Persuading the Enemy:
Estimating the Persuasive Effects of Partisan Media with the Preference-Incorporating Choice and Assignment Design

Abstract:

Does media choice cause polarization, or merely reflect it? We investigate a critical aspect of this puzzle: how partisan media contribute to attitude polarization among different groups of media consumers. We implement a new experimental design, called the Preference-Incorporating Choice and Assignment (PICA) design, that incorporates both free choice and forced exposure. We estimate jointly the degree of polarization caused by selective exposure and the persuasive effect of partisan media. Our design also enables us to conduct sensitivity analyses accounting for discrepancies between stated preferences and actual choice, a potential source of bias ignored in previous studies using similar designs. We find that partisan media can polarize both its regular consumers and inadvertent audiences who would otherwise not consume it, but ideologically-opposing media potentially also can ameliorate existing polarization between consumers. Taken together, these results deepen our understanding of when and how media polarize individuals.

Justin de Benedictis-Kessner[1]
Postdoctoral Research Associate, Boston Area Research Initiative, jdbk@iq.harvard.edu

Matthew A. Baum
Professor, Harvard University, John F. Kennedy School of Government,
Matthew_Baum@harvard.edu

Adam J. Berinsky
Mitsui Professor, Massachusetts Institute of Technology, berinsky@mit.edu

Teppei Yamamoto
Associate Professor, Massachusetts Institute of Technology, teppei@mit.edu

---

Recently, pundits, politicians, and ordinary citizens have expressed growing concern over political polarization in the United States and the media's purported role in exacerbating the problem. In a January 2018 interview, former President Barack Obama observed that viewers of Fox News are "living on a different planet" from National Public Radio listeners. He added that "We are operating in completely different information universes… At a certain point, you just live in a bubble. And that's part of why our politics is so polarized right now."[2]

Perhaps, as Obama suggests, partisan news media *cause*, or at least exacerbate, polarization between liberals and conservatives. This perspective places the blame at the feet of the media: by presenting one-sided versions of issues, partisan media outlets like Fox News on the right and MSNBC on the left drive Americans apart. These slanted news sources persuade individuals that a particular one-sided version of issues represents the unvarnished truth.

A second possibility is that in a world of fragmented media, the more polarized our country becomes, the more pre-existing political attitudes drive people's choices of news outlets. If so, this represents a clear example of selective exposure (e.g., Lazarsfeld, Berelson, and Gaudet 1948) – the tendency to seek out information that reinforces existing views.

These competing perspectives on the relationship between the media and the public suggest very different roles for partisan media in the modern political system. Do like-minded individuals seek out partisan news sources that support their pre-existing beliefs – resulting in a tendency toward a particular perspective among consumers of ideologically narrow partisan

---

[2] Chandran, Nyshka. 2018. "Obama to David Letterman: Media Is Dividing Americans." *CNBC*. Online: https://www.cnbc.com/2018/01/12/former-president-barack-obama-warns-on-polarizing-media-us-electoral-system.html

media outlets via self-selection? Or do consumers of partisan news alter their views to reflect information encountered in such outlets, resulting in increased polarization between consumers of liberal and conservative news? In the former instance, media choice *reflects* polarization; in the latter, media choice *causes* it. Related, is the rise of partisan media a cause or an effect of public polarization? If the former, how might partisan media exacerbate the polarization of opinion?

We investigate whether and how partisan media contribute to attitude polarization by assessing the extent to which such media can persuade consumers with differing pre-existing media preferences. That is, do partisan media cause individuals to change their attitudes in line with the valence of the media message? Adopting a new experimental design, which we call the Preference-Incorporating Choice and Assignment (PICA) design, this study combines traditional experimentally randomized exposure to media with a more organic choice process. Our PICA design expands upon the patient preference trial (PPT) framework by not only measuring media consumption preferences but also by accounting, within the same procedure, for the effects of both forced exposure to media and choice among media options. Our design therefore allows us to estimate the degree of selective exposure, while simultaneously disaggregating our estimates of the persuasive power of the media by individuals' preferences for particular media sources.

We estimate the degree of polarization originating from selective exposure by comparing opinions among different groups of news consumers. We distinguish between those individuals who would, if given the choice, read a given partisan media story and those who would elect *not* to read partisan news. This allows us to compute the degree of polarization that exists absent exposure to ideologically dissonant media.

We also compute the treatment effect of partisan news on political opinions and behavior, disaggregated into a series of choice-specific treatment effects. We thus demonstrate the heterogeneity of partisan media's power on different groups of news consumers. We show that partisan media are most likely to persuade individuals who would choose to consume entertainment media rather than partisan media. The treatment effects after one instance of exposure among these inadvertent partisan media consumers are substantial when compared to real-world polarization, reaching close to half the size of existing attitudinal differences between partisan news consumers from opposing sides of the political spectrum.

Those individuals who *do* prefer partisan media are also persuadable, albeit to a limited extent. Consuming opposing partisan media can decrease polarization under some circumstances. We therefore provide evidence that while selective exposure – self-selection by readers into ideologically consonant partisan news sources – limits the exposure of ideological extremists to media that causes them to moderate their opinions, partisan media may ameliorate this polarization. However, we also show that the behavioral effects of partisan media are strongest among consumers of MSNBC, indicating that the downstream effects of exposure to partisan media are likely to have ramifications for how people share information with others in their lives. Additionally, in an advance over other studies that have employed the PPT framework, our design also enables us to estimate the sensitivity of these results to discrepancies between people's stated media preferences and their actual choices, an important source of potential bias unaccounted for in prior research. These sensitivity analyses highlight the consequences of relying on naïve treatment effect estimates in experimental paradigms where there is a danger of large discrepancies between survey-expressed preferences and actual choices. Finally, while we report results based on a single news topic in the main text, in Appendix E we present

replications employing three additional news topics, survey modalities, and population samples, thereby demonstrating that our findings are generalizable.

Polarization as a Cause or Effect of Persuasion?

There is broad agreement that Americans increasingly have *opportunities* to consume unbalanced news. For instance, the typical U.S. household now receives about 190 television channels, more than a tenfold increase since 1980. The options for different news sources on the internet are even more numerous. This explosion of media outlets has vastly increased the choices available to consumers and allowed for the development of ideological "niche" news outlets (Hamilton 2005). Partisan media are widely accessible (Baum and Groeling 2010; Groeling 2013) and often present news that is more beneficial to one party than the other (Baum and Groeling 2008). The public widely recognizes this partisan slant, routinely associating Fox News and MSNBC with heavy biases toward the Republican and Democratic parties, respectively (Ladd 2012).

But how do such media actually influence the political preferences of Americans? Whenever social scientists observe a difference between actors exposed to different stimuli in a context where it is not possible to control who gets the treatment, the question arises as to whether any effect results from the treatment itself, or from pre-existing differences between the actors exposed to different treatments. This is the problem of self-selection. Many studies designed to determine the effects of partisan media on polarization are thus ill equipped to disentangle pre-existing differences from the effects of media treatments. The observed differences in attitudes among individuals exposed to partisan information could stem from

variation in either the information itself, or the kinds of individuals who choose to expose themselves to it.

Most research has addressed only one of these concerns. Some studies treat polarization primarily as a *cause* of media fragmentation, through individuals' decisions to selectively expose themselves to partisan media. Others treat polarization as an *effect*, focusing on the possibility that media fragmentation enhances political polarization because partisan media persuade individuals to adopt more extreme political views. We discuss both approaches, before proposing a corrective for individuals' tendencies to inaccurately recall their media consumption.

Integrating Selective Exposure with Persuasion

Research dating back to the 1940s (e.g., Lazarsfeld, Berelson, and Gaudet 1948; Campbell et al. 1960) has theorized that selective exposure to information causes divergent political opinions. This research found evidence of such selective exposure to partisan information in media consumption patterns.

Over the last decade, researchers have more precisely identified some of the conditions under which selective exposure occurs. Many researchers (Arceneaux et al. 2012; Gaines and Kuklinski 2011; Iyengar and Hahn 2009; Stroud 2011) have shown that Democrats and Republicans – especially the strongest (Iyengar et al. 2008; Kim 2009) and most politically engaged (Bennett and Iyengar 2008) partisans – prefer news that supports their pre-existing beliefs. The implication is that political preferences shape media choice, albeit with some limitations due to increasing online information consumption (Brundidge 2010; Messing and Westwood 2014; Mummolo 2016).

Widespread self-selection into partisan media streams is troubling for democracy because it could lead to increasingly insular partisan information silos among the public (Sunstein 2001; Negroponte 1995; Pariser 2012; but see Gentzkow and Shapiro, 2011; Leeper, 2014; Prior 2007). If individuals only expose themselves to one side of an argument, they may disproportionately reinforce their attitudes, thereby becoming less inclined to compromise or moderate their views.

This line of research, however, does not account for persuasion by the media. Recent innovations in our understanding of human information processing have upended the longstanding scholarly view that people are largely immune to persuasion (e.g., Lazarsfeld et al. 1948; Berelson, Lazarsfeld and McPhee 1954; Campbell et al. 1960). Zaller (1992), for instance, argues that researchers have looked for persuasion in the wrong place. He asserts that it is the *moderately* politically aware – not their more highly aware counterparts – who are most amenable to persuasion. These individuals pay enough attention to encounter political messages but not so much that they can effectively counter-argue information that challenges their pre-existing beliefs. Those with stronger beliefs are more likely to engage in motivated reasoning: discounting the arguments with which they disagree, while giving undue weight to arguments with which they already agree (Bolsen, Druckman, and Cook, 2014; Kunda, 1990; Leeper and Slothuus, 2014; Taber and Lodge, 2006).

Other research has shown that media can be persuasive, at least within controlled experiments. Scholars have begun to identify conditions under which persuasion is more or less likely to occur (Levendusky 2013b; Feldman 2011b; Bullock 2011) as well as under which partisan media may provoke a backlash against the perspective being advocated (Zaller 1992), the outlet presenting the argument (Arceneaux, Johnson, and Murphy 2012; Coe et al. 2008; Reid 2012), or even the media more generally (Ladd, 2012).

Promise and Limitations of Existing Research

To date, in studying media effects, scholars have struggled to resolve the problem of self-selection underlying the theory of selective exposure. Even controlled experiments designed to identify the effects of partisan media on polarization cannot determine whether real-world-observed differences in attitudes among individuals exposed to different information stem from differences in the information or in the individuals choosing to expose themselves to it.

Typical experiments begin by assessing participants' political partisanship and ideology. Researchers then follow one of two different general designs. In the first, *forced*-exposure design, researchers present participants with a single randomly assigned news item, and then ask for their opinions on political issues (see e.g., Feldman 2011; Levendusky 2013b). This design allows for causal investigation of persuasion by the single source. Yet, it may produce heterogenous effects, depending on respondents' underlying preferences about alternative news sources, thereby making it difficult to generalize to real-world polarization.

In the second, far less common, *free-choice* design, researchers present respondents with multiple news items from which to choose, and then ask their opinions on issues over which partisans usually disagree (see e.g., Ellithorpe 2013; Knobloch-Westerwick and Kleinman 2012; Knobloch-Westerwick and Meng 2009). This allows investigators to determine the extent to which participants choose sources compatible with their preexisting beliefs, as well as to measure differences in attitudes between participants who consume different news sources. However, the lack of controlled randomization prevents researchers from identifying a media persuasion effect because the design does not account for selection bias.

Recent research incorporates individual preferences when estimating the persuasive power of the media. Arceneaux and Johnson (2013; Arceneaux et al. 2012) incorporate elements of both designs in a single study following recommendations from Gaines and Kuklinski (2011). In their "selective exposure experiment", Arceneaux et al. (2012) randomly treat half of their participants with a liberal, conservative, or entertainment news story, and then observe the effects of that treatment on subsequent attitudes (the forced-choice component). They allow the other half of their participants to choose any one of the same three program choices (the free-choice component). They then compare the observed effects on attitudes towards the media (Arceneaux et al. 2012) and policy opinions (Arceneaux and Johnson 2013). Because this combined design does not capture common information on media preferences from both the free-choice and forced exposure groups of respondents, they cannot estimate the causal effect of self-selected exposure to one media option rather than another, despite randomization between forced exposure and free choice. Instead they analyze the free-choice group of respondents as a single treatment group, limiting the conclusions they can draw.

In a separate experimental design, Arceneaux and his colleagues (Arceneaux et al. 2012, p. 183; Arceneaux and Johnson 2013, p. 85) incorporate the measurement of media preferences prior to the forced-exposure procedure. These "patient preference designs," or "participant preference experiments", measure respondents' preferences for consuming media, but do not incorporate choice. Levendusky (2013a; 2013b) employs a similar design and separately estimates persuasion among individuals who prefer like-minded and oppositional partisan media. Assuming respondents' stated media preferences match their actual media choices, this design

can provide a causal estimate of the effects of media exposure conditional on media choice. [3] However, people's preferences may differ from their actual choices when given media options beyond just news. Moreover, given the difficulty individuals have in accurately recalling their own past media consumption (Prior 2009; 2013), it is also important to account for the potential discrepancy between self-reported and real-world viewing behavior. Revising their design, as delineated below, allows us to better understand and measure whether and to what extent estimates of the persuasive effects of partisan media depend on untestable assumptions about survey self-reports.

Design

Our study resolves the tradeoff between the reliable measurement of preferences offered by selective exposure studies, on the one hand, and the identification of persuasion effects among subgroups of the population that do or do not consume a given media option, on the other. We do so by using our new PICA design (Figure 1). In this design, we randomly assign participants to either a forced exposure or free choice treatment condition. Each of the two conditions

---

[3] This is in addition to the assumption that media preferences can be proxied by self-reported ideology. Arceneaux et al. (2012) expose research subjects to partisan media and disaggregate results based on the match (or mismatch) between the respondent's ideology and the leanings of the media that they consume. This assumes that experimental subjects accurately report their ideological predispositions in laboratory studies, and that ideological predispositions determine real-world media choices. Some research (in the former case, see e.g. Zell and Bernstein, 2014) calls both assumptions, but especially the latter linkage, into question.

individually resembles procedures separately employed by Arceneaux and his colleagues (Arceneaux and Johnson 2013; Arceneaux, Johnson, and Murphy 2012; Levendusky 2013a, b; Gaines and Kuklinski 2011). But the PICA design combines them into a single framework. Participants in both conditions read news reports from either Fox News, MSNBC, or an entertainment network (the Food Network). We derive all reports from real online news stories, which we edited to equalize length and framing.[4] For the partisan media treatments, the articles discussed either the economic, social, safety, or public health effects of legalizing marijuana.[5] On each topic, the Fox News and MSNBC articles were nearly identical except for text that was either supportive of (MSNBC) or opposed to (Fox) marijuana legalization. The Food Network

---

[4] We pretested all news articles used in the experiment and asked pretest respondents for their perceptions of the ideological direction of the articles, as well as respondents' understanding of the issue after reading the articles. We found that respondents perceived a large degree of divergence in the ideological leanings of the articles but did not have significantly different understanding of the issues after reading articles from opposite sides of the partisan news spectrum. We present the full text of all articles in Appendix C.

[5] We chose marijuana legalization as the policy subject of the news articles due to the relatively small partisan gap in support for the issue, with partisan elites from both parties expressing a mix of support for and opposition to legalization. This may limit respondents' motivated reasoning when consuming information about the topic (Bolsen, Druckman, and Cook, 2014). However, we also find patterns largely similar to our main results for three additional policy areas (Appendix E).

articles discussed how to save money while grocery shopping, tips for buying meat, and how grocery stores might change in the future.
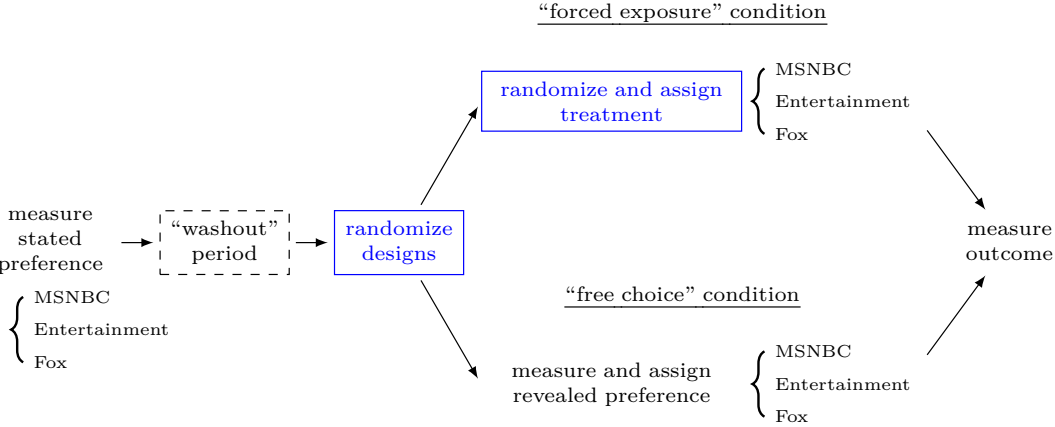

Figure 1: Preference-Incorporating Choice and Assignment (PICA) Experimental Design

The PICA design builds upon the general framework known in the medical literature as the patient preference trial (PPT). As noted, some existing political science research employs PPT frameworks, incorporating participants' preferences over treatment options (Torgerson and Sibbald, 1998) to examine the effects of experimental treatments that may vary depending on those preferences (Gaines and Kuklinski, 2011; Leeper, 2017). This step makes it possible to avoid relying on self-reported ideology to identify people's media preferences. Unlike these existing proposals, however, our design also incorporates the stated preferences over treatment options for *all* respondents, enabling us to combine information from the forced exposure and free choice arms for more nuanced inference. The PICA design thus unifies key elements from Arceneaux and Johnson's two designs as well as the previous two-arm PPT designs.

The overall advantage of the PICA design is therefore twofold. First, the randomization of participants into either the forced exposure or free choice conditions enables us to draw inferences about the persuasion effects of pro-attitudinal and counter-attitudinal political news

among participants who if given a choice would consume those media, as well as among those who would choose non-political media. It also allows us to distinguish between consumers of liberal and conservative partisan media, rather than combining these two groups and estimating the combined net effects of pro- and counter-attitudinal consumption (as Arceneaux and Johnson 2013 do). Second, unlike previous studies, our design measures both stated media preferences and actual selective exposure to the media options. For subjects who are assigned to the free choice condition, we can empirically measure any discrepancy between their stated and actual media preferences. This allows us to undertake sensitivity analyses for the estimated persuasion effect of particular media among subjects who prefer particular partisan news and those who prefer non-political media.[6]

We administered the experiment via an Internet-based survey to a national sample of 7,298 respondents through Survey Sampling International (SSI).[7] This large sample allows us

---

[6] Importantly, Gaines and Kuklinski (2011) show that one can identify the treatment effect conditional on actual selective exposure without any additional information – such as stated treatment preferences – if there are only two treatment options (see Knox et al., 2019, for a formal discussion). Our study, however, requires at least three media treatment conditions: pro-attitudinal and counter-attitudinal political media and non-political media. The PICA design addresses the identification problem by use of stated preferences.

