cues are not the sole driver of news exposure in a context of information overload. In addition, news articles with high news values, in terms of a focus on negative elements, also stand a higher chance to be selected, yet, the most important element of news content, if it comes to selective exposure, relates to the congruence with audiences' prior political beliefs.

Our study points to some important individual-level differences that condition the impact of the different drivers of selective exposure. Confirmation and source biases are more pronounced amongst more involved people. This can potentially be explained in the light of defensive motivated reasoning (Taber & Lodge, 2006). More specifically, people with stronger opinions may regard challenging information and sources as a stronger attack on their existing beliefs and reassuring information as more relevant resources to consolidate a consistent image of the self (Festinger, 1957). Moreover, people who preferred negative news and enjoyed entertainment in political news had a stronger desire to select negative news items, whereas people who demonstrated a more skeptical view on negative news tended to avoid it. These findings extend selective exposure research that focused on attitudinal congruence as a driver of selective exposure (e.g., Stroud, 2008, 2011). As an important theoretical contribution, our research shows that selective exposure is also contingent upon the congruence of certain *news preferences* and the valence of political news.

Finally, more political skeptical individuals are more likely to demonstrate a confirmation bias, which is in line with literature postulating that more distrusting citizens tend to avoid cross-cutting exposure and attacks on their existing beliefs, as they are also likely to be less involved and interested in politics (Pattyn et al., 2012). Yet, when individuals are more critical toward the news, their negativity bias is less pronounced. Hence, more skeptical and less critical individuals may avoid balanced exposure, which fosters polarized divides and distorted worldviews.

Beyond the individual-level, selective exposure may also be conditional on the issue. Source and confirmation biases play a stronger role for the selection of news on immigration than news on health care. One potential explanation is that immigration more explicitly taps into people's (national) identity, and signals a stronger and more severe threat to the in-group. Hence, in line with collective action theory (Gamson, 1992), a stronger perceived threat may result in a stronger intention to engage on behalf of the in-group – in this case by selecting more congruent information disseminated by likeminded sources, and avoiding information from “the outside.” Negativity bias was found to play a stronger role for the issue of health care. Potentially, in the case of a more thematic issue like health care, there is a stronger need to make a story more attractive by highlighting the negative elements of the issue as compared to a more episodic issue like the refugee crisis.

Moreover, we see in our study that confirmation biases and source cues, while present in both countries, are more pronounced in the UK compared to the US. One potential explanation is the socio-political context of the countries at the time of data collection. In the aftermath of the Brexit referendum, UK public opinion is highly polarized, especially around such issues. In this polarized setting, these two issues are frequently interpreted differentially by the pro-remain and pro-leave camp. Even more so, different media outlets have taken on different partisan views on the Brexit. The mechanism of identity confirmation may thus be especially prominent in Britain, where people select information and sources known to support *their* issue positions on the Brexit.

This study has some limitations. First of all, we did not investigate the effects of self-selected information on people's attitudes, emotions, or behavior. Future research should also analyze what happens *after* selective exposure – does congruent selective exposure on all three levels foster political polarization? (Stroud, 2008). Secondly, the selective exposure experiment is conducted in a static and artificial setting. Thus, the eight headlines presented to the participants do not simulate the basically infinite selection options of sources and articles that audiences can find online. Moreover, we only focused on two topics in two polarized political settings. Future research could investigate how the different biases play out for less polarized issues, and for information that is not political (i.e., entertainment or satire). We also included only a limited selection of traditional news sources. In the high-choice media landscape, there



are many different sources of information to consider, such as fact-checkers, ordinary citizens, celebrity influencers, or opinionated blogs. Moreover, the level of negativity used in the headlines did not vary in our study. Future research could also look at what happens if the headlines are far more negative and clickbait-like, perhaps than the negativity bias might play a stronger role relative to the confirmation bias. In addition, the sample used in this study could have been problematic for accurately capturing the moderating effects of involvement since individuals with moderate attitudes were excluded from the study. Thus, the sample only included those who held (extreme) views on immigration and health-care privatization and were, therefore, more likely to be highly involved. Finally, we did not explicitly measure whether people would actively avoid certain news items and only looked at measures of selective exposure.

Despite these limitations, this study provides novel insights into the *relative* role of three influential selection biases, indicating that citizens do not merely seek for congruence on the content level, but that sources and negativity biases also drive people's motivation to consolidate digital spaces that reassure consistent image of the self and potentially result in distorted and fragmented worldviews on the individual level.

