Disentangling the causes and effects of partisan media choice in a polarized environment: research to date and a way forward

Does media choice cause polarization or does polarization cause media choice? This paper reviews the literature to date on this question, including research on selective exposure and persuasion, as well as on credibility, bias and trust. Establishing the direction of causality has proven empirically challenging, and the extant literature is decidedly mixed on the questions on whether partisan media can change attitudes, or merely reinforce them, as well as the extent to which people selectively expose themselves to news and information that reinforces their preexisting beliefs. Following this review, we identify shortcomings in the extant literature and propose several new methods aimed at moving this research program forward toward ultimately disentangling the relationship between partisan media, individual preferences, persuasion, and political attitudes and behavior.

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Introduction

In recent years, pundits, politicians, and ordinary citizens have expressed growing concern over political polarization in the United States. In a 2013 op-ed article, famed Clinton political guru James Carville writes, "I think a lot of people will look back at this point in American political history and wonder how things got so damn screwed up." Carville's explanation, arguably reflecting the most common widespread conventional wisdom, is that:

> "…as much as anything [it] is the disturbing fragmentation of the media. Today, conservatives can get all their information from conservative outlets, and liberals can get all their information from liberal outfits. And you can spend your whole life never being challenged, never having to hear or think about or confront viewpoints that are different from your own" (Carvill 2013).

The seeming implication is that in a world of fragmented media, peoples' pre-existing political attitudes determine their choices of news outlets. If so, this would represent a clear example of the psychological phenomenon known as *selective exposure* – the tendency to seek out information which reinforces existing views . Yet, later in the same article, Carville appears to reverse course, arguing that partisan media "makes both sides more dug in." The implication here is that the existence of a partisan media *cause,* or at least exacerbate, polarization. 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

the particular one-sided version of issues they consume consists of the unvarnished truth. Such a process of persuasion represents a quite different mechanism than selective exposure.

These two perspectives on the relationship between the media and the public stand at odds with one another. 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 media outlets by virtue of self-selection? Or is it the case that consumers of partisan news alter their views to reflect those presented in partisan 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. We are thus left to ask: is public polarization a cause or a consequence of the rise of the partisan media. As Carville's two-sided treatment suggests, the processes of selective exposure and persuasion are often conflated.

Empirically distinguishing between these two causal pathways is challenging. People are notoriously poor at estimating their own past behavior (Prior 2009) or predicting their future behavior (Clauson 1968). In this paper, we begin to move forward in disentangling the two causal processes. First, we review past efforts to disentangle the relationship between partisan media and polarization and discuss the shortcomings of that research. Second, we propose a set of new methods to answer this critical question. In this paper, we focus on one piece of the puzzle, considering how the effects of partisan media vary based on the preferences of the viewers of those stories. In doing so, we also consider the related question of how

accurately respondents' stated preferences predict their actual choices in experimental treatments designed to tease out the causes and effects of partisan media consumption.

Polarization as Cause or Effect of Persuasion?

A widespread concern in social science research, that has important implications for the study of media effects, is the problem of selection. Whenever social scientists observe a treatment effect – that is a difference between actors exposed to different stimuli -- in the real world when it is not possible to control who gets the treatment, the question arises as to whether the effect results from the treatment itself, or from pre-existing differences in the actors exposed to different treatments. In this case, studies designed to determine the effects of partisan media on polarization are ill equipped to determine whether some or all of the observed differences in attitudes among individuals exposed to different partisan information stem from differences in the information or in the individuals choosing to expose themselves to particular partisan information streams.

In recent years, many scholars (e.g., Levendusky, 2013; Arceneaux and Johnson, 2013; Prior, 2007) have explored the political consequences of increased media choice in the 21st century. To date, the results from investigations into the question of whether attitudes drive information seeking, or are driven by it, is decidedly mixed. There is no question that Americans are increasingly *able* to consume unbalanced news. The typical U.S. household now receives about 190 television channels, more than a tenfold increase since 1980 and up nearly 50% since

2008. This does not include countless offerings on radio, in print, and, of course, on the Internet. That said, since most Americans continue to predominantly rely on television for their news (Pew 2014), we primarily focus our discussion on television.