[7] SSI recruits participants through various online communities, social networks, and website ads. When deploying a particular survey, SSI randomly selects participants for survey invitations. We asked SSI to recruit a target population that matched the (18 and over) census population on

sufficient power to detect the persuasive effects of media among different groups. We follow the protocol proposed in Knox et al. (2019) and summarized in Figure 1. First, early in the survey we measure the stated preference of all respondents over the three options. Specifically, we asked: "If you were given the choice of news articles from the following three sources to read, which of the three would you choose?" We presented each choice with an accompanying logo of the network, while randomizing the order in which the options appeared on the screen.

This choice environment is obviously not entirely realistic. The internet provides access to thousands of different news sources, and, in fact, the average American visits 89 different web domains a month (Nielsen, 2010). But to make the experiment tractable and to gain some control over the content of the programs, it was necessary to conduct it in a stylized environment.[8] Doing so could, admittedly, introduce external validity concerns, as people's preferences may exhibit more consistency in our experiment than in reality. People's preference for partisan news rather than an entertainment option may change if there are more entertainment options. But our sensitivity analyses, which identify the extent to which estimates of partisan media persuasion

---

education, gender, age, geography, and income. The result is a diverse national sample, albeit not a probability sample.

[8] In pretesting of our experiment and in one replication reported in Appendix E, we tried offering participants multiple entertainment options, but found that such a large majority of people selected entertainment media that continuing to do so would have required a dramatic increase in our sample size in order to gain sufficient statistical leverage, thereby rendering the study cost prohibitive.

could be affected by discrepancies between stated and actual preferences, can partially mitigate such concerns by providing conservative estimates of media persuasion.[9]

We then move to a "washout" period, where we asked participants to answer demographic questions not directly related to the media choice, and to complete distraction tasks. The goal was to minimize the possibility that measuring stated preferences might contaminate respondents' voluntary choices of stories to read in the free choice condition. These distraction tasks enhance external validity by allowing for the instability of preferences over time.

Next, we randomized subjects with equal probability into the forced exposure and free choice conditions. We then randomly assigned those in the forced choice arm to read either the Fox News, MSNBC, or entertainment story, each with probability 1/3. For those in the free choice arm, we instead asked, "Which of these three articles would you like to read now?" We presented these participants with the same three options. Subjects in the free choice arm then read the single story they chose. Finally, we asked a series of questions measuring subjects' opinions about, as well as their desire to share or learn more about, marijuana policy, as described in more detail in the results section below.

Methodology

---

[9] Of course, an entirely separate issue may also arise from the potential for consumers' revealed choices to be different over time (e.g., Sood and Lelkes, 2018).

We estimate the degree of persuasion using the average choice-specific treatment effect of the media stories (ACTE) following Knox et al. (2019).[10] In the current study, the ACTEs of interest constitute the average effects of exposure to one story relative to another among those who would prefer to read Fox News, MSNBC, or the entertainment article. We focus here on the difference between the two partisan outlets, which most directly estimates the degree of political polarization due to biased partisan media, and in particular the effect of these specific articles on opinions about marijuana legalization.[11] The relationships we report below thus represent the causal effects of treating individuals with Fox News as opposed to MSNBC, within each choice-specific group.

---

[10] As described in Knox et al. (2019), the ACTE represents the average causal effect of one treatment versus another treatment among those participants who would choose a treatment option – be it the first, second, or another treatment – if given the opportunity to choose. This contrasts with estimation of treatment effects conditional on ideology or partisanship of the viewer, or the match between ideology and the ideological orientation associated with a given treatment option, which are the conditional average treatment effects calculated by Arceneaux et al. (2012) and others. We compute alternative treatment effects by partisanship and ideology in Tables B-3 and B-4 in the Appendix.

[11] Because our experiment consists of three treatment options, we can estimate three different contrasts for each of these choice subgroups: the comparison between each of the two partisan media options and the entertainment media, and the comparison between the two partisan media options.

We take two approaches for the inferences about our ACTEs of interest. First, we use the stated media preferences that we measure at the beginning of the experiment as an approximate measure of actual media choices and estimate the "naïve" ACTEs as the difference between the average opinions among subjects assigned to Fox News and the average among subjects assigned to MSNBC within the forced exposure condition.[12] However, our design also allows us to go beyond this naïve estimate. In particular, our two-arm PICA design allows us to use additional information from subjects assigned to the free choice condition to conduct sensitivity analyses via the nonparametric bounds proposed by Knox et al. (2019) and estimate the degree to which the divergence of stated and actual media preferences can bias our naïve estimates of the ACTEs.

Conceptually, these sensitivity analyses involve two steps. First, we can assume the extreme (and unlikely) scenario where respondents whose actual media choices differed from their stated choices could hold *any* opinion about the issue. Under this agnostic assumption, we

---

[12] As discussed in Knox et al. (2019), these represent naïve estimates of the ACTEs and will be biased unless the deviation between respondents' stated media preferences and their actual choices are simply stochastic noise. In fact, even stochastic noise has pernicious consequences for inference if we are interested in both the ACTEs per se, and in *differences* among them. Specifically, classical measurement error in the stated preferences will cause the difference between two naïve ACTE estimates to be a downward biased estimate of the difference in the true ACTEs. This immediately follows from the well-known connection between measurement errors and attenuation bias. However, these quantities are a convenient approximation, which we can estimate using the data from the forced exposure arm of our experiment alone, as do many previous experimental studies of media persuasion effects, such as Arceneaux et al. (2012).

can calculate the maximum and minimum possible values of the ACTEs for each of the outcome measures. The resulting values represent our "no-assumption" upper and lower bounds for the possible true value of the ACTE, that is, the interval within which we can be confident that the ACTE lies. In the second step, we explore a more plausible "middle ground" by modifying the agnostic assumption to fit a more realistic scenario: we continue to assume that there is a discrepancy between the stated and actual choice groups in their response to a treatment, but we hypothesize the size of the discrepancy to be less than a certain threshold. Following Knox et al. (2019), we call this hypothesized upper bound on the discrepancy the *sensitivity parameter* and denote it by ρ.[13] We then derive the bounds on the ACTE using a procedure similar to the first step for varying levels of the sensitivity parameter. These bounds represent the largest and smallest that our treatment effect estimates could be, under the restrictions imposed by a given level of ρ. Finally, we assess the threshold value of ρ at which the bounds contain zero and cease to be informative about the sign of the ACTE. A high value of this threshold ρ value would

---

[13] This assumption is more reasonable than the one underlying the naïve estimator, but, unlike the no-assumption bounds, allows the stated preference to be informative with respect to the actual choice to the extent permitted by the given value of ρ. More precisely, ρ represents the amount of deviation in potential outcomes between stated preferences and actual media choice in units of the outcome measure. For instance, if $\rho = 0.10$ for our dependent variables, then the deviation in potential outcomes caused by the instability in preferences is approximately ten percent of the range of the outcome variable. See Knox et al. (2019) for more detailed discussion.

imply that our conclusion based on the naïve estimate is robust to the possible bias resulting from a relatively large discrepancy between stated and actual choices.

Results

We first examine evidence for selective exposure by focusing on subjects assigned to the free choice condition (i.e., the bottom portion of Figure 1) and analyzing their revealed media preferences and reported opinions. Our results indicate that polarization in the electorate does indeed correspond with polarization in media consumption. Across all categories of partisanship, 30% of people chose to read the Food Network article, 41% chose Fox News, and 28% chose MSNBC. However, these choices varied significantly when we looked at this same breakdown by party. Among Democrats, 31% preferred the entertainment option, 24% preferred Fox News, and 45% preferred MSNBC. Among Republicans, 28% preferred entertainment, 61% Fox News, and only 12% MSNBC. Among those with no preference for either party, 42% preferred entertainment, 34% Fox News, and 23% MSNBC.[14] These results demonstrate a strong separation in choices between the ideological left and right: Democrats were 33 percentage

---

[14] We classify partisans as those who strongly or not so strongly identify with a political party, as well as those who lean towards one of the parties. Independents are those who indicate no party preference on either an initial question or a follow-up question asking whether they lean towards one party or the other.

points more likely than Republicans to prefer left-leaning MSNBC, while Republicans were 37

percentage points more likely than Democrats to prefer right-leaning Fox News.[15]

Polarization by Selective Exposure

      We also find that selective exposure corresponds with differences in political opinions

and behaviors. To measure political opinions, we asked respondents ten questions about

marijuana and drug policy. We asked them if they agreed or disagreed with the following

statements, "The legalization of marijuana leads to fewer people using more serious drugs, such

as heroin and cocaine" and "Marijuana use increases violent crime," corresponding to the articles

about public safety and health consequences of legalization. Similarly, we asked respondents

whether legalization would make the economy better or worse, which corresponded directly to

the interventions about the tax and economic implications of legalization.[16] Other questions

addressed feelings regarding marijuana more broadly. Respondents placed themselves on 7-point

scales between strongly agreeing or strongly disagreeing with the phrases: "Government efforts

to enforce marijuana laws cost more than they are worth," "Using marijuana is morally wrong,"

"Marijuana should be legal for medical use," "Marijuana use is a serious problem today," and

"Marijuana should be legal for recreational use." Finally, respondents placed themselves along

another seven-point scale between, at one end, whether habitual drug use should be thought of as

---

[15] People who preferred different media options also varied across a range of demographic

characteristics (see Table A-1 in the Appendix).

[16] Exact wording was, "If the sale and possession of marijuana were made legal, do you think it

would make the economy better, make the economy worse, or have no effect on the economy?"

a criminal offense or, at the other, a medical problem.[17] They then placed several substances, including marijuana, on scales from very dangerous to very safe. We recode all opinion variables to 0-1 intervals, with the most liberal or permissive of legalization at 0 and the most conservative or opposing of legalization at 1. To capture variation in underlying latent attitudes and beliefs about marijuana, we form an additive index of these ten opinion questions. We use this index as the primary dependent variable on which we assess polarization and persuasion.[18]

We also asked respondents to indicate their likelihood of forwarding, discussing, posting to social media, or seeking out additional information on the story they had just read. We combined these four measures into an additive index of sharing behavior, which ranges from 0 (least likely to share) to 1 (most likely to share).

Political opinions and behavior differed across the three groups of respondents who self-selected into different media options. Figure 2 shows the average responses among the

---

[17] Exact wording was, "Some people feel that habitual drug use should generally be considered a criminal offense and dealt with through the courts and criminal justice system. Suppose these people are on one end of the scale, at point 1. Others think that habitual drug use should generally be considered a substance abuse and addiction problem and dealt with through the medical and mental health systems. Suppose these people are at the other end, at point 7. And of course, some other people have opinions somewhere in between. Where would you place YOURSELF on this scale?"

[18] The scale is internally consistent, with an alpha of 0.89. We present the full results on each of these individual measures in Appendix A (for free-choice respondents) and Appendix B (forced-choice respondents).

respondents assigned to the free choice arm (i.e., the bottom portion of Figure 1), separated along the x-axis by media preference group.[19] We plot our attitudinal and sharing indexes in the left- and right-hand panels, respectively. On the left side of each panel we show the responses among those who preferred to (and did) read the entertainment article. People who both preferred and chose Fox News (in the middle of each panel) reported opinions that were 0.16 greater along the 0-1 scale of our attitudinal index than those who both preferred and chose MSNBC (on the right of each panel). This difference is equivalent to .72 standard deviations for this outcome measure. On our sharing index, those who preferred and read Fox reported intended behaviors that were 0.01 greater than those who preferred and read MSNBC – a substantively and statistically insignificant difference. Together these free-choice results show that people who consume different media report different political attitudes but similar behaviors.

---

[19] We present these estimates of opinion among free choice respondents in tabular format in Appendix A. These average opinions also match those of respondents in the forced choice arm of our experiment who were randomly assigned to read the media for which they indicated a preference. We show the comparison between these groups in Appendix Table A-4.
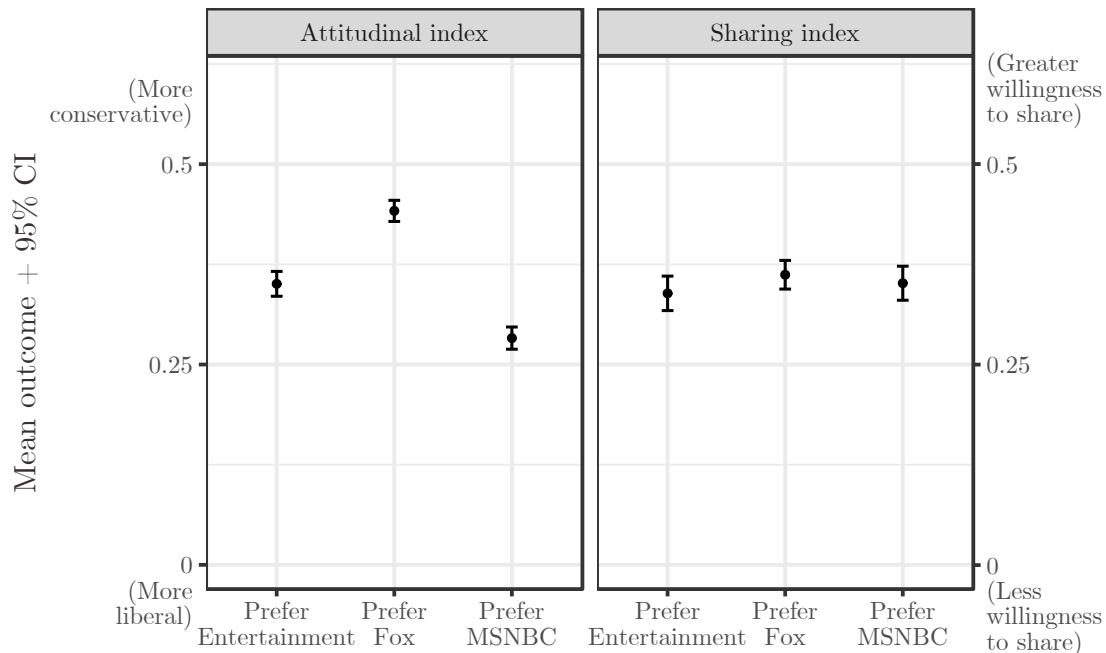
Figure 2: Average Responses in Free Choice Condition. Points indicate mean responses for each outcome variable and 95% confidence intervals within each stated preference subgroup. Outcome variables are recoded to the unit scale with more conservative opinions in the positive direction and more liberal opinions in the negative direction for the attitudinal index, and with higher reported willingness to share stories in the positive direction and lower willingness to share stories in the negative direction for the sharing index.

Partisan Media's Persuasive Effects

The pattern described above reflects only the descriptive differences between groups of respondents who self-selected into each media treatment. This conflates self-selection and persuasion and cannot be interpreted as polarization necessarily *caused* by partisan media sources.

The forced choice arm of our experiment (the top portion of Figure 1) – where we randomly assign respondents to partisan media or entertainment – accounts for the persuasive effect of media exposure. To measure changes in political opinions, we disaggregate these

respondents by the type of media that they would choose if given a choice.[20] The results

demonstrate substantial added explanatory value over simpler comparisons more commonly

employed in the literature, such as that between partisan groups.[21] Here we present our treatment

effects on the aforementioned 10-question additive index, to assess the effect of forced exposure

to Fox News rather than MSNBC.[22]

Partisan media have a strong impact on respondents' opinions in the forced-choice arm.

In Figure 3, we show the estimated effects of treating respondents with Fox News rather than

MSNBC, conditional on media consumption preferences, and based solely on the respondents

assigned to the forced choice condition and their stated media preference.[23] The left-hand panel

plots the treatment effects with 95% confidence intervals for our attitudinal index along the y-

axis, separated by media preferences along the x-axis. Effects above zero represent persuasion in

the conservative direction on the 10-attitude-question index, while effects below zero represent

persuasion in the liberal direction.

Among respondents who would prefer to read entertainment rather than news – shown on

the left sides of both panels in Figure 3 – reading Fox instead of MSNBC yields statistically

significant movement in the conservative direction on the attitudinal index. Along the 0-1 scale,

---

[20] We disaggregate by stated preferences here, which are equivalent to the naïve estimates for the

ACTE.

[21] However, we also conduct the comparison of treatment effects by reported partisanship and

ideology in Appendix B. These results are largely similar to our primary results.

[22] Full results for all ten attitudinal measures are in Appendix B.

[23] We show these results numerically in Table B-2 of Appendix B.

reading Fox causes these entertainment-preferring respondents to report opinions that are four percentage points more conservative than if they had read MSNBC. This demonstrates the substantively large persuasive effects that partisan media may have on attitudes of those who would not ordinarily consume these news sources.

Among respondents who would choose Fox if given the choice – plotted in the center sections of both panels – the persuasive effect is similar to that for entertainment consumers. Respondents who prefer Fox reported opinions that are three and a half percentage points more conservative (on the 0 to 1 scale) if they read Fox than if they read MSNBC. This effect is statistically significant. So, exposure to more partisan news can sway the opinions of even those respondents who are already exposed to some degree of partisan news.

Among respondents who prefer MSNBC – plotted as the rightmost line within each of the panels in Figure 3 – the persuasive effect of reading Fox rather than MSNBC was similar (in a conservative direction) but smaller and statistically insignificant.
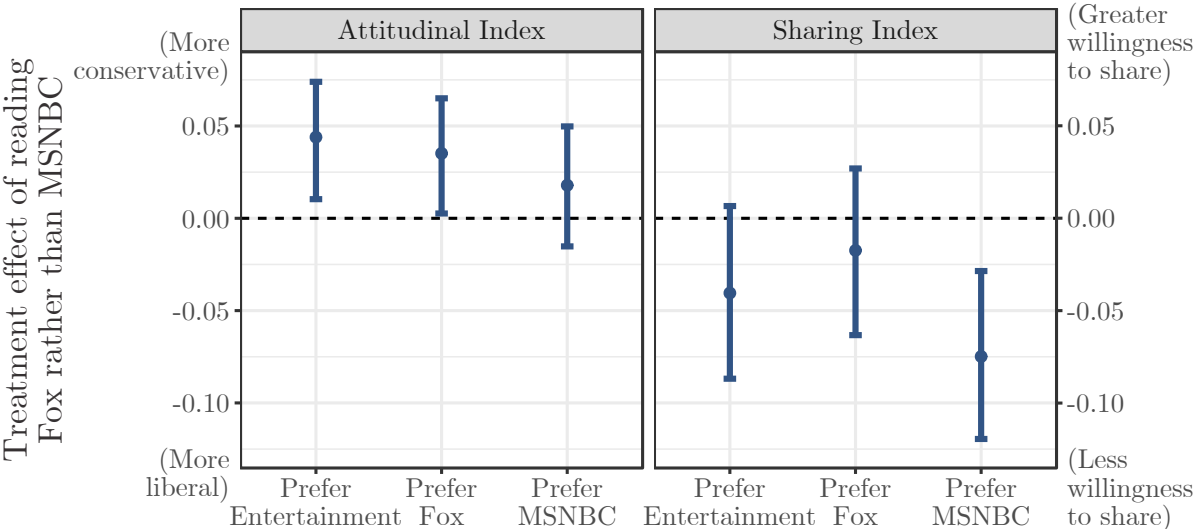

Figure 3: ACTE Estimates Based on Stated Media Preferences. Points indicate treatment effects of watching Fox rather than MSNBC, which are estimated as the difference in means between these two groups in the forced exposure arm of the experiment.