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## Appendices

### Appendix A

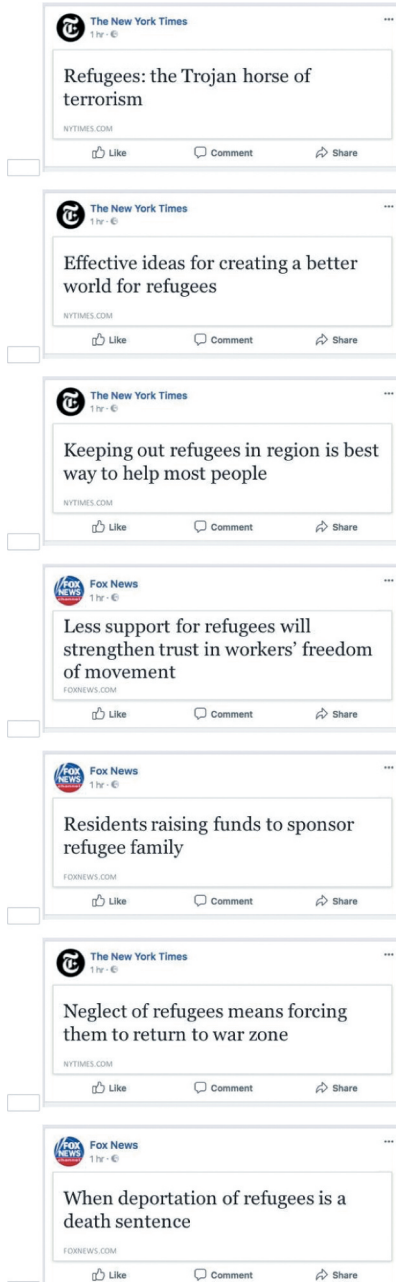


Figure A1. Stimuli example of selection measurement.



Thinking about your everyday life, how likely would you select the above news item to read when you came across it? (0 = very unlikely, 100 = very likely)

0      10      20      30      40      50      60      70      80      90      100



Figure A2. Stimuli example of likelihood of reading news items.



**Appendix B**

**Table B1.** Mean scores on key variables for those respondents who ranked a headline as part of their top three

Confirmation bias	Negativity bias	Source bias	N (US)	N (UK)	Attitude ref/health	Political opinion strength	Political skepticism	Related frequency of source use	Media skepticism	Interest in negative news	Need for entertainment	Skepticism toward negativity
<i>Refugee news items</i>												
Pro	Positive	Liberal	210	211	5.14 (1.72)	2.68 (1.57)	5.50 (1.17)	3.91 (2.22)	3.45 (1.59)	3.73 (1.39)	4.30 (1.19)	3.89 (1.05)
Pro	Negative	Liberal	196	241	5.00 (1.86)	2.69 (1.54)	5.48 (1.20)	4.14 (2.24)	3.49 (1.60)	3.91 (1.39)	4.41 (1.22)	3.92 (1.05)
Anti	Positive	Liberal	110	130	3.21 (2.05)	2.46 (1.45)	5.47 (1.20)	3.34 (2.29)	3.30 (1.64)	3.82 (1.35)	4.11 (1.26)	3.93 (.94)
Anti	Negative	Liberal	160	185	3.51 (2.05)	2.52 (1.42)	5.38 (1.11)	3.84 (2.58)	2.99 (1.53)	3.86 (1.34)	3.98 (1.36)	3.93 (.85)
Pro	Positive	Conservative	174	161	4.64 (1.95)	2.51 (1.53)	5.40 (1.21)	3.65 (2.20)	3.23 (1.58)	3.68 (1.37)	4.22 (1.27)	3.86 (1.00)
Pro	Negative	Conservative	187	123	4.70 (1.99)	2.43 (1.54)	5.43 (1.20)	3.69 (2.20)	3.34 (1.62)	3.69 (1.47)	4.25 (1.28)	3.99 (1.08)
Anti	Positive	Conservative	100	93	3.01 (1.96)	2.85 (1.56)	5.49 (1.17)	4.58 (2.56)	2.83 (1.62)	3.52 (1.33)	4.11 (1.43)	4.08 (.80)
Anti	Negative	Conservative	150	146	3.09 (1.85)	2.60 (1.51)	5.34 (1.24)	4.51 (2.50)	2.91 (1.66)	3.81 (1.45)	3.99 (1.45)	4.16 (.94)
<i>Healthcare news items</i>												
Pro	Positive	Liberal	264	296	3.24 (1.98)	2.63 (1.55)	5.42 (1.18)	3.91 (2.30)	3.40 (1.60)	3.77 (1.42)	4.29 (1.21)	3.88 (.97)
Pro	Negative	Liberal	158	220	2.85 (1.85)	2.57 (1.51)	5.54 (1.13)	3.86 (2.33)	3.59 (1.59)	3.90 (1.36)	4.40 (1.17)	3.86 (.89)
Anti	Positive	Liberal	133	100	4.10 (2.08)	2.45 (1.51)	5.30 (1.24)	3.54 (2.33)	3.18 (1.60)	3.74 (1.38)	3.97 (1.35)	4.00 (1.00)
Anti	Negative	Liberal	120	111	3.98 (1.97)	2.46 (1.43)	5.37 (1.16)	3.58 (2.31)	2.90 (1.56)	3.65 (1.30)	4.04 (1.36)	4.05 (.91)
Pro	Positive	Conservative	225	247	3.10 (2.01)	2.63 (1.59)	5.60 (1.09)	3.64 (2.35)	3.46 (1.63)	3.84 (1.41)	4.41 (1.27)	3.91 (1.05)
Pro	Negative	Conservative	163	172	3.18 (2.03)	2.67 (1.54)	5.54 (1.16)	3.44 (2.48)	3.16 (1.53)	3.74 (1.35)	4.11 (1.30)	3.95 (1.05)
Anti	Positive	Conservative	116	73	4.09 (1.99)	2.63 (1.43)	5.24 (1.31)	4.22 (2.46)	2.89 (1.67)	3.70 (1.46)	3.87 (1.36)	4.0 (1.00)
Anti	Negative	Conservative	108	71	4.02 (1.99)	2.54 (1.53)	5.27 (1.28)	4.50 (2.55)	2.72 (1.56)	3.60 (1.45)	4.05 (1.44)	4.19 (.97)