This explosion of media outlets has vastly increased the choices available to consumers and allowed for the development of ideological "niche" news programming (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, 2010). For instance, the public routinely associates Fox News and MSNBC as being heavily biased toward the Republican and Democratic parties, respectively (Ladd 2012). But do partisan media contribute to, or simply reflect, polarization among consumers? Most research to date has largely failed to address, let alone resolve, this question.

There are arguably three distinct strands of this research area. The first focuses on the possibility that media fragmentation *enhances* political polarization by the process of persuasion on the part of the partisan media. The second treats polarization as primarily, or at least significantly, as a *cause* of fragmentation through individuals' decisions to selectively expose themselves to partisan media. The third strand combines elements of both of the first two, focusing on potential effects on perceptions regarding the reliability and trustworthiness of the media in general, and beliefs about media bias in particular. In doing so, it considers resulting downstream effects on political attitudes and behavior.[1] We discuss each strand of

[1] Research on media trust might arguably be more accurately characterized as either a *mediator* of persuasion and selection, or even an *effect* thereof. However,

research, before turning to a discussion of the promise and limitations of existing research on these topics and proposing a corrective for one such limitation.

Selective Exposure

Research dating back to the 1940s has theorized about the potential role of selective exposure in explaining political attitudes. This research ,– perhaps most famously Lazarsfeld, Berelson, and Gaudet's (1948) study of the 1940 presidential election and Campbell et al.'s (1960) theory of minimalism --found evidence of such selective exposure to partisan information in media consumption patterns.

Since the 1960s, the literature has grown exponentially. Many researchers (Stroud 2011; Arceneaux *et al.* 2012; Gaines and Kuklinski 2011; Iyengar and Hahn 2009) have shown that Democrats and Republicans – especially the strongest (Kim 2009; Iyengar *et al.* 2008), and most politically engaged (Bennett and Iyengar 2008) partisans – prefer to consume news that supports their pre-existing beliefs while avoiding news that challenges those beliefs. To the extent that individuals are self-consciously selecting into ideologically friendly media environments, it appears that partisan or ideological preferences drive media choice.

Some additional research, however, has identified potential limits to self-selection. For instance, Messing and Westwood (2012) find that endorsements from other people in a person's social network can counteract the selectivity of partisans into ideologically consonant news. Gentzkow and Shapiro (2010), in turn, find that ideologically extreme people are actually *more*, rather than less, likely than their

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since this concept has been much more widely applied by scholars, for purposes of this review we treat it as an analytically distinct category.

more moderate counterparts to encounter ideologically opposing news sites on the internet. Of course, television and the Internet differ in numerous respects, complicating efforts to generalize across these media.

Despite this latter evidence that selective exposure is less than ubiquitous, a great deal of evidence suggests that it is a real phenomenon; one with potential consequences for the practice of politics because it can lead to increasingly insulated partisan information silos among the public. If individuals are only exposed to one side of the argument, compromise and moderation of views becomes less frequent as individuals are less likely to encounter information challenging their pre-existing attitudes. This possibility has prompted numerous scholars and political observers to worry about "me channels" (Sunstein 2001), "the daily me" (Negroponte 1995) – both alluding to self-imposed ideological stovepipes created by individuals -- and "filter bubbles" (Pariser 2012), whereby news providers contribute to the stovepipe by observing users' news choices and then filtering their offerings to that individual to match his or her revealed preferences. Each of these closely related concepts focuses on the potential dangers associated with individuals' insulating themselves, or being insulated by news providers, from opposing viewpoints in their media consumption.