Together, these results show that partisan news is persuasive, albeit not for all consumers. In other words, partisan media can move the attitudes of respondents exposed to a given message – both those who choose it, and those who would ordinarily not consume political news – in the direction the message advocated. The effects were most consistent among those who preferred entertainment. Among these readers, we found effects in the expected direction for every individual attitudinal question as well as a statistically significant effect on the aggregate index. Among readers who preferred Fox News the effects remained fairly strong and were also statistically significant for our attitudinal index. Finally, for those who preferred MSNBC the effects remained in the expected direction but were somewhat smaller in magnitude and statistically insignificant.

We also found that partisan news has different effects across different subgroups of readers. That is, the media preferences of individuals condition the media's persuasive effects. For individuals who preferred entertainment, partisan media powerfully polarized attitudes. Contingent on exposure, these individuals appear to be most subject to influence by partisan media. However, we also found persuasion among respondents who prefer partisan news. This suggests that partisan media can be persuasive, though perhaps less so because the opinions of their consumers tend to be more solidified and so more resistant to persuasion.

The right-hand panel of Figure 3 turns from attitudes to behavior, by presenting the treatment effects on our sharing index, with positive effects representing a greater intent to share the news story. Across all subgroups, reading Fox News rather than MSNBC had a negative effect on sharing. Respondents were more likely to report a willingness to share the articles after reading MSNBC than after reading Fox News. Reading the Fox News article instead of the MSNBC story reduced respondents' reported willingness to engage in sharing behaviors by

between 0.02 and 0.07 along the unit scale for our three subgroups of media consumers. This effect was statistically significant for readers that preferred MSNBC, but not for those that preferred entertainment or Fox News. This indicates that, among those people who preferred MSNBC, exposure to pro-attitudinal media increased their propensity to share its content relative to exposure to counter-attitudinal media.

Overall, the persuasive effect of partisan media is strong across a number of political outcome variables. While other research has suggested that partisan media can induce a backlash among individuals who hold opposing preferences, we find that even counter-attitudinal partisan media can be persuasive. Moreover, such effects are not limited to attitudes. They also appear to affect socially significant political behaviors, such as sharing content. Those who *preferred* either MSNBC or entertainment media were more likely to report an intent to share content after actually consuming MSNBC than after actually consuming Fox News. Our experimental procedure enables us to detect where these persuasive effects occur across different groups of media consumers.[24]

Polarization from Both Selective Exposure and Persuasion

The results thus far do not directly tell us how the persuasive effects of partisan media might bring the attitudes of their consumers closer together in the real world. To put these results in context, we leverage evidence from both the forced exposure and free choice conditions of our

---

[24] Note that these subgroup differences do not represent *causal* differences – i.e. people's media preferences causing differential persuasion – but rather *descriptive* moderation of our main treatment effect by the stated preferences of media consumers.

PICA design and simulate how our estimated persuasion effects might change the existing levels of partisan polarization. As a baseline for "real world" levels of existing polarization, we first use responses from subjects in the free choice condition to measure the existing differences in opinions between the groups that chose opposing partisan media. Then, using the ACTE estimates obtained from the same media-preference group in the forced choice condition, we see if a certain amount of "treatment" might at least partially bridge (or widen) these gaps – that is, by hypothetically forcing those individuals to consume opposing media. Specifically, our multi-arm design allows us a window into this hypothetical world by comparing existing attitude polarization to the situation where we expose individuals to the persuasive power of media from the other side.

Figure 4 presents the gaps in opinion between subgroups in the free-choice arm of our experiment along with the estimates of their opinions had we instead treated them with counter-attitudinal media. We plot the point estimates and corresponding confidence intervals for respondents who read their freely chosen media with filled black circles, and estimates of their opinions if treated with the opposing media with open triangles. We again present the attitudinal and sharing indexes in the left- and right-hand panels, respectively, and separate the subgroups of media consumers along the x-axis.

Our experiment indicates that forcing people to read news from the "other side" generally moderates the opinions of partisan media consumers, thereby reducing polarization. On our attitudinal index, treatment from opposing media reduced the opinion gap between respondents who preferred Fox versus MSNBC. We can apply the statistically significant treatment effect of 0.035 among those who prefer Fox News and the smaller and insignificant effect of 0.018 among those who prefer MSNBC to the average outcomes among those two groups in the free-choice

arm. Treating respondents that prefer Fox News with the MSNBC article and vice versa would reduce the opinion gap in the free choice arm by about one third – from 0.16 to 0.10 (along the 0-1 scale). This reduction is statistically significant, with a 95% confidence interval of 0.019 to 0.087.[25] Applying the treatment effects of oppositional media estimated in the forced-choice arm reduces the existing polarization between the opinions of partisan media consumers in the free-choice arm of our experiment.
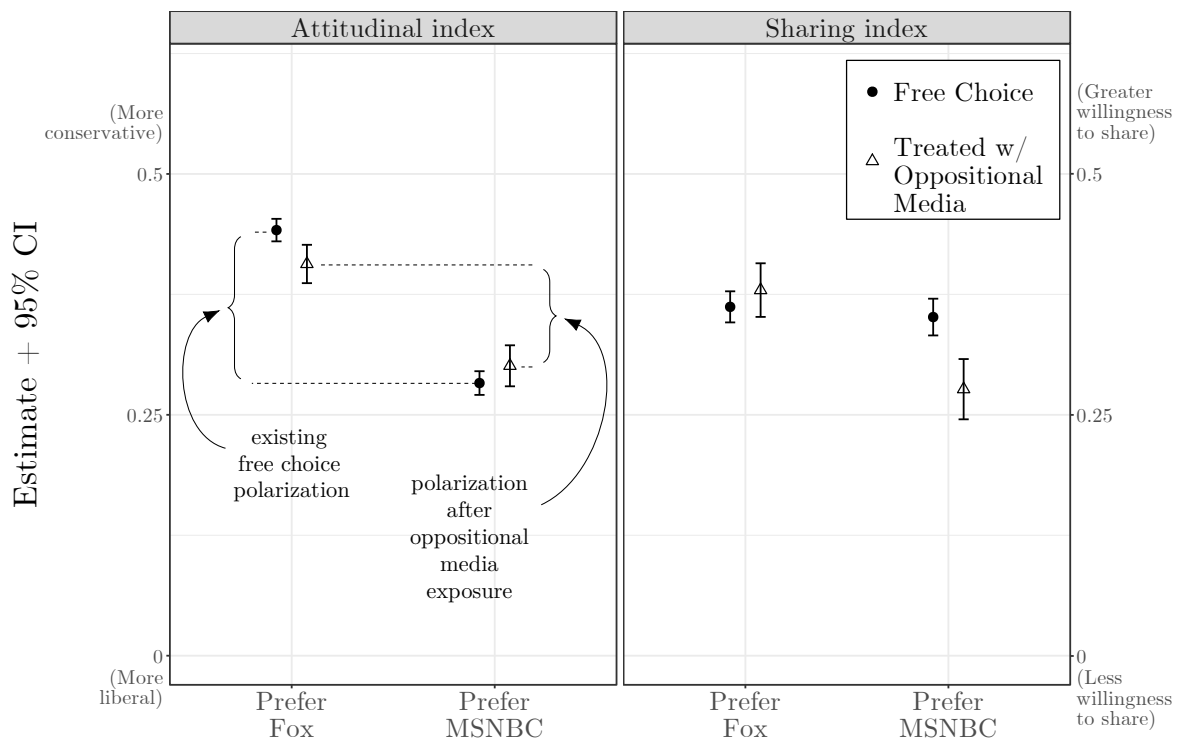

Figure 4: The Effect of Opposing Media Treatment on Polarization. Points indicate mean responses for both outcome variables and 95% confidence intervals within stated preference subgroups. Closed circles indicate subgroup estimates in the free choice arm of our experiment, while open triangles indicate estimates of the outcome after treatment effects from the forced choice arm of the experiment are applied to free choice estimates.

---

[25] Confidence intervals calculated based on pooled standard errors as the square root of the sum of squared individual group standard errors.

Our experiment also yields evidence that consuming counter-attitudinal media may polarize consumers' subsequent behavior. While partisan media consumers may moderate their opinions when exposed to media from across the partisan aisle, they appear to respond differently in their sharing behavior. Among people who prefer Fox, exposure to MSNBC made them no more or less likely to share news content than those who chose Fox News. However, among those who preferred MSNBC, exposure to Fox News reduced their willingness to share news content. This means that, were both groups exposed to content from across the aisle, the subsequent sharing of this media would be higher among those who prefer Fox – leading to potential counter-attitudinal consumption of this content by other people in their lives – relative to those who prefer MSNBC. This demonstrates that the immediate short-term behavioral effects of counter-attitudinal partisan media that we find may lead to even larger net effects were they to occur in a situation allowing for content sharing amongst people's friends and family. Moreover, the potential for these reinforcing effects may be asymmetrical, primarily affecting those people who prefer MSNBC rather than Fox.

Polarization Among the Inadvertently Exposed

Perhaps the most worrisome effects of partisan media may befall those who would not choose to consume these stories. These inadvertent consumers – the group of citizens who otherwise would prefer entertainment – may change their opinions as a result of chance encounters with partisan media. This could have pernicious consequences for political polarization as partisan media become increasingly prevalent. To show how exposing these individuals to partisan media would change their opinions, we again use both the forced exposure and free choice conditions to assess how our estimated persuasion effects change

existing opinions. We first measure the baseline of opinions among those who prefer

entertainment in the free choice group. We then use our ACTE estimates obtained from the

forced choice group to simulate how these opinions would change after "treatment"– that is, by

hypothetically exposing entertainment-preferring individuals to partisan media rather than

entertainment. As with the groups who preferred partisan media, our experiment allows us to

compare their existing opinions with the scenario in which we expose them to partisan media.

Figure 5 presents opinions among those who prefer entertainment in the free-choice arm

of our experiment along with the estimates of their opinions had we instead treated them with

partisan media. We plot with filled black circles the point estimates and corresponding

confidence intervals for respondents who read their freely chosen entertainment story, while

plotting with open triangles and open squares the estimates of their opinions if treated with Fox

News and MSNBC, respectively. We again present the attitudinal and sharing indexes in the left-

and right-hand panels, respectively.

We find that, among inadvertent readers, partisan media can substantially polarize

political opinions, driving readers in opposite directions. On our attitudinal index, people who

preferred to read entertainment and did so had a mean response of 0.35 along the 0-1 scale in the

free choice arm. Applying the treatment effect from the forced choice experiment – equivalent to

exposing them to Fox News rather than entertainment – their estimated response would instead

be a more conservative 0.36 on average, while if we apply the treatment effect of MSNBC, their

estimated response would be 0.32. This resulting opinion gap of 0.04, as plotted in the left panel

of Figure 5 with the open triangle and open square, is statistically significant (with a 95%

confidence interval of 0.014 to 0.074). In substantive terms, this level of polarization is

approximately one third of the existing polarization on this index between respondents preferring

MSNBC versus Fox in the free choice arm. This demonstrates the polarizing power of just one

instance of exposure to partisan media amongst this segment of the population.
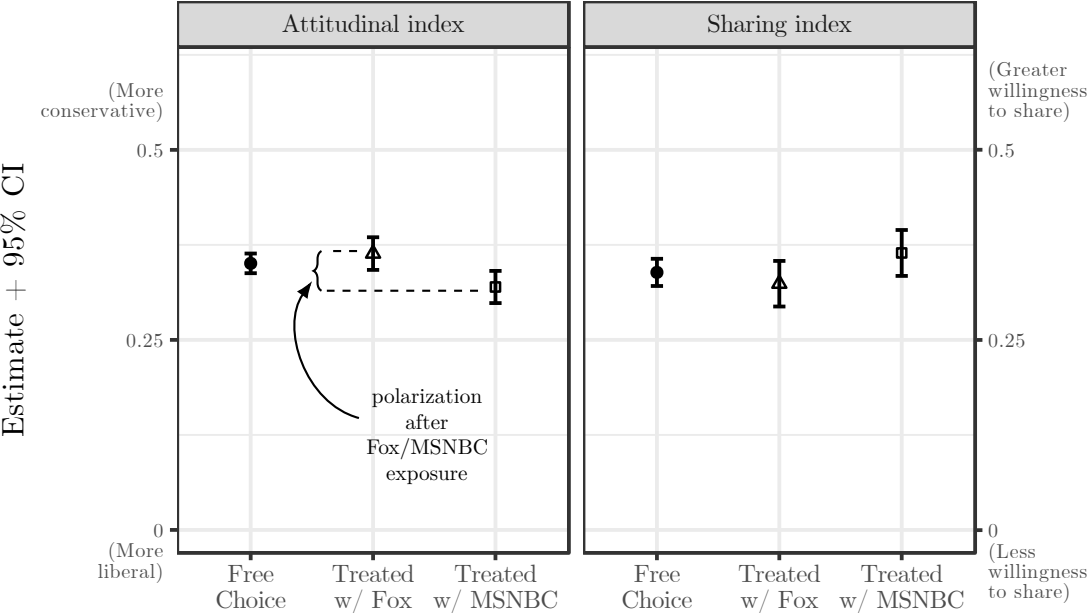

Figure 5: The Effect of Media Treatment on Entertainment-Readers. Points indicate mean responses and 95% confidence intervals. Closed circles indicate subgroup estimates in the free choice arm of our experiment after respondents who stated a preference for entertainment watched entertainment. Open triangles indicate estimates of the outcome after the treatment effect of Fox rather than entertainment from the forced choice arm of the experiment is applied to free choice estimates, and open rectangles indicate similar estimates of the free choice outcome after the treatment effect of MSNBC rather than entertainment is applied.

Partisan media may also affect the behavior of these inadvertent partisan media readers.

In the right panel of Figure 5 we plot the estimated response on our sharing index among people

who prefer entertainment and select it in the free choice arm, as well as their estimated responses

if they instead read Fox News or MSNBC. In the free choice arm, these respondents had an

average response of 0.34. Had they read MSNBC rather than entertainment, however, they

would be even more likely to share the story they read, with an estimated response of 0.36. On

the other hand, had they read Fox, they would be less likely to share the story, with an estimated

response of 0.32. This estimated gap in sharing behavior of 0.04 (95% confidence interval: -0.002, 0.083) demonstrates how the effect of partisan news may change the way that people who prefer entertainment engage with or share the partisan news media that they encounter.

Sensitivity Analyses

As previously discussed, the ACTE estimates we have presented thus far rely on the rather strong assumption that the discrepancy between participants' stated preferences over media options and their actual media choice is "ignorable"; that is, unsystematic and unrelated to the way they react to different news media. In this section, we present results of our sensitivity analysis, which relaxes this assumption and assesses how much these estimates of choice-specific persuasion are susceptible to the violation of the assumption that people's reported media preferences match their behavior when choosing media. This analysis requires information from both the forced exposure and free choice conditions, so our PICA design is essential for assessing such a problem.

The results from the free-choice condition of our experiment show that those subjects who state a preference for a given media option do not always choose that option when given the chance to do so.[26] Thanks to random assignment, we know that in expectation the same

_____

[26] We find that 81% of those preferring entertainment actually chose the entertainment article, 84% of those preferring Fox chose that article, and 82% of those preferring MSNBC chose that article. Thus, the actual viewing choice of between 16 and 18 percent of respondents differed from their stated media preferences. Full tabular display of the match between stated preferences and actual choices from respondents in the free-choice arm of our experiment are in Table A-2 of

proportion of those subjects in the forced-exposure condition would have deviated from their stated media preferences if they had been allowed to do so, contrary to our "naïve" assumption. Thus, we begin our sensitivity analysis by asking what values the ACTEs could take if we removed that assumption. That is, if we made *no assumption* about the opinion measures and sharing index for those subjects whose stated and actual media preferences would differ, what could we still conclude about the ACTEs?

We answer this question by calculating the nonparametric bounds on the ACTEs for each dependent variable. In Figure 6, we present the resulting bounds on the far right-hand side of each panel (thick lines) along with their 95% confidence intervals (thin lines). The top and bottom rows report results for our attitudinal and sharing indexes, respectively, while each column disaggregates respondents by their media preferences. These bounds represent a "worst-case" scenario, in that they present the effect of reading a given article when we assume that responses under *stated* preferences are entirely uninformative of responses under *actual* preferences. The estimated bounds suggest that this extreme assumption renders all of our persuasion effects statistically insignificant.

Although these widest bounds represent our most assumption-free estimates, they are also almost certainly too conservative. After all, it is unrealistic to expect that opinions of those

---

Appendix A. Even with a washout period between our stated preference question and respondents' actual choices, this estimate of the discrepancy between stated preferences and actual choices may be a lower bound due to the limited realism of the survey experiment. This illustrates the need for more analyses estimating the sensitivity of such experimental results to further discrepancies between stated preferences and choices.

individuals who state a preference for (say) Fox News are completely unrelated to the opinions of those who prefer to actually read Fox News. Thus, the next step in our sensitivity analysis is to allow those two groups to have different opinions not arbitrarily but only to a certain degree, which we specify via the sensitivity parameter ρ. That is, if the difference in the average opinions between the stated-preference groups and the actual-choice groups were at most ρ, what can we conclude about the possible values of the ACTEs?

In Figure 6, we also plot the sensitivity bounds for the ACTEs (in dark gray) and corresponding confidence intervals (in light gray) for the summary index of our attitudinal measures (in the top row) and the behavioral index (in the bottom row) as we change the sensitivity parameter ρ between 0 and the value at which it converges with the no-assumption bounds, moving along the x-axis of each panel. As ρ approaches zero, the bounds become tighter (because we allow less divergence of opinions between the stated-preference and actual-choice groups) and eventually collapse to the naïve estimates (on the left). On the right, all the sensitivity bounds coincide with the no-assumption bounds. Our primary interest is in the value on the x-axis at which each effect's bounds cross zero, which is the value of ρ at which our estimated effect ceases to be informative about the true sign of the ACTE.

We focus first on the statistically significant naïve estimates for the attitudinal index, in the top row of the figure, beginning with those who prefer entertainment (left panel). For this index, the value of ρ at which our bounds around the treatment effect cross zero is estimated to be 0.02. This implies that among people who prefer entertainment, in order to have zero estimated effect of reading Fox News rather than MSNBC, the deviation in the measure between stated-preference groups and actual-choice groups would have to be just below half the size of our naïve estimate of 0.04. After incorporating statistical uncertainty in the estimation of these

bounds, however, the estimates appear less robust to the discrepancy in stated and actual preferences: the 95% confidence intervals for the bounds include zero as soon as we allow for a deviation of .01 in the average opinions between the stated-preference and actual-choice groups – one quarter the size of our estimated treatment effect. Among those respondents who prefer Fox, for whom we observed a statistically significant treatment effect on the attitudinal index of 0.04, we also observe similar results, with the lower bound of the treatment effect on this measure growing to include zero given a small violation of our assumption about the discrepancy between stated and actual preferences, making our estimate uninformative about the true direction of the effect.