Note: For every confirmation bias and negativity bias combination two headlines were formulated to match either a liberal or conservative news source (see Table 1). These headlines were randomly assigned to one of the two sources. Therefore, this table does not specify the exact wording of each headline but rather the combination of the three biases present in the headline.

## Appendix C

**Table C1.** Multilevel models explaining the likelihood of reading and selection across countries and topics.

	UK	UK	US	US
	Immigration	Health care	Immigration	Health care
<i>Likelihood of reading</i>				
Confirmation bias	22.23*** (0.83) <sup>a</sup>	15.65*** (0.76) <sup>b</sup>	22.65*** (0.85) <sup>c</sup>	11.25*** (0.81) <sup>b</sup>
Source bias	5.16*** (0.83) <sup>a</sup>	4.08*** (0.76) <sup>bc</sup>	4.85*** (0.85) <sup>ac</sup>	1.46 <sup>†</sup> (0.81) <sup>bc</sup>
Negativity bias	5.13*** (0.83) <sup>a</sup>	2.57*** (0.76) <sup>ac</sup>	3.92*** (0.85) <sup>bc</sup>	5.47*** (0.81) <sup>ac</sup>
Constant	31.51*** (1.12)	41.75*** (1.19)	36.29*** (1.21)	49.36*** (1.25)
ICC level	.2896323	.4197256	.3368317	.4043758
LL full model	-16,175.7	-15,894	-16,306.41	-16,059.36
<i>Selection</i>				
Confirmation bias	0.71*** (0.03) <sup>a</sup>	0.67*** (0.03) <sup>b</sup>	0.64*** (0.04) <sup>c</sup>	0.45*** (0.04) <sup>b</sup>
Source bias	0.26*** (0.03) <sup>a</sup>	0.19*** (0.03) <sup>b</sup>	0.18*** (0.04) <sup>b</sup>	0.05 (0.04) <sup>b</sup>
Negativity bias	0.15*** (0.03) <sup>a</sup>	0.21*** (0.03) <sup>b</sup>	0.11** (0.04) <sup>a</sup>	0.30*** (0.04) <sup>b</sup>
Constant	-26.45*** (1.01)	-26.97*** (0.95)	-27.17*** (1.10)	-26.31*** (0.99)
ICC level	1.03e-23	3.65e-24	2.33e-24	1.26e-23
LL full model	-4947.105	-4925.227	-5008.344	-5034.117

Note: Cells contain unstandardized regression coefficients with standard errors (SE).

<sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Means with differing subscripts within rows differ significantly at the  $p < .05$  level based on post-hoc coefficient comparison Chi-Squared tests.

## Appendix D

**Table D1.** Interaction effects of involvement and skepticism with selection biases.

		likelihood of reading	Selection
		<i>b</i> (SE)	<i>b</i> (SE)
Confirmation bias interaction with	political opinion strength	2.82 (.32)***	.05 (.01)**
	political skepticism	2.27 (.33)***	.07 (.01)***
Source bias interaction with	Frequency of source use	1.15 (.21)***	.06 (.01)***
	Media skepticism	.10 (.28)	.01 (.01)
Negativity bias interaction with	Interested in negative news	.54 (.32)*	.02 (.01)
	Need for entertainment	.89 (.36)*	.03 (.01) <sup>a</sup>
	Skepticism toward negativity in the news	-1.25 (.41)**	-.03 (.02)*

Note: Cells contain unstandardized regression coefficients with standard errors (SE).

<sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$