Persuasion

The second school of thought argues that polarization results from the influence of media exposure on political attitudes; that is, through the process of *persuasion*.. This view represents a fairly recent turn in the literature. As noted above, early research by sociologists (e.g., Lazarsfeld, et al. 1948, Berelson, Lazarsfeld and McPhee 1954)) and social psychologists (Campbell et al. 1960)

advanced the selective exposure hypothesis and concluded that people's attitudes were largely immune to political persuasion via the media. Several decades later, the tide of evidence began to turn. Revisionist scholars countered that while media exposure may not necessarily change people's minds, the media could still influence expressed attitudes and behavior by changing what people think about, or how they think about it, through priming, framing, and agenda setting (e.g., Iyengar and Kinder 1987, Druckman 2001, Chong and Druckman 2007).

More recently, evidence for persuasion has begun to emerge. For instance, in his seminal study of public opinion Zaller (1992) argued that the lack of evidence for persuasion resulted from researchers looking in the wrong places. Zaller found that media exposure has limited effect on the attitudes of the least- and most-politically aware individuals, albeit for different reasons. The least politically aware individuals tended not to receive political messages from the media, while the most highly aware individuals possessed sufficient considerations regarding most issues that they were able to successfully counter-argue any dissonant messages to which they were exposed. This left the moderately politically aware most amenable to persuasion: they pay enough attention to be exposed to political messages but lack sufficient "ammunition" (in the form of considerations about issues) to beat back information they encountered that challenged their pre-existing beliefs. Notably, however, any resulting polarization effects from the process that Zaller's RAS (receive-accept-sample) model describes do not depend on the partisan orientation of the outlet presenting the information. Partisans are capable of filtering out pro- and counter-attitudinal information contained within a given news item that may, in

the net, be ideologically balanced. Zaller's model is similar in many respects to the theory of motivated reasoning, whereby individuals are "motivated" to accept pro-attitudinal, or consonant information, while rejecting counter-attitudinal, or dissonant information. The former is simply easier to process, requiring less cognitive effort, than the latter.

Building on Zaller's work, other scholars have searched for evidence of persuasion effects from partisan media. For instance, Levendusky (2013) finds that news attributed to right-leaning Fox News is more likely than news attributed to left-leaning MSNBC to persuade conservatives (for comparable findings, see also e.g., Feldman 2011b, Bullock 2011, Jerit and Barabas 2012). That said, some evidence has emerged suggesting that Americans are not yet entirely ensconced in impenetrable information silos. For instance, Dilliplane (2013) reports evidence that information from counter-attitudinal media may persuade even strong partisans and the highly politically aware. Along these lines, Feldman (2011a) finds that both pro- and counter-attitudinal visual media can influence political ideologues. However, the evidence on *when* partisan media are persuasive is mixed.

Additional research appears to suggest that partisan media can produce tangible persuasion effects. For instance, with respect to climate change, countless pundits, particularly on the left, have blamed Fox News for the widespread belief, primarily though by no means exclusively among Republicans, that either climate change is not real, or if it is real that humans are not contributing to it (Meyer 2012). Hmielowksi, Feldman, Myers, and Leiserowitz (2013: 13), in turn, conclude in part that "the more Americans use conservative media, the less certain they are that global

warming is happening." The clear implication of their findings is that partisan media have widened, if not created in the first instance, the divide on climate change between Democrats and Republicans, primarily by dissuading Republicans of its validity.

Media Trust and Political Attitudes and Behavior.

This third predominant strand of polarization research is arguably an extension of the prior two, rather than a separate enterprise. That said, because scholars have investigated the causes and effects of trust in numerous domains beyond persuasion and selective exposure, we treat it here as a separate category (though we also point out how trust mediates the prior two research strands we have discussed).