For our behavioral measure – whether or not respondents would share or discuss with others the news story they read, shown in the bottom row of Figure 6, larger deviations from the naïve assumption are necessary to negate our significant negative estimates of the ACTEs for the respondents who prefer MSNBC. Among these respondents, the upper bound on our treatment effect remains negative until ρ reaches .06 – nearly equivalent to the size of our treatment effect – and even the 95% confidence interval does not contain zero until ρ is 0.03.
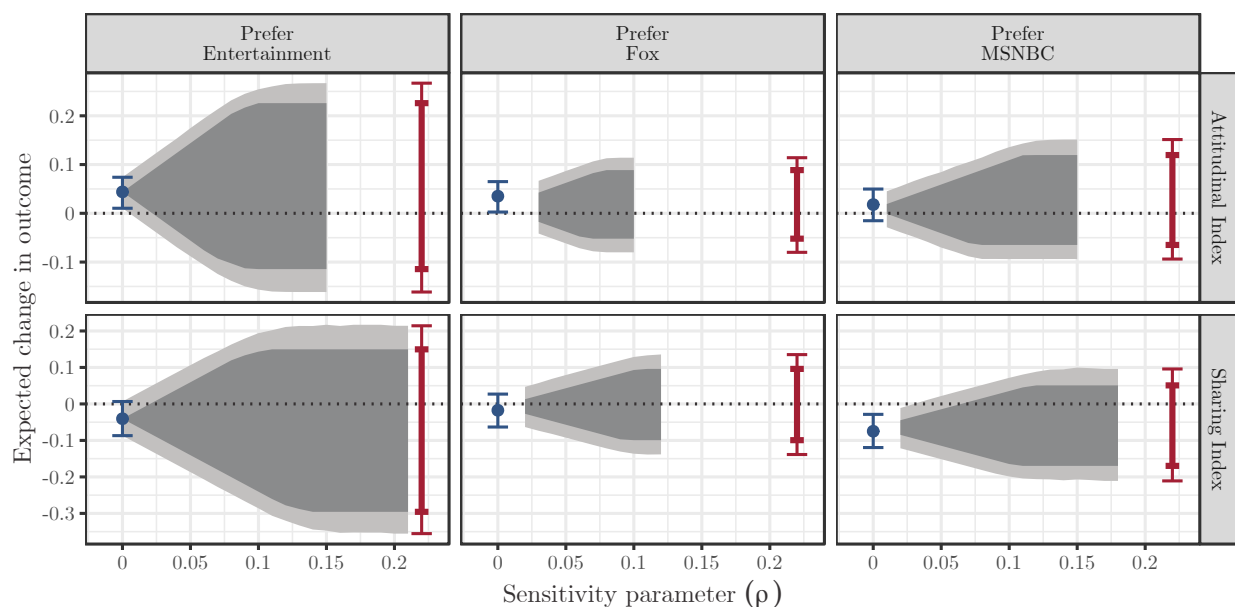
Figure 6: Sensitivity Analyses. Points and 95% confidence intervals on the left of each panel reproduce naïve treatment effects, with values in the positive direction indicating opinion change in the conservative direction on the attitudinal index (top row) and greater willingness to share the media content on the sharing index (bottom row). Lines on the right of each panel represent the no-assumption bounds (thick lines) and 95% confidence intervals for those bounds (thin lines). Grey areas indicate the bounds for varying levels of ρ (dark grey) and 95% confidence intervals for those bounds (light grey).

Taken together, these sensitivity analyses indicate that our evidence of media persuasion effects depends on assumptions of relatively modest deviations between stated preferences and actual media choices. When we allow for larger deviations between the opinions of the stated-preference groups and actual-choice groups, the lower bounds of our estimated persuasive effects of partisan media on attitudes become negative even for the group of people who state a preference for entertainment. This means that we can no longer entirely exclude the possibility that these effects are actually below zero under those scenarios. The estimated levels of sensitivity further increase when we incorporate statistical uncertainty in our analysis. Our estimated effects on intended behavior are robust to relatively larger violations of this assumption.

Thus, we cautiously conclude that our findings are robust to reasonable – but not large – violations of the assumption that the discrepancy between stated and actual media preferences is ignorable.[27] But more broadly, our analysis highlights the importance of accounting for the

---

[27] Though assessing the reliance on this assumption is important, we have several reasons to believe that the true discrepancy between the stated and actual choice groups is not actually larger than the values of ρ at which our estimates would be uninformative for these outcomes. Scholars have found that stated preferences in online surveys strongly correlate with respondents' media consumption habits in the real world (e.g. Levendusky 2013b, Sood and

potential deviation between stated preferences and actual behavior in any experimental paradigm aimed at accurately estimating attitudinal change.

Conclusion

The explosion of consumer choice over the past several decades and with it the resurgence of an American partisan press, combined with a parallel rise in partisan polarization, has deepened scholarly interest in learning how media influence public opinion. Understanding the role of partisan media is particularly important when building coalitions across partisan and ideological lines seems ever more elusive and citizens increasingly question the capacity of our leaders to overcome partisan polarization.

In contrast to previous research, we demonstrate a strong persuasive impact of partisan media on political attitudes with data collected through our PICA design. While other studies have shown that counter-attitudinal information is unlikely to persuade people, and may even produce backlash effects (e.g., Nyhan and Reifler, 2010), we show that both pro- and counter-attitudinal partisan media can, in fact, change people's opinions in the direction of the partisan media's message. This fits with a growing body of research showing limited backlash to opposing information (e.g., Guess and Coppock, 2018; Wood and Porter, 2018).

Our results indicate that political polarization is not simply a function of selective exposure. To be sure, selective exposure is a real phenomenon – people do prefer media that supports their preexisting attitudes, and those who consume opposing media have polarized

---

Lelkes, 2018). Similarly, we find relatively high correspondence between stated and revealed media preferences among the subjects in our survey.

political opinions, which we confirm using the free choice arm of our experiment. Yet this does not preclude partisan media from having a strong polarizing effect as well. In the case of marijuana policy – and on three additional policy areas presented in Appendix E[28] – our results show a strong impact of partisan news on the people who read it – not just among those who would ordinarily choose to read these sources, but also among people who prefer apolitical entertainment news. Indeed, partisan media may have the greatest potential to polarize attitudes among the large segment of people who prefer not to consume partisan news at all. For these consumers, a single exposure to partisan media from one ideological perspective can create polarization in attitudes equivalent to approximately one-third of the polarization that exists between self-selected partisan news consumers on opposite sides of the aisle. Thus, while the consequences are minor if these people maintain a media diet of entertainment-only, if they deviate from such content or are inadvertently exposed to partisan media from one side or the other, their attitudes may change – and by a substantively large amount.

We also find evidence that partisan news can further change the opinions of people who would already self-select into these partisan news silos, exacerbating polarization. Yet this result also indicates that partisan news media can reduce polarization via exposure to counter-attitudinal media sources among those who would ordinarily choose to consume pro-attitudinal partisan media. Persuasion by oppositional partisan media can help bridge the gap in opinions between groups of consumers. Moreover, the power of partisan media is not limited to opinions,

---

[28] While there are some differences, as could be expected in different policy areas and on different survey samples, our results largely replicate when the topic is military strikes against ISIS, fracking, or charter school education policy.

but extends to socially and politically consequential behaviors, as measured by our sharing index. People – particularly those who would prefer to consume MSNBC – are more likely to spread pro- than counter-attitudinal partisan news stories to other people. This result suggests that biases may arise in the interpersonal flow of information. Though endorsements from social connections and other characteristics of specific media content may ameliorate this tendency (e.g., Messing and Westwood, 2014; Mummolo, 2016), it may still lead to increasingly homogenous information received via other people (cf. Brundidge, 2010). Understanding how media consumption affects these types of behavior is especially important given the growing prevalence of online social media as vehicles for information sharing.

We also leveraged our PICA design to bound these persuasion estimates based on the instability between self-reported media consumption preferences and observed behavior. The bounds generated through our sensitivity analyses demonstrate how easily effects of persuasion may disappear if assumptions about stated preferences are not true. These sensitivity analyses illustrate the importance of assessing the treatment effects of partisan media among individuals making real-world choices among media options. Indeed, our experimental findings might look different "in the wild" with violations of our assumption about stated preferences and actual media choices. Further research on persuasion that incorporates real world behavior along with stated preferences on surveys can better uncover the true effects of media without relying on such assumptions.

Taken together, these results suggest a more nuanced story of the effects of ideological media than scholars have previously recognized. Though many people do disproportionately choose to consume news from their own side of the ideological spectrum, many others – both partisans and independents – prefer entertainment over partisan news. Partisan news can be

persuasive to these individuals. Separately estimating these effects for people with different media viewing preferences can help detect important heterogeneity in the effects of partisan media (e.g., Gaines and Kuklinski, 2011; Leeper, 2017). We demonstrate that reading partisan news on a politically salient topic can change people's opinions, as well as their actions, to different degrees depending on their media preferences. Indeed, contrary to the "minimal effects" hypothesis, among the group of the population who most prefers entertainment media, we find strong evidence of attitudinal persuasion.

If, as our findings suggest, partisan news can affect both attitudes and actions, then there is cause for concern. Some people may indeed choose to separate their media consumption patterns according to their ideology, but ironically it is the people who opt for largely apolitical stories who are most vulnerable to the persuasive effects of slanted news. When these individuals consume partisan media content, their opinions can change.

Our findings on the persuasiveness of ideological media are one piece of a puzzle and raise other questions about the broader implications of partisan media. For instance, more research on the persistence of these persuasive effects, or the aggregate effect of repeated treatments in a media-rich environment, could give us some indication of how they will affect politics writ large. Furthermore, estimating how interactions with political media affect subsequent choices among media options could potentially prove an important factor in assessing the total persuasive effect of partisan media. While ideologically slanted media may increase polarization among its natural consumers, our results suggest that it is the large number of relatively apolitical individuals, rather than the much smaller number of regular consumers of these news sources, who are most susceptible to such polarization effects. Indeed, this last finding suggests a powerful incentive for political entrepreneurs to seek out these entertainment-

seekers and deliver such slanted political messages directly to them via social network feeds, native ads, or other means not requiring an individual's choice to consume partisan news. The extent to which they are able to successfully target these individuals and expose them to partisan news remains a fruitful avenue for future research.

References

Arceneaux, Kevin and Martin Johnson. 2013. *Changing Minds or Changing Channels: Partisan News in an Age of Choice*. Chicago: University of Chicago Press.

Arceneaux, Kevin, Martin Johnson, and Chad Murphy. 2012. "Polarized Political Communication, Oppositional Media Hostility, and Selective Exposure." *Journal of Politics* 74:1 (January): 174–86.

Baum, Matthew, and Tim J. Groeling. 2008. "New Media and the Polarization of American Political Discourse." *Political Communication* 25:4 (November): 345-65.

Baum, Matthew, and Tim J. Groeling. 2009. "Shot by the Messenger: Partisan Cues and Public Opinion Regarding National Security and War." *Political Behavior* 31:2 (June): 157-86.

Baum, Matthew, and Tim J. Groeling. 2010. *War Stories: The Causes and Consequences of Public Views of War*. Princeton: Princeton University Press.

Bennett, W. Lance, and Shanto Iyengar. 2008. "A New Era of Minimal Effects?" *Journal of Communication* 58:4 (December): 707–31.

Berelson, Bernard R., F. Paul. Lazarsfeld, and William N. McPhee. 1954. *Voting: A Study of Opinion Formation in a Presidential Campaign*. Chicago: University of Chicago Press.

Bolsen, Toby, James N. Druckman, and Fay Lomax Cook. 2014. "The Influence of Partisan Motivated Reasoning on Public Opinion." *Political Behavior* 36(2): 235-262.

Brundidge, Jennifer. 2010. "Encountering 'Difference' in the Contemporary Public Sphere: The Contribution of the Internet to the Heterogeneity of Political Discussion Networks." *Journal of Communication* 60(4): 680-700.

Bullock, John. 2011. "Elite Influence on Public Opinion in an Informed Electorate." *American Political Science Review* 105:3 (August): 496-515.

Campbell, Angus, Philip E. Converse, Warren Miller and Donald Stokes. 1960. *The American Voter*. Chicago: University of Chicago Press.

Dilliplane, Susanna. 2014. "Activation, Conversion, or Reinforcement? The Impact of Partisan News Exposure on Vote Choice." *American Journal of Political Science* 58:1 (January): 79-94.

Ellithorpe, Morgan E., Lance Holbert, and Angela L. Palmer-Wackerly. 2013. "Procrastination and the Shifting Political Media Environment: An Experimental Study of Media Choice Affecting a Democratic Outcome." *Communication Studies* 64:5 (November): 561-78.

Feldman, Lauren. 2011. "Partisan Differences in Opinionated News Perceptions: A Test of the Hostile Media Effect." *Political Behavior* 33:3 (September): 407-32.

Hamilton, James T. 2005. "The Market and the Media." In *The Press*, eds. Geneva Overholser and Kathleen H. Jamieson. Oxford: Oxford University Press, 351-71.

Hmielowski, Jay D., Lauren Feldman, Teresa A. Myers, Anthony Leiserowitz, and Edward Maibach. 2014. "An Attack on Science? Media Use, Trust in Scientists, and Perceptions of Global Warming." *Public Understanding of Science* 23:7 (October): 866-83.

Gaines, Brian, and James Kuklinski. 2011. "Experimental Estimation of Heterogeneous Treatment Effects Related to Self-Selection." *American Journal of Political Science* 55:3 (July): 724–36.

Gentzkow, Matthew, and Jesse Shapiro. 2011. "Ideological Segregation Online and Offline." *Quarterly Journal of Economics* 126:4 (November): 1799-1839.

Groeling, Tim. 2013. "Media Bias by the Numbers: Challenges and Opportunities in the Empirical Study of Partisan News." *Annual Review of Political Science* 16: 129-51.

Guess, Andrew, and Alexander Coppock. 2018. "Does Counter-Attitudinal Information Cause
Backlash? Results from Three Large Survey Experiments." *British Journal of Political Science* (forthcoming).

Iyengar, Shanto, and Donald R. Kinder. 1987. *News That Matters*. Chicago: University of Chicago Press.

Iyengar, Shanto and Kyu S. Hahn. 2009. "Red Media, Blue Media: Evidence of Ideological Selectivity in Media Use." *Journal of Communication* 59:1 (March): 19–39.

Iyengar, Shanto, Kyu S. Hahn, Jon A. Krosnick, and John Walker. 2008. "Selective Exposure to Campaign Communication: The Role of Anticipated Agreement and Issue Public Membership." *Journal of Politics* 70:1 (January): 186–200.

Kim, Young Mie. 2009. "Issue Publics in the New Information Environment: Selectivity, Domain Specificity, and Extremity." *Communication Research* 36:2 (April): 254-84.

Knobloch-Westerwick, S., and Meng, J. 2009. "Looking the Other Way: Selective Exposure to Attitude-Consistent and Counterattitudinal Political Information." *Communication Research* 36:3, 426-448.

Knobloch-Westerwick, S. and Kleinman, S. 2012. "Preelection Selective Exposure: Confirmation Bias Versus Informational Utility." *Communication Research* 39(2), 170-193.

Knox, Dean, Teppei Yamamoto, Matthew A. Baum, and Adam Berinsky. 2019. "Design, Identification, and Sensitivity Analysis for Patient Preference Trials." *Journal of the American Statistical Association* (forthcoming).

Kunda, Ziva. 1990. "The Case for Motivated Reasoning." *Psychological Bulletin* 108(3): 480–498.

Ladd, Jonathan M. 2012. *Why Americans Hate the Media and How It Matters*. Princeton: Princeton University Press.

Lazarsfeld, Paul Felix, Bernard Berelson, and Hazel Gaudet. 1948. *The People's Choice: How the Voter Makes Up His Mind in a Presidential Campaign.* New York: Columbia University Press.

Leeper, Thomas J. 2014. "The Informational Basis for Mass Polarization." *Public Opinion Quarterly* 78(1): 27-46.

Leeper, Thomas J. 2017. "How Does Treatment Self-Selection Affect Inferences About Political Communication?" *Journal of Experimental Political Science* 4(1): 21-33.

Leeper, Thomas J., and Rune Slothuus. 2014. "Political Parties, Motivated Reasoning, and Public Opinion Formation." *Political Psychology* 35(1): 129-156.

Levendusky, Matthew S. 2013a. *How Partisan Media Polarize America*. Chicago: University of Chicago Press.

Levendusky, Matthew S. 2013b. "Why Do Partisan Media Polarize Viewers?" *American Journal of Political Science* 57:3 (July): 611–23.

Messing, Solomon, and Sean J. Westwood. 2014. "Selective Exposure in the Age of Social Media: Endorsements Trump Partisan Source Affiliation When Selecting News Online." *Communication Research* 41:8 (December): 1042-63.

Mummolo, Jonathan. 2016. "News from the Other Side: How Topic Relevance Limits the Prevalence of Partisan Selective Exposure." *Journal of Politics* 78(3): 763-773.

Nielsen. 2010. "Nielsen Provides Topline U.S. Web Data for March 2010." April 27, 2010. Online: http://www.nielsen.com/us/en/insights/news/2010/nielsen-provides-topline-u-s-web-data-for-march-2010.html

Negroponte, Nicholas. 1995. "Being Digital – A Book (P)review." Wired. Retrieved April 14,
2017. Online: https://www.wired.com/1995/02/negroponte-27.

Nyhan, Brendan, and Jason Reifler. 2010. "When Corrections Fail: The Persistence of Political
Misperceptions." *Political Behavior* 32(2): 303-330.

Pariser, Eli. 2012. *Filter Bubble: Wie wir im Internet entmündigt werden*. Munich; Hanser.

Prior, Markus. 2007. *Post-Broadcast Democracy: How Media Choice Increases Inequality in
Political Involvement and Polarizes Elections*. New York: Cambridge University Press.

Sood, Guarav, and Yphtach Lelkes. 2018. "Don't Expose Yourself: Discretionary Exposure to
Political Information." In *Oxford Research Encyclopedia of Politics*.

Stroud, Natalie J. 2011. *Niche News: The Politics of News Choice*. New York: Oxford University
Press.

Sunstein, Cass. 2001. *Republic.com*. Princeton: Princeton University Press.

Taber, Charles S., and Milton Lodge. 2006. "Motivated Skepticism in the Evaluation of Political
Beliefs." *American Journal of Political Science* 50(3): 755–769.

Torgerson, David J., and Bonnie Sibbald. 1998. "Understanding Controlled Trials: What Is a
Patient Preference Trial?" *British Medical Journal* 316:7128 (January): 360.

Wood, Thomas, and Ethan Porter. 2018. "The Elusive Backfire Effect: Mass Attitudes' Steadfast Factual
Adherence." *Political Behavior* (forthcoming).

Zaller, John. 1992. *The Nature and Origins of Mass Opinion.* Cambridge: Cambridge University Press.

Zell, Ethan, and Bernstein, Michael J. 2014. "You May Think You're Right…Young Adults are
More Liberal Than They Realize." *Social Psychological and Personality Science* 5:3
(April): 326-33.