So, in the present context, we focus our attention on scholarly efforts to delineate the effects of media choice on polarization of *attitudes towards the media*. As noted above, confidence in traditional (TV, newspaper) and new (Internet) media outlets reached all-time lows in 2014. Indeed, according to Gallup, between 1976 and 2014, the percentage of Americans expressing "great deal" or "a fair amount" of trust in the media overall fell from 72 to 44 percent. A consequence of this distrust were on full dislpay in the 2016 Republican primary debates – particularly the October 28, 2016 CNBC debate -- where candidates from Ted Cruz to Marco Rubio to Ben Carson and Donald Trump earned among their strongest live audience and (fellow partisan) voter approbation with accusations of media bias against themselves and their party. Indeed, attacks on the media as biased and unreliable emerged as among the most reliable applause lines among Republican and

Independent voters in the 2016 primary campaign.

That said, objectively establishing the presence or absence of partisan bias in news content has proven difficult. Self-described media watchdog groups such as the Media Research Center (MRC), the Center for Media and Public Affairs (CMPA), and Fairness and Accuracy In Reporting (FAIR) claim to objectively analyze media content, yet they routinely disagree on the incidence, severity, and direction of bias in the media. Scholarly attempts to assess media bias are similarly inconclusive (e.g., Efron, 1971; Patterson, 1993; Sutter, 2001). Among the principal difficulties in establishing the presence or absence of media bias is establishing a clear definition of what exactly constitutes bias. Several recent studies (Groseclose 2011, Groseclose & Milyo, 2005; Gentzkow & Shapiro, 2006, Baum & Groeling 2008, Hamilton 2003) have sought to empirically measure mainstream news media content against various standards, but have come to very different conclusions.

Irrespective of the "truth," from a normative perspective, media trust is critical because people who distrust the media may conclude it cannot report in an unbiased manner and so dismiss its content as unreliable altogether. Moreover, ordinary citizens may also begin to see bias in what is actually objective and balanced political reporting. Numerous studies have found evidence of this so-called hostile media phenomenon (Vallone et al. 1985, Giner-Sorolla and Chaiken 1994, Peffley et al. 2001, Gunther and Schmitt 2004, Morehouse Mendez 2004, Baum and Gussin 2008), whereby typical individuals tend to view the media as biased against their own views. As a result, citizens may increasingly become suspicious of and antagonistic toward the news media more generally (Arceneaux *et al.*, 2012; Ladd,

2012). Ladd (2012), in fact, finds empirical evidence that rising public distrust in the media has reduced public willingness to accept information from the media as reliable. Instead, partisan predispositions increasingly drive public beliefs and voting behavior.

That said, a growing body of research shows that people react differently to identical content depending on whether or not they consider the source trustworthy and credible (Baum and Gussin, 2008; Druckman, Fein, and Leeper, 2012; Levendusky 2013, Baum and Groeling 2010). In particular, partisan reputation interacts with perceptions of credibility to mediate the persuasiveness of information appearing on partisan outlets. Along these lines, Baum and Groeling (2009) conducted an experiment in which they exposed participants to a news report about a congressional hearing on national security in which one or the other party praised or criticized the Bush Administration's policies. They modified the report to appear alternately as appearing on CNN or Fox News. They found that participants who saw criticism of the Republican president's policies on Fox, downgraded their assessments of the president's performance on national security. The same was not true of those who saw the identical criticism on CNN, The opposite pattern emerged for praise of the president's policies. The authors argue that this pattern is a result of calculations among the public. For a conservative outlet (Fox) to criticize a Republican president is costly rhetoric (that is, contrary to Fox's perceived interests), while for the more liberal CNN such criticism is perceived as cheap talk. Conversely, respondents perceived praise of a Republican on CNN as costly, while the same praise they viewed the same praise appearing on Fox as

cheap talk. This implies that exposure to partisan media can influence attitudes, albeit depending on whether viewers perceive the coverage in question as costly or cheap talk.