Supplementary Appendix for "Persuading the Enemy: Estimating the Persuasive Effects of Partisan Media with the Preference-Incorporating Choice and Assignment Design"

Justin de Benedictis-Kessner
Postdoctoral Research Associate, Boston Area Research Initiative, jdbk@iq.harvard.edu

Matthew A. Baum
Professor, Harvard University, John F. Kennedy School of Government,
Matthew_Baum@harvard.edu

Adam J. Berinsky
Mitsui Professor, Massachusetts Institute of Technology, berinsky@mit.edu

Teppei Yamamoto
Associate Professor, Massachusetts Institute of Technology, teppei@mit.edu

Appendix A: Free Choice Results

Predictors of Self-Selection:

To assess the motivations behind individuals' media preferences, we regress each of the stated preferences for media options in our survey using a multinomial logit regression. The results of this analysis are presented in Table A-1 in the format suggested by Alvarez and Nagler (1995), showing predicted probabilities of choosing each of the three media options rather than hard-to-interpret logit coefficients. We show these probabilities among each of several demographic groups of the sample, with a stated preference for the entertainment option in the left-hand column, a preference for Fox News in the middle column, and a preference for MSNBC in the right-hand column. We also include multinomial logit coefficients and standard errors in Table A-2. This analysis demonstrates that, unsurprisingly, partisanship and ideology predicted respondents' probability of choosing each media option. Republicans are statistically significantly more likely to prefer Fox than the entertainment option, and statistically significantly less likely to prefer MSNBC than the entertainment option. Similarly, Democrats are more likely to prefer MSNBC over entertainment. Conservatives are significantly more likely to prefer Fox, and significantly less likely to prefer MSNBC over the entertainment option, while liberals show the opposite pattern. In addition, men are significantly more likely to prefer both Fox and MSNBC over the entertainment option. Respondents' race, political knowledge, education, and income all significantly predict their media preferences as well.

Table A-1: Demographic Predictors of Media Preferences

		Probability of choosing:		
		Entertainment	Fox	MSNBC
Party ID				
	Republican	0.28	0.54	0.18
		(0.001)	(0.002)	(0.002)
	Democrat	0.29	0.31	0.40
		(0.001)	(0.002)	(0.002)
	Difference	-0.02	0.23	-0.22
Ideology				
	Conservative	0.28	0.54	0.18
		(0.001)	(0.002)	(0.002)
	Liberal	0.31	0.28	0.41
		(0.002)	(0.002)	(0.002)
	Difference	-0.03	0.26	-0.23
Gender				
	Male	0.22	0.46	0.32
		(0.001)	(0.003)	(0.003)
	Female	0.34	0.38	0.28
		(0.001)	(0.003)	(0.003)
	Difference	-0.13	0.08	0.04
Race				
	White alone	0.27	0.42	0.31
		(0.001)	(0.003)	(0.003)
	Non-white	0.30	0.43	0.27
		(0.001)	(0.003)	(0.003)
	Difference	-0.02	-0.02	0.04
Political Knowledge				
	High	0.24	0.41	0.35
		(0.001)	(0.003)	(0.003)
	Low	0.34	0.45	0.22
		(0.001)	(0.003)	(0.002)
	Difference	-0.09	-0.04	0.13
Education				
	College degree or more	0.28	0.40	0.32
		(0.001)	(0.003)	(0.003)
	Less than college degree	0.28	0.44	0.28
		(0.001)	(0.003)	(0.003)
	Difference	0.00	-0.04	0.04

Income

$50k or more	0.27	0.41	0.32
	(0.001)	(0.003)	(0.003)
Less than $50k	0.29	0.43	0.27
	(0.001)	(0.003)	(0.003)
Difference	-0.02	-0.02	0.05

Note: Table entries are the predicted probabilities from the multinomial logit model of media preference using the mean probability among all respondents when changing their values of the independent variable from one extreme to the other following Alvarez and Nagler (1995), along with bootstrap standard errors in parentheses.

Table A-2: Predictors of Media Preferences, Multinomial Logit Coefficients

	Dependent variable:	
	Prefer Fox over Entertainment	Prefer MSNBC over Entertainment
Republican	0.654***	-0.247*
	-0.124	-0.149
Democrat	-0.02	0.594***
	-0.124	-0.132
Conservative	0.394***	-0.541***
	-0.116	-0.137
Liberal	-0.431***	0.239*
	-0.122	-0.124
Male	0.658***	0.554***
	-0.074	-0.082
White	0.002	0.216**
	-0.084	-0.09
Political Knowledge	0.092***	0.343***
	-0.024	-0.027
Education: college degree or more	-0.146*	0.106
	-0.077	-0.084

Income: 50k or more	-0.006	0.271***
	-0.076	-0.085
Constant	-0.524***	-1.808***
	-0.136	-0.154
Akaike Inf. Crit.	9,778.30	9,778.30

Note: Table entries are multinomial logit coefficients and standard errors below them. *p<0.1; **p<0.05; ***p<0.01

In Table A-3 below, we change some of the predictors of media preference included in these models. Specifically, we include a more fine-grained measure of partisanship (with pure independents omitted) and the measure of media hostility (which ranged from 0, the least hostile, to 1, the most hostile). These results indicate that the three-category measure of partisanship may mask important heterogeneity in the preference for both Fox and MSNBC among weak partisans. Leaners (to both parties) were much more preferential of the media outlet that aligned with their partisanship than the entertainment option and much less preferential of the media outlet opposed to their partisanship. However, weak Democrats have preferences much more similar to that of pure independents: they preferred neither partisan media option more or less than the entertainment option. In addition, respondents' hostility towards the media was a statistically significant predictor of preferences: those who were more hostile towards the media were much less likely to choose either partisan media option over the entertainment option.

Table A-3: Additional Predictors of Media Preferences

	Dependent variable:	
	Prefer Fox over Entertainment	Prefer MSNBC over Entertainment
Strong Democrat	0.094	0.588***
	-0.146	-0.15
Weak Democrat	0.067	0.221
	-0.147	-0.155

Lean Democrat	-0.413**	0.411***
	-0.166	-0.158
Lean Republican	0.549***	-0.344*
	-0.157	-0.207
Weak Republican	0.473***	-0.132
	-0.139	-0.169
Strong Republican	0.896***	-0.421**
	-0.14	-0.184
Conservative	0.352***	-0.503***
	-0.117	-0.137
Liberal	-0.469***	0.161
	-0.124	-0.126
Male	0.647***	0.510***
	-0.074	-0.083
White	0.005	0.235***
	-0.084	-0.091
Political Knowledge	0.097***	0.361***
	-0.025	-0.028
Education: college degree or more	-0.129*	0.069
	-0.078	-0.086
Income: 50k or more	-0.005	0.275***
	-0.076	-0.086
Hostile Media Index	-0.305*	-1.617***
	-0.176	-0.201

Constant	-0.351**		-0.933***
	-0.165		-0.186
Akaike Inf. Crit.		9,657.73	9,657.73

Note: Table entries are multinomial logit coefficients and standard errors below them. *p<0.1; **p<0.05; ***p<0.01

Match Between Stated Preferences and Revealed Preferences

Respondents in the free-choice arm of our experiment allow us to further explore the match between stated preferences and revealed preferences (actual media consumption choices). We discuss this match (and discrepancy) in the main paper, but the full tabular results are presented below in Table A-4.

Table A-4: Stated Preferences and Revealed Preferences (choices)

	Stated Preference			
Revealed Preference	Entertainment	Fox	MSNBC	Total
Entertainment	809	148	103	1060
	23.7%	4.3%	3.0%	31.1%
Fox	98	1243	62	1403
	2.9%	36.4%	1.8%	41.1%
MSNBC	86	88	776	950
	2.5%	2.6%	22.7%	27.8%
Total	993	1479	941	3413
	29.1%	43.3%	27.6%	

To further explore the characteristics of respondents who differ in their stated preferences and revealed choices, we regress an indicator for whether or not the two measures are different on a number of background characteristics among respondents in the free choice arm of our experiment. The results of these linear probability model analyses are in Table A-5 below, broken down by the full sample (left column) and three subgroups of stated preferences.

Consistently across preference groups, we find that political knowledge negatively predicts the probability that stated preferences differ from revealed media choices within the context of our experiment. Respondents are between two and four percentage points less likely to differ in their preferences if they are high on political knowledge (answering all five knowledge questions correctly) rather than low in political knowledge (answering none correctly). The results are mixed for other predictors of this discrepancy.

Table A-5: Predictors of Differing Stated Preferences and Choices

	Dependent Variable: Discrepancy between Preference/Choice			
	Subset:			
	Full Sample	Prefer Entertainment	Prefer Fox	Prefer MSNBC
Democrat	0.006	-0.039	0.079*	-0.029
	-0.027	-0.051	-0.044	-0.049
Republican	0.004	0.004	0.053	-0.0001
	-0.028	-0.051	-0.042	-0.059
Conservative	-0.002	0.008	-0.03	0.074
	-0.025	-0.048	-0.036	-0.052
Liberal	-0.012	0.013	0.001	-0.021
	-0.025	-0.05	-0.04	-0.042
Male	-0.006	0.078**	-0.047**	-0.014
	-0.015	-0.031	-0.022	-0.027
White	-0.027	-0.043	-0.009	-0.015
	-0.017	-0.032	-0.026	-0.03
Political Knowledge	-0.036***	-0.025**	-0.034***	-0.037***
	-0.005	-0.01	-0.007	-0.01
Education: college degree or more	0.038**	0.046	0.053**	-0.004
	-0.015	-0.031	-0.023	-0.028

Income: 50k or more	-0.021	-0.028	-0.03	0.001
	-0.015	-0.031	-0.023	-0.029
Hostile Media Index	-0.103***	-0.195***	-0.074	0.001
	-0.035	-0.068	-0.05	-0.073
Constant	0.339***	0.351***	0.278***	0.333***
	-0.034	-0.067	-0.05	-0.074
Observations	2,662	719	1,165	778
Adjusted R2	0.03	0.024	0.049	0.036
F Statistic	9.285***	2.753***	6.985***	3.938***

Note: *p<0.1; **p<0.05; ***p<0.01

We next present tabular results among those respondents in the free choice arm of our experiment, on both our indices as well as the individual component attitudinal questions.

Table A-6: Opinions among free choice respondents. Table entries are average subgroup opinions and standard deviations in parentheses.

	Stated Preference		
DV	Entertainment	Fox	MSNBC
Attitudinal Index	0.351	0.442	0.283
	(0.214)	(0.225)	(0.19)
Sharing Index	0.339	0.362	0.351
	(0.297)	(0.306)	(0.293)
Addiction/crime tradeoff	0.402	0.446	0.300
	(0.276)	(0.283)	(0.238)
Legalization would make econ better	0.314	0.392	0.250
	(0.258)	(0.289)	(0.211)
Regulation not worth it	0.332	0.375	0.276

	(0.293)	(0.307)	(0.296)
Legalization would lead to fewer serious crimes	0.411	0.513	0.376
	(0.305)	(0.336)	(0.296)
Marijuana not morally wrong	0.337	0.441	0.237
	(0.316)	(0.336)	(0.282)
Marijuana use does not increase violent crime	0.332	0.470	0.297
	(0.302)	(0.331)	(0.287)
Should be legal for medical use	0.204	0.241	0.124
	(0.251)	(0.279)	(0.21)
Not a serious problem	0.376	0.508	0.327
	(0.322)	(0.339)	(0.297)
Should be legal for recreational use	0.370	0.488	0.274
	(0.34)	(0.373)	(0.306)
Marijuana is dangerous	0.429	0.543	0.365
	(0.331)	(0.335)	(0.295)
N	809	1243	776

Note: Includes respondents for whom stated preferences were equivalent to revealed preferences (choices)

As a check of the robustness of the estimates from the free choice arm of our experiment, we can compare them to the group-level mean responses from the forced choice arm of our experiment for those respondents who were randomly assigned to read their preferred media choice. These estimates are presented in Table A-7 below. For our attitudinal index and sharing index for all preference subgroups, the difference between the free choice estimate and the estimate among forced choice respondents whose randomly assigned media option is their choice is not

statistically significant. On the individual dependent measures, only three estimates have differences that are statistically distinguishable from zero at the 90% level: "regulation worth cost" among those who prefer Fox, "marijuana use increases violent crime" among those who prefer entertainment, and "marijuana is a serious problem" among those who prefer entertainment.

Table A-7: Mean responses compared between free and forced choice equivalent:

DV	Prefer Entertainment		Prefer Fox		Prefer MSNBC	
	Free choice estimate	Forced choice = preference	Free choice estimate	Forced choice = preference	Free choice estimate	Forced choice = preference
Attitudinal index	0.351	0.357	0.442	0.454	0.283	0.291
Sharing index	0.339	0.358	0.362	0.361	0.351	0.376
Addiction/crime tradeoff	0.402	0.373	0.446	0.462	0.300	0.318
Legalization would make econ worse	0.314	0.312	0.392	0.419	0.250	0.251
Regulation worth cost	0.332	0.314	0.375	0.419	0.276	0.277
Legalization leads to fewer serious crimes	0.411	0.403	0.513	0.525	0.376	0.384
Marijuana morally wrong	0.337	0.367	0.441	0.442	0.237	0.243
Marijuana use increases violent crime	0.332	0.370	0.470	0.478	0.297	0.317
Should be legal for medical use	0.204	0.205	0.241	0.259	0.124	0.130
Marijuana is serious problem	0.376	0.417	0.508	0.509	0.327	0.333
Should be legal for recreational use	0.370	0.369	0.488	0.497	0.274	0.282
Marijuana is dangerous	0.429	0.449	0.543	0.528	0.365	0.378
N	809	350	1243	468	776	319

Appendix B: Forced Choice Results

<u>Persuasion Effects</u>

When examining our respondents in the aggregate, we found broad persuasion effects of reading

Fox News relative to reading MSNBC. In Table B-1 we show the mean outcomes for both our

attitudinal index and our behavioral index among respondents exposed to MSNBC (in the left-

hand column) and respondents exposed to Fox News (in the second column) in the forced-choice

arm of our experiment, along with the difference between the two groups (our treatment effect,

in the third column) and the 95% confidence interval of this difference. In the final column we

present the p-value from the significance test of this difference. These results indicate that across

the entire sample, those respondents who read the article from Fox reported attitudes that were

more conservative than those who read the article from MSNBC by 0.03 along the 0-1 scale of

our attitudinal index. In addition, those respondents who read the article from Fox were less

likely to report intending to share this content than those who read the article from MSNBC by

0.04 along the 0-1 scale.

Table B-1: Treatment estimates on summary variables, all respondents

DV		Mean [MSNBC]	Mean [Fox]	Treatment Effect (95% CI)	p-value of difference
Attitudinal index		0.352	0.386	0.034	0.000
				(0.015, 0.053)	
Sharing Index		0.380	0.338	-0.041	0.002
				(-0.068, -0.015)	
	N	1190	1111		

Note: Significance tests of the differences between groups conducted using two-tailed t-tests.

However, aggregating these effects suppresses the heterogeneity that may result from actual exposure by people with differing characteristics and preferences. Just as looking at the differences in opinions among people who self-selected into different media options presents an incomplete picture of partisan media's influence, assessing the treatment effects across an entire sample that might not encounter these media in the real world is not completely informative. Our experimental design enables us to account for underlying heterogeneity among our respondents. In the main text and below in Table B-2, we present estimates of persuasion among subgroups by media preferences, which best allow us to gauge the real-world effects of media.

Table B-2: Treatment estimates by stated preferences

Subset	DV	Mean [MSNBC]	Mean [Fox]	Treatment Effect (95% CI)	p-value of difference
Prefer Entertainment					
	Attitudinal index	0.326	0.370	0.044 (0.012, 0.076)	0.007
	Sharing Index	0.383	0.343	-0.040 (-0.087, 0.006)	0.091
	N	375	355		
Prefer Fox					
	Attitudinal index	0.419	0.454	0.035 (0.004, 0.066)	0.026
	Sharing Index	0.379	0.361	-0.017 (-0.061, 0.026)	0.435
	N	467	445		
Prefer MSNBC					
	Attitudinal index	0.291	0.309	0.018 (-0.014, 0.05)	0.278
	Sharing Index	0.376	0.302	-0.075 (-0.121, -0.029)	0.001
	N	348	311		

Note: Significance tests of the differences between groups conducted using two-tailed t-tests.

We also present our estimates of persuasion among subgroups by partisanship and by ideology below in Tables B-3 and B-4. These results are similar to our main effects disaggregating by media preferences, but with several important differences. We observe a larger persuasive effect of 0.02 on the attitudes of Democratic respondents, in contrast to the smaller effect among those who prefer MSNBC. The attitudinal effect of Fox relative to MSNBC among liberal respondents of 0.009 was even smaller than that among respondents who prefer MSNBC and statistically indistinguishable from zero. However, the effect on liberal respondents' reported sharing intentions of -0.111 was larger than the analogous effect of -0.075 among respondent who prefer MSNBC. These differences indicate that stated preference subgroups indeed differ in composition from partisan and ideological subgroups – which also differ from each other – and that these differences are substantively meaningful.

Table B-3: Treatment estimates by respondent partisanship

Subset	DV	Mean [MSNBC]	Mean [Fox]	Treatment Effect (95% CI)	p-value of difference
Democratic Respondents					
	Attitudinal index	0.292	0.314	0.022 (-0.003, 0.048)	0.087
	Sharing Index	0.419	0.348	-0.072 (-0.112, -0.031)	0.001
	N	458	417		
Republican Respondents					
	Attitudinal index	0.416	0.460	0.044 (0.014, 0.075)	0.004
	Sharing Index	0.350	0.325	-0.024 (-0.065, 0.016)	0.238
	N	426	428		

Note: Significance tests of the differences between groups conducted using two-tailed t-tests.

14

Table B-4: Treatment estimates by respondent ideology

Subset	DV	Mean [MSNBC]	Mean [Fox]	Treatment Effect (95% CI)	p-value of difference
Liberal Respondents					
	Attitudinal index	0.259	0.268	0.009 (-0.017, 0.035)	0.504
	Sharing Index	0.438	0.327	-0.111 (-0.157, -0.064)	0.000
	N	458	417		
Conservative Respondents					
	Attitudinal index	0.430	0.478	0.048 (0.017, 0.078)	0.002
	Sharing Index	0.360	0.339	-0.022 (-0.063, 0.019)	0.297
	N	426	428		

Note: Significance tests of the differences between groups conducted using two-tailed t-tests.

Persuasion Effects for Individual Measures

Analyses of the individual measures that made up our summary measures were largely consistent with those on the indices. We found broad persuasion effects amongst respondents in the aggregate of watching Fox News relative to watching MSNBC. The first four rows in Table B-5 indicate that respondents report opinions that are more conservative after watching Fox News rather than MSNBC by between 0.02 and 0.07 along the 0-1 unit scale, or between 7 and 24 percent of a standard deviation in each outcome measure. These differences are statistically significant at the 90% level on six of the ten attitudinal variables cases.