Additional research shows that when individuals encounter counter-attitudinal information, it can produce a backlash, resulting in even more polarized opinions (Zaller 1992) and greater hostility toward the media (Arceneaux, Johnson, and Murphy 2012). The selection of individuals into consuming media that reinforces their opinions could thus drive groups further apart both in their attitudes toward issues and people who disagree with them. Indeed, some additional evidence suggests that strong ideologues who select into partisan news sources become *more* ideologically extreme (Bullock 2011, Feldman 2011, Jerrit and Barabas, 2012), implying that exposure to partisan information streams can, via persuasion, increase polarization, even among already-somewhat-polarized partisans. These latter findings, along with those of Baum and Groeling (2010) and research on the hostile media phenomenon, combine to suggest an indirect pathway to polarization. That is, these findings raise the possibility that both selective exposure and persuasion may contribute to polarization *directly*, through their independent effects on media consumers, and also *indirectly*, through the effect of initial trust and perceived bias on the selection and acceptance of media content.

Conroy-Krutz and Moehler (2014), in turn, show that people will be more easily persuaded by opposing media when political cleavages are less clear in less polarized media environments (that is, non-overtly-partisan news outlets). Furthermore, individuals who are willing to watch counter-attitudinal media are

also likely to be persuaded by it (Levendusky 2013). The reason may be that relatively open-minded individuals are more likely to be inclined to expose themselves to counter-attitudinal media. If so, this pattern would be driven more by selection than persuasion. In general, when individuals perceive oppositional media as credible, they may also find it persuasive regardless of its perspective (Levendusky 2013b, Baum and Groeling 2008). This research suggests that even in an era of media consumption increasingly characterized by partisan self-selection, and even among strong partisans, there may still exist the potential for moderation of extreme ideological views.

Limitations and Promise of Existing Research

To date, when attempting to isolate the causal story underlying these hypothesized effects of media fragmentation, scholars have struggled to resolve the underlying selection problem. In other words, whenever social scientists observe a difference in the real world between individuals exposed to different treatments, the question arises as to whether the effect results from the treatment, or from pre-existing differences in the individuals exposed to different treatments. In this case, even controlled experiments designed to determine the effects of partisan media on polarization are ill equipped to determine whether some or all of the 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 particular information streams. Mapping from the laboratory to the real world introduces some difficult inferential problems.

Typical experiments begin by assessing participants' political partisanship and ideology. Researchers then present participants with one of two sets of treatments: (a) multiple news items from which to choose, or (b) a single randomly assigned news item, with participants subsequently asked their opinions on one or more issues over which partisans usually disagree. The former design allows investigators to determine the extent to which participants choose information sources compatible with their preexisting beliefs, as well as to measure differences in attitudes between participants exposed to different information sources. The latter design allows for investigation of persuasion effects for the single source, but does not account for the self-selection that takes place in the real world.