Table B-5: Treatment estimates for all respondents on individual attitudinal questions

DV	Mean [MSNBC]	Mean [Fox]	Treatment Effect (95% CI)	p-value of difference
Addiction/crime tradeoff	0.387	0.401	0.014 (-0.01, 0.038)	0.264

Legalization would make econ better	0.290	0.353	0.063 (0.041, 0.086)	0.000
Regulation not worth it	0.332	0.351	0.019 (-0.006, 0.044)	0.136
Legalization would lead to fewer serious crimes	0.414	0.463	0.049 (0.022, 0.077)	0.000
Marijuana not morally wrong	0.337	0.368	0.031 (0.002, 0.059)	0.034
Marijuana use does not increase violent crime	0.381	0.403	0.022 (-0.005, 0.05)	0.115
Should be legal for medical use	0.178	0.213	0.035 (0.012, 0.058)	0.002
Not a serious problem	0.409	0.430	0.021 (-0.008, 0.05)	0.149
Should be legal for recreational use	0.355	0.400	0.045 (0.015, 0.075)	0.003
Marijuana is dangerous	0.431	0.475	0.044 (0.015, 0.074)	0.003
N	1190	1111		

Note: Significance tests of the differences between groups conducted using two-tailed t-tests.

Again, however, these differences mask the heterogeneity that may result from actual exposure by people with differing characteristics We present the estimates of persuasion on each of our individual measures among subgroups by partisanship, by ideology, and by media preferences.

Table B-6: Treatment estimates by respondent partisanship

Subset DV	Mean [MSNBC]	Mean [Fox]	Treatment Effect	p-value of difference
Democratic Respondents				
Addiction/crime tradeoff	0.333	0.336	0.004	0.846
Legalization would make econ worse	0.239	0.299	0.060	0.000
Regulation worth cost	0.287	0.290	0.003	0.878
Legalization would lead to fewer serious crimes	0.348	0.388	0.040	0.042
Marijuana morally wrong	0.266	0.285	0.018	0.381

Marijuana use increases violent crime	0.324	0.327	0.003	0.899
Should be legal for medical use	0.142	0.163	0.021	0.194
Marijuana is serious problem	0.349	0.341	-0.008	0.695
Should be legal for recreational use	0.265	0.303	0.038	0.071
Marijuana is dangerous	0.367	0.415	0.048	0.030
N	458	417		

Republican Respondents

Addiction/crime tradeoff	0.441	0.462	0.021	0.265
Legalization would make econ worse	0.334	0.411	0.077	0.000
Regulation worth cost	0.377	0.408	0.030	0.125
Legalization would lead to fewer serious crimes	0.481	0.541	0.060	0.008
Marijuana morally wrong	0.420	0.451	0.030	0.181
Marijuana use increases violent crime	0.455	0.488	0.034	0.124
Should be legal for medical use	0.212	0.262	0.049	0.009
Marijuana is serious problem	0.482	0.523	0.041	0.070
Should be legal for recreational use	0.450	0.503	0.053	0.034
Marijuana is dangerous	0.504	0.553	0.048	0.037
N	426	428		

Table B-7: Treatment estimates by respondent ideology

Subset DV	Mean [MSNBC]	Mean [Fox]	Treatment Effect	p-value of difference
Liberal Respondents				
Addiction/crime tradeoff	0.301	0.293	-0.008	0.692
Legalization would make econ worse	0.205	0.251	0.045	0.005
Regulation worth cost	0.254	0.264	0.009	0.666
Legalization would lead to fewer serious crimes	0.339	0.366	0.027	0.233
Marijuana morally wrong	0.217	0.237	0.020	0.382
Marijuana use increases violent crime	0.293	0.272	-0.021	0.354
Should be legal for medical use	0.117	0.120	0.004	0.824
Marijuana is serious problem	0.297	0.282	-0.015	0.514
Should be legal for recreational use	0.234	0.241	0.007	0.746
Marijuana is dangerous	0.328	0.353	0.025	0.290
N	353	317		
Conservative Respondents				
Addiction/crime tradeoff	0.442	0.465	0.023	0.227
Legalization would make econ worse	0.344	0.427	0.082	0.000
Regulation worth cost	0.369	0.416	0.047	0.019
Legalization would lead to fewer serious crimes	0.479	0.546	0.067	0.003
Marijuana morally wrong	0.451	0.484	0.033	0.148
Marijuana use increases violent crime	0.484	0.512	0.028	0.211
Should be legal for medical use	0.226	0.288	0.062	0.001
Marijuana is serious problem	0.512	0.543	0.031	0.162
Should be legal for recreational use	0.466	0.524	0.058	0.019
Marijuana is dangerous	0.529	0.575	0.046	0.048
N	426	432		

Table B-8: Treatment estimates by stated preferences

Subset DV	Mean [MSNBC]	Mean [Fox]	Treatment Effect	p-value of difference
Prefer Entertainment				
Addiction/crime tradeoff	0.378	0.408	0.031	0.148
Legalization would make econ worse	0.268	0.322	0.054	0.007
Regulation worth cost	0.335	0.340	0.005	0.803
Legalization would lead to fewer serious crimes	0.383	0.427	0.045	0.058
Marijuana morally wrong	0.304	0.363	0.060	0.019
Marijuana use increases violent crime	0.332	0.399	0.067	0.007
Should be legal for medical use	0.166	0.204	0.039	0.046
Marijuana is serious problem	0.364	0.419	0.055	0.030
Should be legal for recreational use	0.335	0.362	0.026	0.309
Marijuana is dangerous	0.398	0.456	0.059	0.030
N	375	355		
Prefer Fox				
Addiction/crime tradeoff	0.448	0.462	0.014	0.486
Legalization would make econ worse	0.338	0.419	0.081	0.000
Regulation worth cost	0.372	0.419	0.047	0.024
Legalization would lead to fewer serious crimes	0.462	0.525	0.063	0.007
Marijuana morally wrong	0.438	0.442	0.004	0.849
Marijuana use increases violent crime	0.469	0.478	0.009	0.685
Should be legal for medical use	0.225	0.259	0.034	0.083
Marijuana is serious problem	0.503	0.509	0.006	0.786
Should be legal for recreational use	0.428	0.497	0.070	0.006
Marijuana is dangerous	0.498	0.528	0.030	0.228
N	467	445		

Prefer MSNBC

Addiction/crime tradeoff	0.318	0.310	-0.008	0.703
Legalization would make econ worse	0.251	0.296	0.045	0.016
Regulation worth cost	0.277	0.270	-0.007	0.779
Legalization would lead to fewer serious crimes	0.384	0.418	0.033	0.186
Marijuana morally wrong	0.243	0.271	0.028	0.252
Marijuana use increases violent crime	0.317	0.303	-0.014	0.574
Should be legal for medical use	0.130	0.159	0.028	0.146
Marijuana is serious problem	0.333	0.332	-0.002	0.945
Should be legal for recreational use	0.282	0.307	0.025	0.346
Marijuana is dangerous	0.378	0.422	0.044	0.086
N	348	311		

Appendix C: Full Text of News Articles

<u>Fox News Article 1 (economy frame)</u>

Marijuana Legalization: An Economic Bust?

By Nicole Wilson | Published May 20, 2017 | Economy | FOXBusiness

The U.S. Congress Joint Economic Committee has scheduled a hearing next month on the potential economic impacts of the national legalization of recreational marijuana. In states that have legalized recreational marijuana such as Colorado, The sale of the drug is already a billion-dollar industry in states such as Colorado, where recreational marijuana is legal. Last year, Colorado pulled in $200 million from taxing the drug. As the federal government begins to consider the implications of legalization, economics have been a big part of the discussion.

Opponents of legalization say that the potential tax money legalization would create is meaningless. The government would have to use the extra funds to treat problems caused by increased marijuana use. These issues include traffic accidents, medical emergencies, and the cost of regulating the drug.

One legalization opponent at a recent Washington, D.C. rally opposed the economic argument: "Marijuana is a dangerous drug. Legalization will create far more problems than it solves. The government will have to use any money it gets in taxes to pay for the damaging effects of marijuana." Some potential costs the new revenue will have to cover include increased emergency room visits and treatment for those addicted to marijuana.

At the upcoming hearing, opponents of legalization hope to highlight the monetary costs of the marijuana debate. They hope to convince the Joint Economic Committee that the financial implications of a marijuana tax cannot be ignored.

<u>MSNBC Article 1 (economy frame)</u>

Marijuana Legalization: An Economic Boom?

5/26/17 4:15 PM
By Julia Langon
The U.S. Congress Joint Economic Committee has scheduled a hearing next month on the potential economic impacts of the national legalization of recreational marijuana. In states that have legalized recreational marijuana such as Colorado, the sale of the drug is already a billion-dollar industry in states such as Colorado, where recreational marijuana is legal. Last year, Colorado pulled in $200 million from taxing the drug. As the federal government begins to consider the implications of legalization, economics have been a big part of the discussion.

Supporters of legalization say that the government cannot ignore the potential tax money

legalization would create. Given that marijuana has been shown to be safer than other intoxicants such as alcohol, the government will not have to spend very much to regulate it. Instead, the government will be able to use the extra cash to fund social programs, including education and treatment centers for those suffering from drug addiction.

One legalization supporter at a recent Washington, D.C. rally promoted the economic argument: "Marijuana isn't a dangerous drug. Legalization will be a way for the government to get in on a market that already exists. It will be able to use that money for the public good."

At the upcoming hearing, supporters of legalization hope to highlight the monetary benefits of the marijuana debate. They hope to convince the Joint Economic Committee that the financial implications of a marijuana tax cannot be ignored.

Fox News Article 2 (public safety frame)

Public Safety Threatened By Marijuana Legalization, Opponents Say
Published June 3, 2017
By Arthur Davidson

The House Committee on Energy and Commerce has scheduled a series of hearings next month to explore national marijuana legalization. As the discussion gains traction in the House, public safety is a top concern for legislators. Anti-legalization advocates are working hard to promote their agendas to lawmakers. They say that legalization would make America a less safe place, as traffic accidents and other medical emergencies increase. As the hearings approach, these advocates hope to convince lawmakers of the dangers of marijuana legalization.

Legalization opponents claim that legalizing marijuana would make the country less safe for every American. Marijuana is an intoxicant, and its use can lead to harmful, or even fatal, accidents. Research shows that where marijuana is legal, car accidents and other marijuana-related emergencies have increased significantly. Opponents like Rep. Margaret Brooke want to make this risk clear: "Marijuana users do not only cause harm to themselves. They make our roads more dangerous, and fill our hospitals. Legalization would introduce another intoxicant to this country, at a huge cost to public health and safety." Legalization would make the drug more popular and widespread, creating a more dangerous environment for everyone.

As the hearings approach, anti-legalization groups are working hard on their case. The results of these hearings will have far-reaching consequences no matter what the committee decides.

MSNBC Article 2 (public safety frame)

Marijuana Legalization Will Improve Public Safety, Advocates Say
6/8/17 9:00 AM
By Brianna Jacobson

The House Committee on Energy and Commerce has scheduled a series of hearings next month to explore national marijuana legalization. As the discussion gains traction in the House, public safety is a top concern for legislators. Pro-legalization advocates are working hard to promote

their agendas to lawmakers. They say that legalization would make America a safer place, as the violent crime associated with the drug trade decreases. As the hearings approach, these advocates hope to convince lawmakers of the benefits of marijuana legalization.

Legalization advocates claim that legalizing marijuana would make the country safer for every American. Marijuana is linked to violent crime, and fuels a large black market. Research shows that marijuana is safer than alcohol - the danger comes not from the drug itself, but from the violent black market. Advocates like Rep. Margaret Brooke want to make this distinction clear: "Marijuana users only cause harm when they buy drugs on the black market. Legalization would help limit violent crime in America, at no cost to public health." Legalization would allow the government to regulate the sale of marijuana, creating a much safer environment for everyone. As the hearings approach, pro-legalization groups are working hard on their case. The results of these hearings will have far-reaching consequences no matter what the committee decides.

Fox News Article 3 (DHS/illegal drugs frame)
D.H.S. Raises Violence Concerns: Some Warn Marijuana Legalization Is Not Answer
Published June 16, 2017
By Julius Samuels

The U.S. Department of Homeland Security recently released statements about rising violence and illegal drug use in the U.S. The comments sparked another wave of debate over whether the federal government should legalize recreational marijuana. While marijuana is not the only drug sold illegally, it is the most commonly used illicit drug in the country. Opponents of marijuana say that legalization would greatly increase illegal activity, which would make the U.S. a more unsafe and unhealthy place to live.

Some say legalization would not eliminate the black market for marijuana. Opponents say that legal growing and purchase of marijuana would only strengthen the violent international drug trade. Farmers would legally be allowed to grow marijuana, creating an internal supply that could become a source for international drug cartels. The loss of the marijuana market could also encourage drug cartels to bring other hard drugs such as heroin and cocaine into the U.S. According to former National Drug Intelligence Center analyst Matt Petermann, "Legalization will put the U.S. on the illegal drug trade map as a source of marijuana. It will increase violence associated with the drug trade. It is a step towards a more dangerous America."

The Department of Homeland Security's reports give new urgency to the debate over legalization. Opponents of the cause hope to see movement on Capitol Hill towards a firm rejection of national legalization.

MSNBC Article 3 (DHS/illegal drugs frame)
D.H.S. Raises Violence Concerns: Marijuana Advocates Point to Legalization As Answer
6/17/17 10:15 AM
By Maria Valdes

The U.S. Department of Homeland Security recently released statements about rising violence and illegal drug use in the U.S. The comments sparked another wave of debate over whether the federal government should legalize recreational marijuana. While marijuana is not the only drug sold illegally, it is the most commonly used illicit drug in the country. Supporters of marijuana say that legalization would greatly decrease illegal activity, which would make the U.S. a safer and healthier place to live.

 Some say legalization would nearly eliminate the black market for marijuana. According to former National Drug Intelligence Center analyst Matt Petermann, "Legalization will help take the U.S. off the illegal drug trade map as a destination for marijuana. It will help eliminate violence associated with the drug trade. It is a step towards a safer America." Farmers would legally be allowed to grow marijuana, which would remove the need for illegal drugs from other countries. This could then decrease the amount of violence in the U.S. caused by the international drug trade. This might even damage drug cartels' other businesses, decreasing the supply of hard drugs such as heroin and cocaine to the U.S.

 The Department of Homeland Security's reports give new urgency to the debate over legalization. Supporters of the cause hope to see movement on Capitol Hill towards an embrace of national legalization.

Fox News Article 4 (hard drugs frame)
Marijuana Is A Gateway Drug, Legalization Opponents Say
Published July 8, 2017
By Moses Allen

 In recent weeks, the debate in the House over the federal legalization of recreational marijuana has intensified. A bipartisan legalization bill is rumored to be in the works. The proposal is expected at some point in the coming weeks. The question of national legalization has caught Congress' attention as public support for the measure increases quickly. Eight states have legalized recreational use so far.

 Some legalization opponents claim that allowing people to use marijuana legally would encourage the use of more dangerous drugs like heroin and cocaine. If marijuana is legalized, they say, Americans would be more likely to use it because there is no longer a risk of getting caught. Marijuana can serve as a gateway drug, leading people towards more dangerous substances. More marijuana users means more users of harder illegal drugs.

 For opponents such as Rep. Doug Hopper, the impact on hard drug use is very important. "The drug epidemic in the United States has gone on for too long without a solution. I believe that legalizing marijuana will only increase the use of hard drugs that have destroyed so many American lives. Legal marijuana could threaten the personal health and quality of life of many Americans."

 As Washington waits for a bill to be introduced in the House, opponents of marijuana legalization hope to see recognition for the drug's potential harms to the safety of Americans. Coverage of the bill will continue in the coming weeks.

Marijuana Fights Hard Drug Use, Legalization Supporters Say
5/15/17 3:25 PM
By Jonathan Lewis

In recent weeks, the debate in the House over the federal legalization of recreational marijuana has intensified. A bipartisan legalization bill is rumored to be in the works. The proposal is expected at some point in the coming weeks. The question of national legalization has caught Congress' attention as public support for the measure increases quickly. Eight states have legalized recreational use so far.

Some legalization supporters claim that allowing people to use marijuana legally would discourage the use of more dangerous drugs like heroin and cocaine. If marijuana is legalized, they say, America's drug users would be more likely to use it because there is no longer a risk of getting caught. This would pull attention away from harder illegal drugs.

For supporters such as Rep. Doug Hopper, the impact on hard drug use is very important. "The drug epidemic in the United States has gone on for too long without a solution. I believe that legalizing marijuana is an effective first step towards stopping the use of hard drugs that have destroyed so many American lives. Marijuana can even help drug addicts stop using more dangerous substances. Legal marijuana could improve the personal health and quality of life of many Americans."

As Washington waits for a bill to be introduced in the House, supporters of marijuana legalization hope to see recognition for the drug's potential benefits to the safety of Americans. Coverage of the bill will continue in the coming weeks.

Food Network Article 1
7 Habits of Smart Supermarket Shoppers
Practice these good habits to spend less time and money at the store.

1. Make a list. Organize your list into categories relevant to your household to save time spent scanning the list and aisles. Sticking to the list will curb impulse purchases, helping you make healthier decisions, remain on a budget and curb time spent browsing in aisles.

2. Stick to in-season produce. Fresh produce costs less in season, and it tastes better too. Buying it out of season means lower quality and higher prices.

3. Shop the perimeter. Stick to the outermost aisles of the store for the freshest options, which include produce, the meat and seafood departments, and the refrigerated dairy aisle. Fresh foods tend to be healthier than most ready-to-eat items typically found in the center aisles of a supermarket.

4. Read nutritional labels. Don't fall victim to marketing claims stamped on the front of a package. Buzzwords such as "Healthy" or "All-Natural" may sound good, but to understand what you're eating, scan nutritional labels, including the ingredients, to determine what you're buying. Health-minded shoppers should take note of the saturated fat, sodium and sugar content for each serving.

5. Skip the samples.   Snacking while shopping sends a message to your brain that it's time to eat, which may trigger the urge to impulse shop.

6. Reach for the back. Supermarkets generally practice the stocking principle of arranging older items toward the front of the display. For the freshest options when it comes to foods like milk and ground meat, dig around at the back of the display case for items marked with later expiration or sell-by dates.

7. Be wary of deals. Strategic wording by supermarkets may fool shoppers into believing they've scored a deal — signs boasting "Two for $8," "Limit 8 per customer" or "Special" may imply a sale without offering a cut off the full retail price.

Food Network Article 2

5 Ways You're Being Set Up by Your Supermarket
These sneaky tactics help supermarkets have consumers do their bidding.
By: Teri Tsang Barrett

1. FIFO: Or, rather, the rule of First In, First Out. Retailers stock perishables so older items are pushed to the front, where consumers will reach them first. When shopping for items like ground beef or milk, check the back of the stack for later sell-by dates — and a fresher product.

2. Samples: The more time consumers spend with a product, the more likely they are to spend. Samples awaken the senses, triggering the impulse to consume.

3. Eye-level positioning: Take note of options above and below eye level, as the items consumers spot first on shelves are likely expensive brands that can afford the costly real-estate location afforded to premium pricing. Bulk items tend to be positioned along the lower shelves of an aisle, out of the line of sight.

4. Extra-large shopping carts: Buying more than we need has been made possible by our ability to easily contain it.

5. Store soundtracks: The music heard in a store is designed to trigger positive associations and encourage more time spent in the store — retailers know that more time in a store means more time to spend money.

Food Network Article 3
The Dos and Don'ts of Shopping for Meat at the Supermarket
Follow these tips to be sure you're taking home a choice piece of meat.

By: Teri Tsang Barrett

DO get to know your butcher. Not only are you more likely to learn what's fresh or a great deal, you might score a butcher willing to go the extra mile by freshly grinding a large cut of meat (ground meat dries out quickly because there's more surface area) or portion a roast on sale into individual steaks.

DO make the meat counter the last stop. Don't let these highly perishables sit around in a shopping cart when strolling through the aisles. The more time meat spends at room temperature, the more likely unsafe bacterial growth can occur.

DO skip a package that isn't cold to the touch. All raw meat products need to be held in cool enough temperatures to ward off any safety concerns. If it's not cold, it's not worth the risk.

DON'T select a package containing excessive juices. Pools of pink- or red-tinged juices sealed in a package may be a sign of improper or prolonged storage.

DO place raw meat packages in plastic produce bags.   This will prevent any leaky juices from contaminating other foods and products in your cart.

DO check the date on the package.   If the sell-by date is quickly approaching, be prepared to freeze the meat or eat it right away. And check the packages of meat that are stacked underneath and out of reach — most supermarkets stack items with earlier sell-by dates on top and toward the front, where they're more likely to be picked up first.

Food Network Article 4
How Today's Supermarkets Are Totally Changing the Way You Shop
A look into how technology is changing how we shop for food.
By: Alex Van Buren

   If you've downloaded a supermarket's app, ordered groceries online, or sat down with a cup of coffee inside a grocery store, you can sense that the way we buy food these days is changing. Innovations in the grocery industry have been simmering for a while now, but lately it feels like things are ramping up. In particular, tech behemoth Amazon's recent purchase of Whole Foods (and how quickly they're already dropping prices at the notoriously spend-y chain) signals coming disruption that's going to be bigger than meal kits or digital coupons.

Robert Hetu, research director for Gartner, an information technology research company that advises retail clients, and Joseph Turow, author of the new book The Aisles Have Eyes, and professor at the Annenberg School for Communications at the University of Pennsylvania, agree that although grocery stores once lagged behind in this era's culture of change, they're quickly catching up.   Most of us are still shopping at brick and mortars, but online shopping (and that automatic re-order feature) is on the rise.

"Most grocery-store shopping is still done in the traditional way," Hetu says. But he thinks that "by 2020, about 50-percent of home products will be auto-replenished." If you choose to have

regular purchases (detergent, sandwich bags, even snacks) magically appear on your doorstep every so often, it totally changes your relationship with your grocery store.

Not only do auto-reordering features provide companies with data about how you use their products, but they also automate your loyalty to a specific brand. In a store, you might pass over your usual item if you see something new (or different brand at a sale price) on shelves. But if the same ol' dish soap shows up instantly, comparison shopping is not top of mind.

Appendix D: Survey Instrument

Variable names listed in bold with question text below, and survey logic highlighted.

agree
I agree to participate in a research study conducted by [Institution]. In order to analyze responses to the questionnaire, my answers will be recorded. No identifying information about me will be made public and any views I express will be kept completely confidential.

Findings from this study will be reported in scholarly journals, at academic seminars, and at research association meetings. The data will be stored at a secured location and retained indefinitely. My participation is voluntary. I am free to withdraw from the study at any time. Should you have questions, please contact us at [email]. Please select one of the following options. If you choose not to participate, the survey will end immediately.
- ○ I agree to participate (1)
- ○ I do not agree to participate (2)

[Brief section of demographic questions]

med_pref

We are interested in learning about what kinds of news articles people like to read. If you were given the choice of the news articles from the following three sources to read, which of the three would you choose?

MSNBC   *Fox News*   *The Food Network*

[Washout period with unrelated questions]
In this washout period we asked participants six political knowledge questions, three screener questions (Berinsky, Margolis, and Sances, 2014), four personality questions, and then two additional screener questions.

Q151 In the next part of this study, you will be asked several factual questions about politics and public policy. Many people don't know the answers to these questions, but it is helpful for us if you answer, even if you're not sure what the correct answer is. We encourage you to take a guess on every question. Please just give your best guess.

Do not look up the answers in a book or on the Internet. You will be given 20 seconds to respond to each question before the survey will advance.

Q152 Whose responsibility is it to decide if a law is constitutional or not?
- ○ The President (1)
- ○ Congress (2)
- ○ The Supreme Court (3)

Q154 Whose responsibility is it to nominate judges to Federal Courts?
- ○ The President (1)
- ○ Congress (2)
- ○ The Supreme Court (3)

Q156 Who is the Prime Minister of Great Britain? Is it:
- ○ Theresa May (1)
- ○ Angela Merkel (2)
- ○ Tony Hayward (3)
- ○ Richard Branson (4)

Q158 Do you know what job or political office is currently held by Paul Ryan? Is it:
- ○ Speaker of the House (1)
- ○ Treasury Secretary (2)
- ○ Senate Majority Leader (3)
- ○ Justice of The Supreme Court (4)
- ○ Governor of New Mexico (5)

Q160 Do you know what job or political office is currently held by Steve Mnuchin? Is it:
- ○ Attorney General (1)
- ○ Justice of the Supreme Court (2)
- ○ Treasury Secretary (3)
- ○ House Republican Leader (4)
- ○ Secretary of State (5)

scr_prob
There are many important issues facing our country today. Research shows that issues people think are important can affect their views on other issues. We also want to know if you are paying attention. Please ignore the question and put "crime" in the top position and "unemployment" in the bottom position. Leave the rest of the issues in the same order.

Please rank the following issues facing the nation from 1 (most important) to 7 (least important). You can change your rankings by dragging and dropping different issues.

_____ Health care (1)
_____ Unemployment (2)
_____ The federal budget deficit (3)
_____ The Afghanistan war (4)
_____ Crime (5)
_____ Education (6)
_____ Relations with other countries (7)

Q255 We would like to ask some questions about your media consumption.

Q214 During a typical week, how many days do you watch, read, or listen to news on TV, radio, printed newspapers, or the Internet, not including sports?

- ❍ 0 days (1)
- ❍ 1 (2)
- ❍ 2 (3)
- ❍ 3 (4)
- ❍ 4 (5)
- ❍ 5 (6)
- ❍ 6 (7)
- ❍ 7 days (8)

Q215 How much attention do you pay to news about national politics on TV, radio, printed newspapers, or the Internet?

- ❍ A great deal (1)
- ❍ A lot (2)
- ❍ A moderate amount (3)
- ❍ A little (4)
- ❍ None at all (5)

Q259 We are going to show you a series of statements. Please mark which of the statements best applies to you.

Q260 Some people have opinions about almost everything; other people have opinions about just some things; and still other people have very few opinions. What about you? Would you say you have opinions about almost everything, about many things, about some things, or about very few

things?

- ◯ Almost everything (1)
- ◯ Many things (2)
- ◯ Some things (3)
- ◯ Very few things (4)

Q261 Compared to the average person do you have fewer opinions about whether things are good or bad, about the same number of opinions, or more opinions?

- ◯ Fewer opinions (1)
- ◯ About the same number of opinions (2)
- ◯ More opinions (3)

Q262 Some people prefer to solve simple problems instead of complex ones, whereas other people prefer to solve more complex problems. Which type of problem do you prefer to solve: simple or complex?

- ◯ Simple (1)
- ◯ Complex (2)

Q263 Some people like to have responsibility for handling situations that require a lot of thinking, and other people don't like to have responsibility for situations like that. What about you? Do you like having responsibility for handling situations that require a lot of thinking, do you dislike it, or do you neither like it nor dislike it?

- ◯ Like (1)
- ◯ Dislike (2)
- ◯ Neither like nor dislike (3)

Q269 When a big news story breaks people often go online to get up-to-the-minute details on what is going on. We want to know which websites people trust to get this information.

When there is a big news story, which is the one news website you would visit first? (Please only choose one)

- ○ New York Times website (1)
- ○ Huffington Post (2)
- ○ Washington Post website (3)
- ○ CNN.com (4)
- ○ FoxNews.com (5)
- ○ MSNBC.com (6)
- ○ The Drudge Report (7)
- ○ Google News (8)
- ○ ABC News website (9)
- ○ CBS News website (10)
- ○ NBC News website (11)
- ○ Yahoo! News (12)
- ○ The Associated Press (AP) website (13)
- ○ Reuters website (14)
- ○ National Public Radio (NPR) website (15)
- ○ USA Today website (16)
- ○ New York Post Online (17)
- ○ None of these websites (18)

scr_sports Now we would like to get a sense of your general preferences.

Most modern theories of decision making recognize that decisions do not take place in a vacuum. Individual preferences and knowledge, along with situational variables can greatly impact the decision process. To demonstrate that you've read this much, just go ahead and select both football and swimming among the alternatives below, no matter what activities you participate in.

Which of these activities do you engage in regularly?

- ❑ Skiing (2)
- ❑ Football (3)
- ❑ Soccer (4)
- ❑ Swimming (5)
- ❑ Snowboarding (6)
- ❑ Tennis (7)
- ❑ Running (8)
- ❑ Basketball (9)
- ❑ Hockey (10)
- ❑ Cycling (11)

If forcedchoice Is Equal to 0

med_choice

We are interested in learning what people can remember from what they read in news articles. We would now like you to read some news articles, and then answer some questions about them. Which of these three articles would you like to read now? Please click on the picture of the news article you want to read.

If forcedchoice Is Equal to 1

Q245 You will find the first article on the next page. **Please read it carefully** before answering the following questions.

There will be a brief pause on the next screen so you can read the story. At the end of the pause, an arrow will appear at the bottom of the screen.

Once the arrow appears, you may move on to the next screen of the survey by clicking on the arrow.

[Respondents shown news article according to assigned condition or choice]

ideas We are interested in what you were thinking about during the articles you just read.

You might have had ideas all favorable to the articles or authors of the articles, all opposed, or a mixture of the two. Any case is fine; simply list what it was you were thinking while reading the articles. You should try to record only those ideas you were thinking about while you were reading. Please state your thoughts and ideas as concisely as possible - a phrase is sufficient. Don't worry about spelling, grammar, or punctuation.

There will be a brief pause of 20 seconds to allow you to write your thoughts. At the end of the pause, a button will appear allowing you to proceed with the survey. We have deliberately provided more space than we think most people will need to ensure that everyone would have plenty of room to write the ideas they had during the message. Please be completely honest about the thoughts that you had.

Q238 Now we would like to ask about your general opinions on the news articles that you just read.

actions
Thinking about the news articles you just read, how likely would you be to:
actions Thinking about the news articles you just read, how likely would you be to:

	Very likely (1)	Likely (2)	Somewhat likely (3)	Not likely (4)	Not sure (7)
Discuss the stories with a friend (actions_discuss)	❍	❍	❍	❍	❍
Forward the stories to a friend or colleague via email (actions_forward)	❍	❍	❍	❍	❍
Post a link to the stories on a social networking site, such as Facebook or Twitter (actions_post)	❍	❍	❍	❍	❍
Seek out additional information from another source on the topic featured in the stories (actions_4)	❍	❍	❍	❍	❍

If entertainment Is Not Equal to 1

Q167 Do you think these articles support or oppose the legalization of recreational marijuana in the U.S.? That is, where would you place the overall tone of the articles on the following scale?
- ◯ Definitely oppose (1)
- ◯ Somewhat oppose (2)
- ◯ Neither oppose nor support (3)
- ◯ Somewhat support (4)
- ◯ Definitely support (5)

Q246 Do you think these articles support or oppose the business decisions of large grocery stores? That is, where would you place the overall tone of the articles on the following scale?
- ◯ Definitely oppose (1)
- ◯ Somewhat oppose (2)
- ◯ Neither oppose nor support (3)
- ◯ Somewhat support (4)
- ◯ Definitely support (5)

Q168 How effective would you say these arguments are in making their case?
- ◯ Definitely not effective (1)
- ◯ Not effective (2)
- ◯ Not sure (3)
- ◯ Effective (4)
- ◯ Definitely effective (5)

Q169 Thinking about the issue of marijuana legalization, how well do you feel you understand this issue?
- ◯ Very well (1)
- ◯ Fairly well (2)
- ◯ Not very well (3)
- ◯ Not at all (4)

Q247 Thinking about the issue of how grocery stores organize their products, how well do you feel you understand this issue?
- ◯ Very well (1)
- ◯ Fairly well (2)
- ◯ Not very well (3)
- ◯ Not at all (4)

Q170 We hear a lot of talk these days about liberals and conservatives. Here is a seven-point scale on which the political views that people might hold are arranged from extremely liberal (1) to extremely conservative (7). Where would you place the articles that you just read on this scale?
○ Extremely Liberal (1)
○ Liberal (2)
○ Somewhat Liberal (3)
○ Moderate (4)
○ Somewhat Conservative (5)
○ Conservative (6)
○ Extremely Conservative (7)

word_pairs Below, you will find a list of pairs of words. Please rate the news articles you just read on each of the pairs of words.

fair Fair or unfair

	Very fair (1)	Quite fair (2)	Fair (3)	Neutral (4)	Unfair (5)	Quite unfair (6)	Very unfair (7)
(4)	○	○	○	○	○	○	○

friendly Friendly or hostile

	Very friendly (1)	Quite friendly (2)	Friendly (3)	Neutral (4)	Hostile (5)	Quite hostile (6)	Very hostile (7)
(4)	○	○	○	○	○	○	○

good Good or bad

	Very good (1)	Quite good (2)	Good (3)	Neutral (4)	Bad (5)	Quite bad (6)	Very bad (7)
(4)	○	○	○	○	○	○	○

quarrel Quarrelsome or cooperative

	Very quarrelsome (1)	Quite quarrelsome (2)	Quarrelsome (3)	Neutral (4)	Cooperative (5)	Quite cooperative (6)	Very cooperative (7)
(4)	○	○	○	○	○	○	○

balanced Balanced or skewed

	Very balanced (1)	Quite balanced (2)	Balanced (3)	Neutral (4)	Skewed (5)	Quite skewed (6)	Very skewed (7)
(4)	○	○	○	○	○	○	○

oneside One-sided or even-handed

	Very one-sided (1)	Quite one-sided (2)	One-sided (3)	Neutral (4)	Even-handed (5)	Quite even-handed (6)	Very even-handed (7)
(4)	○	○	○	○	○	○	○

american American or un-American

	Very American (1)	Quite American (2)	American (3)	Neutral (4)	Un-American (5)	Quite un-American (6)	Very un-American (7)
(4)	○	○	○	○	○	○	○

accurate Accurate or inaccurate

	Very accurate (1)	Quite accurate (2)	Accurate (3)	Neutral (4)	Inaccurate (5)	Quite inaccurate (6)	Very inaccurate (7)
(4)	○	○	○	○	○	○	○

Q136 Now we are going to ask about your attitudes towards different news sources.

trust_1 How much of the time do you think you can trust newspaper reporters to do what is right?
- ○ Just about always (1)
- ○ Most of the time (2)
- ○ Only some of the time (3)
- ○ Not at all (4)

trust_2 How much of the time do you think you can trust newspaper columnists to do what is right?
- ○ Just about always (1)
- ○ Most of the time (2)
- ○ Only some of the time (3)
- ○ Not at all (4)

trust_3 How much of the time do you think you can trust television news reporters to do what is right?
- ○ Just about always (1)
- ○ Most of the time (2)
- ○ Only some of the time (3)
- ○ Not at all (4)

trust_4 How much of the time do you think you can trust television news commentators to do what is right?
- ○ Just about always (1)
- ○ Most of the time (2)
- ○ Only some of the time (3)
- ○ Not at all (4)

issue_grid1 In the grid below, you will see a series of statements. Please tell us whether you agree or disagree with each statement.

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
NAFTA benefits the US more than it benefits Mexico (1)	○	○	○	○	○	○	○
Government efforts to enforce marijuana laws cost more than they are worth (2)	○	○	○	○	○	○	○
The criminal justice system in the US is biased against minorities (3)	○	○	○	○	○	○	○
I trust the police to protect me from violent crime. (4)	○	○	○	○	○	○	○
The legalization of marijuana leads to fewer people using more serious drugs, such as heroin and cocaine (5)	○	○	○	○	○	○	○
Free trade has hurt American manufacturing jobs (6)	○	○	○	○	○	○	○

Q178 Some people feel that habitual drug use should generally be considered a criminal offense and dealt with through the courts and criminal justice system. Suppose these people are on one end of the scale, at point 1. Others think that habitual drug use should generally be considered a substance abuse and addiction problem and dealt with through the medical and mental health systems. Suppose these people are at the other end, at point 7. And of course, some other people have opinions somewhere in between.

Where would you place YOURSELF on this scale?

○ Criminal offense 1 (1)
○ 2 (8)
○ 3 (2)
○ 4 (3)
○ 5 (4)
○ 6 (5)
○ Addiction problem 7 (6)

issue_grid2 In the grid below, you will see a series of statements. Please tell us whether you agree or disagree with each statement.

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
Using marijuana is morally wrong (1)	○	○	○	○	○	○	○
The US should put fewer restrictions on free trade. (3)	○	○	○	○	○	○	○
Marijuana use increases violent crime (4)	○	○	○	○	○	○	○
Immigrants increase crime rates (5)	○	○	○	○	○	○	○
NAFTA benefits Canada more than it benefits the US (6)	○	○	○	○	○	○	○
Marijuana should be legal for medical use (7)	○	○	○	○	○	○	○
There should be mandatory prison sentences for violent crimes (8)	○	○	○	○	○	○	○

Q184 If the sale and possession of marijuana were made legal, do you think it would make the economy better, make the economy worse, or have no effect on the economy?

❍ Make the economy much better (1)
❍ Make the economy somewhat better (2)
❍ No effect (3)
❍ Make the economy somewhat worse (4)
❍ Make the economy much worse (5)

issue_scnr_grid3 In the grid below, you will see a series of statements. Please tell us whether you agree or disagree with each statement.

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
Marijuana use is a serious problem today (1)	○	○	○	○	○	○	○
World War I came after World War II (2)	○	○	○	○	○	○	○
Stricter gun control laws would reduce violent crime in this country (3)	○	○	○	○	○	○	○
Marijuana should be legal for recreational use (4)	○	○	○	○	○	○	○
People convicted of murder should be given the death penalty (5)	○	○	○	○	○	○	○
Foreign trade is an opportunity for economic growth through increased U.S. exports (6)	○	○	○	○	○	○	○
Free trade agreements financially hurt my family (7)	○	○	○	○	○	○	○

Q175 How dangerous would you rate use of the following substances?

	Very dangerous (1)	Somewhat dangerous (2)	Not sure (3)	Somewhat safe (4)	Very safe (5)
Heroin (1)	O	O	O	O	O
Tobacco (2)	O	O	O	O	O
Alcohol (3)	O	O	O	O	O
Marijuana (4)	O	O	O	O	O
Cocaine (5)	O	O	O	O	O

grocery_scnr_grid In the grid below, you will see a series of statements. Please tell us whether you agree or disagree with each statement.