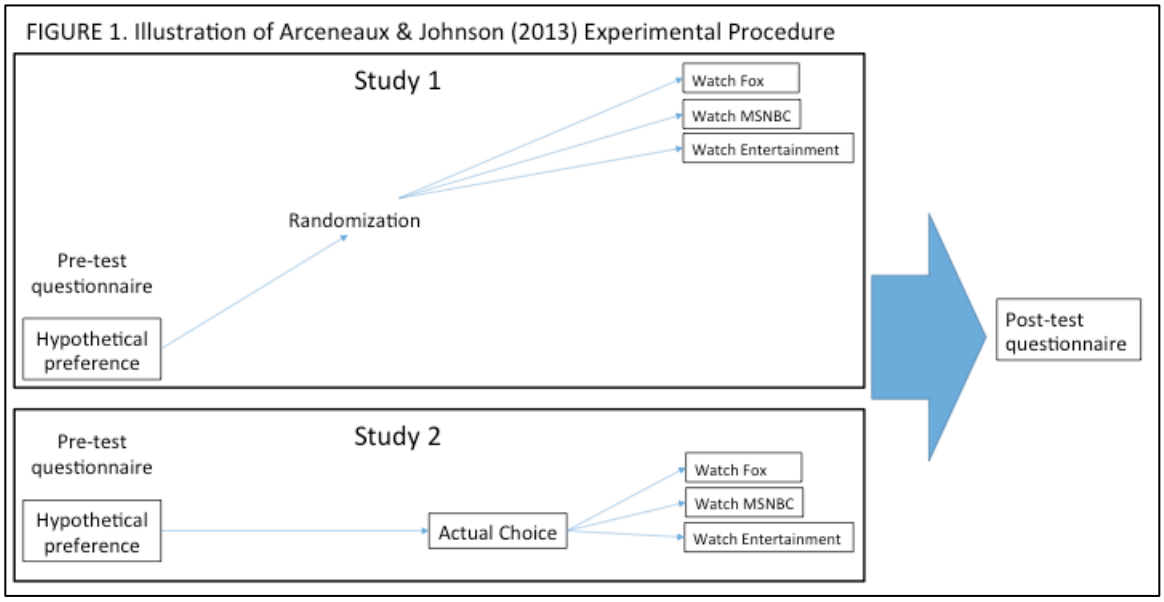
For instance, Feldman (2011a) exposed participants to one of three news clips related to health care reform from left-leaning (Countdown with Keith Olbermann), right-leaning (Glenn Beck), and centrist (NewsHour with Jim Lehrer) outlets. She then assessed attitude change among participants, depending on their partisan orientation. This study is well suited to measure the attitudinal effects of exposure to a particular information stream. Yet because it cannot account for the heterogeneity introduced by self-selection into media sources, it does not address the possibility that the observed treatment effects may be over-stated by virtue of forcing participants to watch a particular news item, irrespective of their preferences. Numerous studies (e.g., Levendusky 2013; Taniguchi 2011; Feldman 2011b; Jerit and Barabas 2012; Baum and Groeling 2009; Slothuus and de Vreese 2010 have employed similar designs to investigate variations on a similar theme: these studies all take up the question of how much effect does exposure to

information have on individuals' attitudes, conditioning on their partisanship, ideology, or political awareness.

Studies that account for self-selection through the second design are relatively rare. One recent example is Ellithorpe *et al.* (2013), who study the effects of different media environments on news consumption and attitudes, finding that the choice environment plays an important role in mediating the effects of media consumption on political attitudes. Natalie Stroud (Stroud, 2011), in turn, invited experimental subjects to participate in a laboratory study. In the waiting room, while they nominally waited to begin the study, she presented them with a variety of news and entertainment magazines that were simply placed on a table near where they were sitting. She observed their magazine choices and the amount of time they spent with each magazine to estimate the amount of selective exposure behavior.

Kevin Arceneaux and his colleagues (Arceneaux and Johnson, 2013; Arceneaux *et al.*, 2012) offer a variation on this theme that represents an important, yet incomplete, step forward. In both studies, Arceneaux and his colleagues conduct a series of experiments aimed in part at addressing the selection problem in polarization and persuasion research. In one set of studies, the methodology approximates the forced exposure design that experimenters studying motivated reasoning and persuasion typically utilize. As described above, the experimenters present a liberal, conservative, or entertainment news story to a respondent, and then observe the effects of that treatment on subsequent attitudes (see Study 1 in Figure 1, below). Arceneaux and his colleagues go one step further, however, by conducting parallel experiments in which they allowed participants to choose from

a menu of options – as is typical for experiments investigating selective exposure -- including both partisan news from the left and right and several entertainment programs (see Study 2 in Figure 1, below).



By comparing the observed attitudinal effects across studies, Arceneaux and his colleagues sought to estimate the extent to which observed treatment effects resulted from either selective exposure (attitudes driving exposure) or persuasion (exposure driving attitudes). Their primary conclusion is that partisan attitudes drive media exposure much more than exposure drives attitudes.

The Way Forward

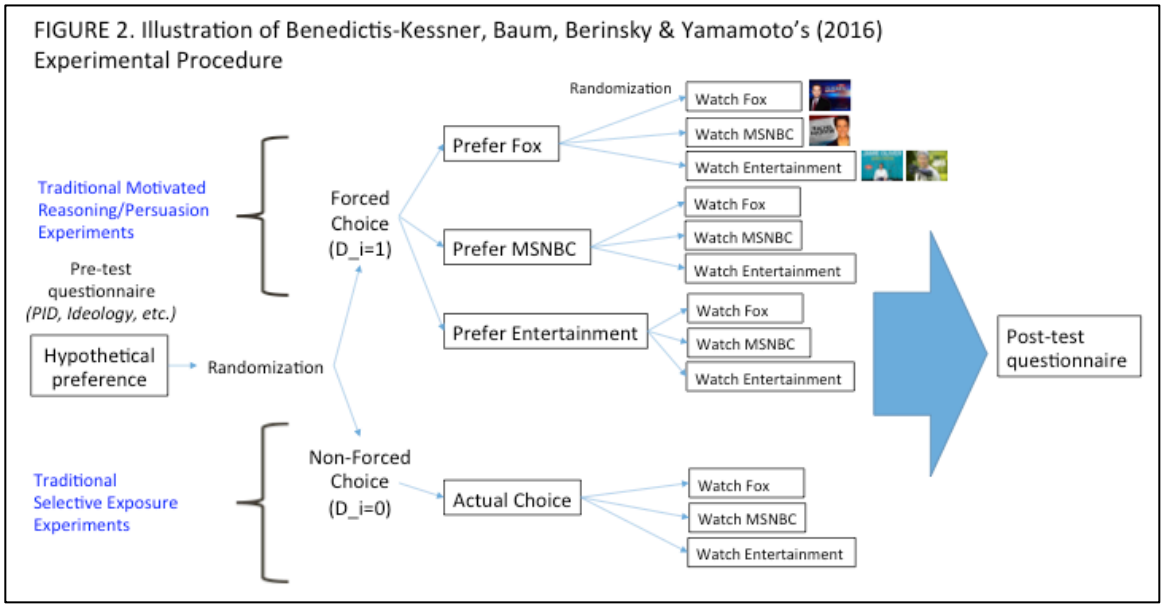
Sorting Out Cause and Effect

While Arceneaux and his colleagues have taken a significant step forward, their approach cannot fully resolve the direction of causality problem, as it does not allow random assignment across choice selection conditions. Nor does it correct for the effects of biased estimates of subjects' true media preferences and resulting

over-or under-estimates of the true likelihood of exposure. Consequently, we have no way of knowing whether respondents who watched, say, Fox News because they chose it were comparable to their counterparts who were assigned to watch Fox News.

More recently, we (Benedictis-Kessner, Baum, Berinsky, and Yamamoto 2016) attempt to address this dilemma by integrating both choice conditions into a single design. In this study, following a pre-test, participants are randomly assigned to either a forced choice or free choice treatment condition, where the two conditions approximate the aforementioned first and second designs, respectively, employed by Arceneaux and his colleagues. Participants in both conditions watched a news report on gas/oil prices from Fox (Bill O'Reilly) or MSNBC (Rachel Maddow), or an entertainment segment (from Jaime Oliver: Jaime's Kitchen or Dirty Jobs). This design – illustrated in Figure 2 -- makes it possible, to a greater extent than in prior research, to disentangle selection and persuasion.