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
I feel like I get the best deals when I grocery shop. (1)	○	○	○	○	○	○	○
I am not overly familiar with how my grocery store is organized. (2)	○	○	○	○	○	○	○
I do my grocery shopping online. (3)	○	○	○	○	○	○	○
I am responsible for grocery shopping in my household. (4)	○	○	○	○	○	○	○
Obama was the first president of the U.S. (5)	○	○	○	○	○	○	○
I rarely grocery shop with a list. (6)	○	○	○	○	○	○	○

Q231 We would now like to ask you some questions about different media outlets.

Q229 How much of the time do you think you can trust the following media outlets to report the news fairly?

	Just about always (1)	Most of the time (8)	Only some of the time (2)	Almost Never (3)	Never (11)
Fox News (1)	❍	❍	❍	❍	❍
MSNBC (2)	❍	❍	❍	❍	❍
CNN (3)	❍	❍	❍	❍	❍
CBS (4)	❍	❍	❍	❍	❍
NBC (5)	❍	❍	❍	❍	❍
ABC (6)	❍	❍	❍	❍	❍
New York Times (7)	❍	❍	❍	❍	❍
Washington Post (8)	❍	❍	❍	❍	❍
Wall Street Journal (9)	❍	❍	❍	❍	❍
NPR (10)	❍	❍	❍	❍	❍
Huffington Post (11)	❍	❍	❍	❍	❍
Breitbart (12)	❍	❍	❍	❍	❍

Q230 How many days in the last week did you read, watch, or listen to a news story from the following outlets?

	0 days (1)	1 day (8)	2 days (2)	3 days (3)	4 days (4)	5 days (5)	6 days (6)	7 days (7)
Fox News (1)	○	○	○	○	○	○	○	○
MSNBC (2)	○	○	○	○	○	○	○	○
CNN (3)	○	○	○	○	○	○	○	○
CBS (4)	○	○	○	○	○	○	○	○
NBC (5)	○	○	○	○	○	○	○	○
ABC (6)	○	○	○	○	○	○	○	○
New York Times (7)	○	○	○	○	○	○	○	○
Washington Post (8)	○	○	○	○	○	○	○	○
Wall Street Journal (9)	○	○	○	○	○	○	○	○
NPR (10)	○	○	○	○	○	○	○	○
Huffington Post (11)	○	○	○	○	○	○	○	○
Breitbart (12)	○	○	○	○	○	○	○	○

Q231 We hear a lot of talk these days about liberals and conservatives. Here is a seven-point scale on which the political views that people might hold are arranged from extremely liberal (1)

to extremely conservative (7).   Where would you place the following news outlets on this scale?

	Extremely Liberal (1)	Liberal (8)	Somewhat Liberal (2)	Moderate (3)	Somewhat Conservative (4)	Conservative (5)	Extremely Conservative (6)
Fox News (1)	○	○	○	○	○	○	○
MSNBC (2)	○	○	○	○	○	○	○
CNN (3)	○	○	○	○	○	○	○
CBS (4)	○	○	○	○	○	○	○
NBC (5)	○	○	○	○	○	○	○
ABC (6)	○	○	○	○	○	○	○
New York Times (7)	○	○	○	○	○	○	○
Washington Post (8)	○	○	○	○	○	○	○
Wall Street Journal (9)	○	○	○	○	○	○	○
NPR (10)	○	○	○	○	○	○	○
Huffington Post (11)	○	○	○	○	○	○	○
Breitbart (12)	○	○	○	○	○	○	○

Q40 Finally, we would like to ask some more questions about your background.

race What racial or ethnic group(s) best describe(s) you?

❑ Black or African-American (non-Hispanic) (1)

❑ Asian/Pacific Islanders (2)

❑ Caucasian/White (non-Hispanic) (3)

❑ Latino or Hispanic (4)

❑ Native American or Aleut (5)

❑ Middle Eastern (6)

❑ Other (7)

educ What is the highest level of education you have completed?

- ⭘ Did not graduate from high school (1)
- ⭘ High school graduate (2)
- ⭘ Some college, but no degree (3)
- ⭘ 2-year college degree (4)
- ⭘ 4-year college degree (5)
- ⭘ Postgraduate degree (MA, MBA, MD, JD, PhD, etc.) (6)

income
Thinking back over the past year, what was your family's annual income?

- ⭘ Less than $10,000 (1)
- ⭘ $10,000-$14,999 (2)
- ⭘ $15,000-$19,999 (3)
- ⭘ $20,000-$24,999 (4)
- ⭘ $25,000-$29,999 (5)
- ⭘ $30,000-$39,999 (6)
- ⭘ $40,000-$49,999 (7)
- ⭘ $50,000-$59,999 (8)
- ⭘ $60,000-$69,999 (9)
- ⭘ $70,000-$79,999 (10)
- ⭘ $80,000-$99,999 (11)
- ⭘ $100,000-$119,999 (12)
- ⭘ $120,000-$149,999 (13)
- ⭘ $150,000 or more (14)
- ⭘ Prefer not to say (15)

> Display This Question:
>   If Thinking back over the past year, what was your family's annual income?   = $150,000 or more

Q254 What was your family's annual income last year?

○ $150,000-$199,999 (1)

○ $200,000-$249,999 (2)

○ $250,000-$349,999 (3)

○ $350,000-$499,999 (4)

○ $500,000 or more (5)

○ Prefer not to say (6)

marital Which of the following best describes your marital status?

○ Single, never married (1)

○ Married (3)

○ Divorced (4)

○ Separated (5)

○ Widowed (6)

○ Living with partner (7)

church Not counting weddings and funerals, how often do you attend religious services?

○ Never (1)

○ Less than once a year (2)

○ Once a year (3)

○ Several times a year (4)

○ Once a month (5)

○ Two or three times a month (6)

○ Nearly every week (7)

○ Every week (8)

○ More than once per week (9)

party1 Generally speaking, do you consider yourself a...

○ Democrat (1)

○ Republican (2)

○ Independent (3)

○ Other Party (4)

party2 Would you call yourself a strong Democrat or a not very strong Democrat?

○ Strong (1)

○ Not very strong (2)

party3 Would you call yourself a strong Republican or a not very strong Republican?

○ Strong (1)

○ Not very strong (2)

party4 Do you think of yourself as closer to the Republican Party or to the Democratic Party?

○ Closer to the Republican Party (1)

○ Closer to the Democratic Party (2)

○ Neither (3)

ideo1 Generally speaking, do you usually think of yourself as a liberal, a conservative, a moderate, or haven't you thought much about this?

○ Liberal (1)

○ Conservative (2)

○ Moderate (3)

○ Haven't thought much about it (4)

ideo2 Would you call yourself a strong liberal or a not very strong liberal?

○ Strong liberal (1)

○ Not very strong liberal (2)

ideo3 Would you call yourself a strong conservative or a not very strong conservative?

- ❍ Strong conservative (1)
- ❍ Not a very strong conservative (2)

ideo4 Do you think of yourself as closer to liberals or closer to conservatives?

- ❍ Closer to liberals (1)
- ❍ Closer to conservatives (2)
- ❍ Neither (3)

comments Thank you for answering our survey. Do you have any comments for us?

**Appendix E: Additional Results Using Other Issues and Samples**

In addition to the main results presented in the text of the paper, we conducted several replications using three additional political issues and survey samples. Across all replications, the results are largely consistent with the main results reported in the paper: among people who would prefer entertainment we found the most consistent and statistically significant persuasion on attitudinal questions in the conservative direction after consuming Fox rather than MSNBC. We also consistently found behavioral effects among people who prefer MSNBC that were lower than among other subgroups or in the negative direction and statistically significant, indicating an inclination against sharing media from Fox relative to sharing media from MSNBC for this group.

In the first of these additional experiments, we used video stimuli to test the effects of partisan media on 4,244 respondents recruited through Survey Sampling International (SSI).[1] We selected video clips from either Fox News (*The O'Reilly Factor*), MSNBC (*Hardball*), or the Discovery Channel (*Dirty Jobs*) and edited all videos to be between 75 and 90 seconds. The partisan media videos concerned the U.S. response to ISIS, and differed slightly in their content but were edited to make them as comparable as possible. Respondents were split into free choice and forced choice conditions following the exact same experimental design described in the main text of the paper. Following the videos, respondents answered four questions concerning future U.S. action vis a vis ISIS, which we formed into an additive attitudinal index, and four questions regarding potential actions they would take, which we formed into a sharing index. We use these two outcomes for comparability to the results presented in the main text.

---

[1] Survey Sampling International is the same company used to field the survey described in the main text of paper.

The results using this sample are similar to those in the main text. We present naïve treatment effects below in Figure E-1. For our attitudinal index, among those who prefer entertainment we find a treatment effect from watching Fox rather than MSNBC of 0.04 on the 0-1 scale (95% confidence interval: 0.02 to 0.07). Among those who prefer Fox we find a treatment effect of 0.03 (95% CI: -0.02 to 0.07) and among those who prefer MSNBC we find a treatment effect 0.07 (95% CI: 0.01 to 0.13). For the sharing index, we found a statistically significant effect in the positive direction among both those respondents who prefer entertainment and those who prefer Fox, while we found a negative and statistically insignificant effect among those who prefer MSNBC. The effect among respondents who preferred the entertainment option was an increase in sharing behavior of 0.07 (95% CI: 0.03 to 0.11) on the 0-1 scale. Among those who prefer to watch Fox, we find an increase in sharing behavior of 0.12 (95% CI: 0.05 to 0.18). Among those who prefer MSNBC, we find a decrease in sharing behavior of 0.03 (95% CI: -0.13 to 0.06).

**Figure E-1: Naïve Estimates, SSI ISIS experiment**
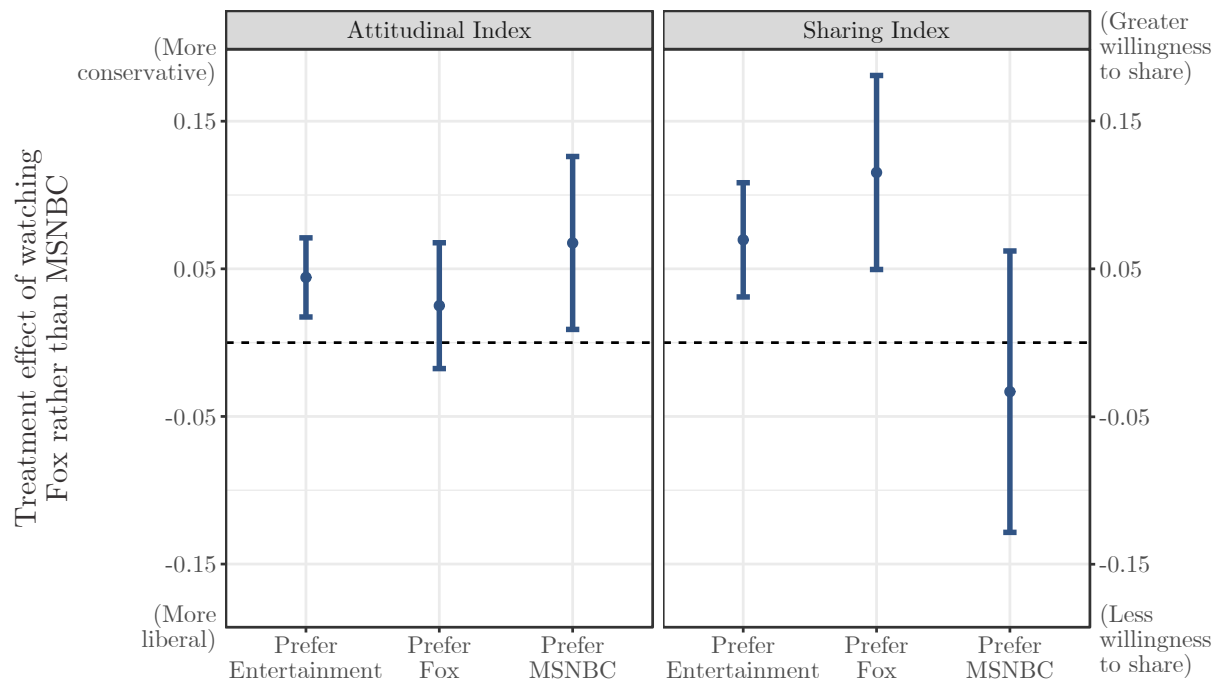
In the second of these additional experiments, we also used video stimuli to test the effects of partisan media, this time on 3,548 respondents who were again recruited via SSI. We selected video clips from either Fox News (*The O'Reilly Factor*), MSNBC (*The Rachel Maddow Show*), the Food Network (*Jamie's Kitchen*), or the Discovery Channel (*Dirty Jobs*) and edited all videos to be between 75 and 90 seconds. The partisan media videos concerned domestic oil drilling and specifically fracking, and again differed slightly in their emphases but were edited to make them as comparable as possible. Respondents were again split into free choice and forced choice conditions following the exact same experimental design described in the main text of the paper. Following the videos, respondents answered four questions concerning potential government action to combat climate change, which we formed into an additive attitudinal index, and four questions regarding potential actions they would take, which we formed into a sharing index. We use these two outcomes for comparability to the results presented in the main text.

The results from this sample are very similar to those presented in the main text, with attitudinal treatment effects in the conservative direction among both those who prefer entertainment and those who prefer Fox, and behavioral treatment effects in the negative direction among those who prefer MSNBC. We present naïve treatment effects below in Figure E-2. For our attitudinal index, our effects are largest in the entertainment and Fox preference subgroups. Among those who prefer entertainment we find a treatment effect from watching Fox rather than MSNBC of 0.04 on the 0-1 scale (95% confidence interval: -0.0007 to 0.07). Among those who prefer Fox we find a treatment effect of 0.05 (95% CI: -0.02 to 0.12) and among those who prefer MSNBC we find a treatment effect of -0.02 (95% CI: -0.07 to 0.04). For the sharing index, we found a statistically significant effect in the negative direction among those

respondents who prefer MSNBC, while we found effects that were statistically insignificant among those who prefer entertainment and Fox. The effect among respondents who preferred the entertainment option was a decrease in sharing behavior of 0.03 (95% CI: -0.07 to 0.01) on the 0-1 scale. Among those who prefer to watch Fox, we find an increase in sharing behavior of 0.02 (95% CI: -0.05 to 0.09). Among those who prefer MSNBC, we find a decrease in sharing behavior of 0.17 (95% CI: -0.25 to -0.08).

Figure E-2: Naïve Estimates, SSI Fracking experiment
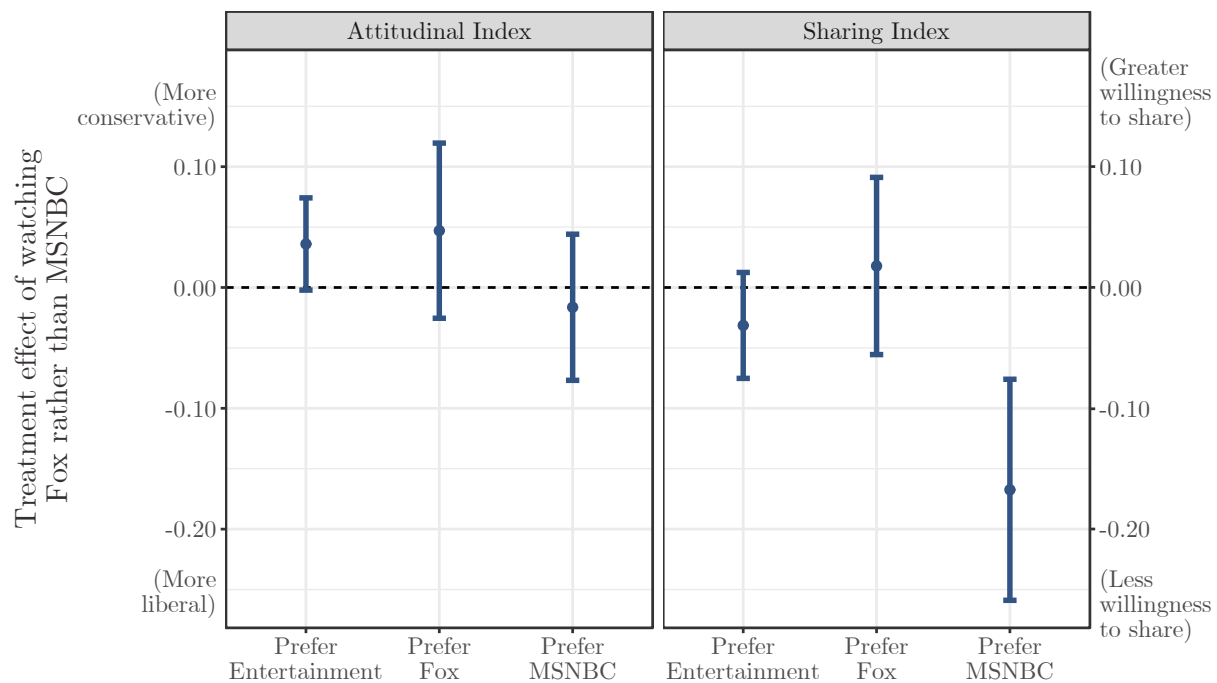
Finally, in the third of these additional experiments, we used text stimuli to test the effects of partisan media, this time on 3,513 respondents from the private survey sampling company comScore. We created text news stimuli by pulling text from real world news media, and presented respondents with stimuli labeled as from either Fox News, MSNBC, or the Food Network, much as with the experiment described in the main text. The partisan media articles concerned charter schools and the education system, and again differed slightly in their exact

wording but were edited to make them almost identical. Respondents were again split into free choice and forced choice conditions following the exact same experimental design described in the main text of the paper. Following the media stimuli, respondents answered twelve questions concerning education policy and charter schools, which we formed into an additive attitudinal index, and four questions regarding potential actions they would take, which we formed into a sharing index. We use these two outcomes for comparability to the results presented in the main text.

The results using this sample are largely similar to those presented in the main text and those presented above from the SSI ISIS experiment. We present naïve treatment effects below in Figure E-3. For our attitudinal index, the effect of watching Fox rather than MSNBC is statistically significant in all three subgroups, indicating persuasive effects of partisan media. Among those who prefer entertainment we find a treatment effect of 0.07 on the 0-1 scale (95% confidence interval: 0.03 to 0.11). Among those who prefer Fox we find a treatment effect of 0.05 (95% CI: 0.01 to 0.09) and among those who prefer MSNBC we find a treatment effect of 0.04 (95% CI: 0.01 to 0.06). For the sharing index, we again found a statistically significant effect in the negative direction among those respondents who prefer MSNBC, while we found effects that were statistically insignificant among those who prefer entertainment and Fox. The effect among respondents who preferred the entertainment option was a decrease in sharing behavior of 0.01 (95% CI: -0.08 to 0.06) on the 0-1 scale. Among those who prefer to watch Fox, we find an increase in sharing behavior of 0.04 (95% CI: -0.02 to 0.09). Among those who prefer MSNBC, we find a decrease in sharing behavior of 0.10 (95% CI: -0.14 to -0.05).

Figure E-3: Naïve Estimates, comScore Education experiment