FIGURE 2. Illustration of Benedictis-Kessner, Baum, Berinsky & Yamamoto's (2016) Experimental Procedure



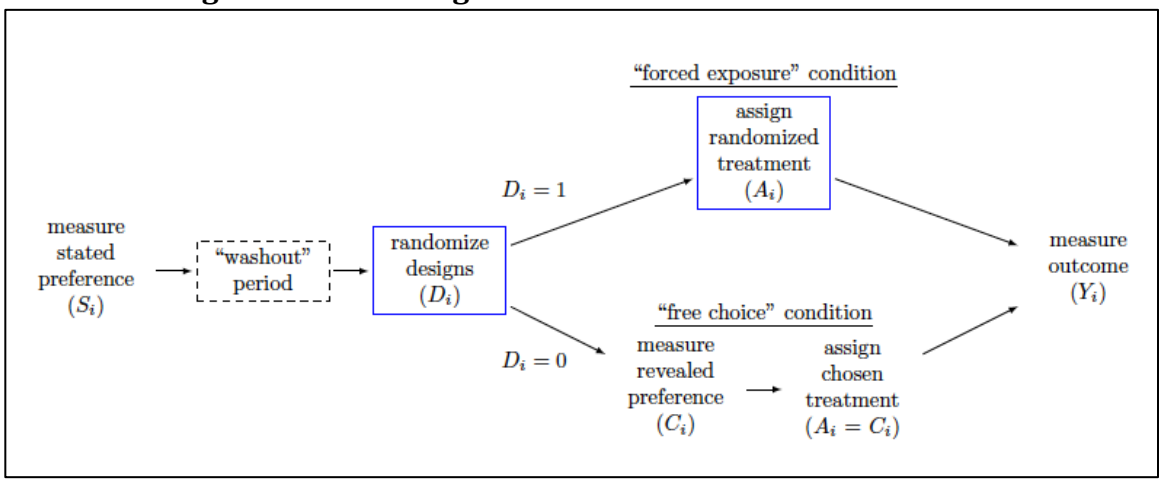
Ultimately, we find clear evidence of both selective exposure and persuasion among respondents exposed to both treatments. While most respondents, given the opportunity, do sort into viewing news from their side of the ideological spectrum, the majority of people – both partisans and independents – express a preference for entertainment rather than partisan news shows. This majority also appear to be persuadable, as watching partisan news produced substantive changes in their opinions.

Reliability of Preference Claims

In the same study (Benedictis-Kessner et al. 2016), we also develop an uncertainty correction procedure to estimate the effects of respondents misstating their true media preferences. This allows the researchers to estimate the sampling error in their data. The problem is that, for whatever reason, some respondents' true preferences may differ from their stated preference. Through a novel application of a patient preference trial (PPT), described in detail in a separate paper (Knox, Yamamoto, Baum, and Berinsky 2015), this procedure, illustrated in Figure 3, estimates minimum and maximum error margins in respondents' stated preferences.[2]

[2] The PPT approach has been utilized in prior social (e.g., Gaines and Kuklinski, 2011; Arceneaux, Johnson and Murphy, 2012) and medical (King et al., 2005; Howard and Thornicroft, 2006) science research.

FIGURE 3. Diagram of PPT Design



Note: blue boxes represent random assignment; dashed box indicates optional component.

The methodology consists of two parts. Participants first state their preferences – in this instance over media outlets -- in a pre-treatment survey (S_i). Following an optional "washout" period, the experiment then consists of randomizing them into one of two design conditions (D_i): either a standard RCT design ($D_i = 0$) or into a self-selection condition ($D_i = 1$), in which they can choose from a menu of media outlets. Their stated preferences do not influence their assigned condition. The experimenters then assess the outcome measure (Y_i).

The novelty of the design is that it allows the experimenters to measure the extent to which *ex ante* stated preferences predict *ex post* actual treatment (media outlet) choices. In particular, we implement a sensitivity analysis to estimate the assumed informativeness of subjects' stated preferences relative to their revealed preferences. We then use this analysis to assess the effects on the quantity of interest (in this case attitudes regarding several political issues) as this parameter varies. The end result is an improved estimate of the relationship between media consumption (the treatment) and political attitudes (the outcome variables). Figure

4 presents an illustrative example of findings from a pilot study implemented via Amazon Mechanical Turk and based on the aforementioned design from Benedictis-Kessner et al. (2016) employing this procedure.

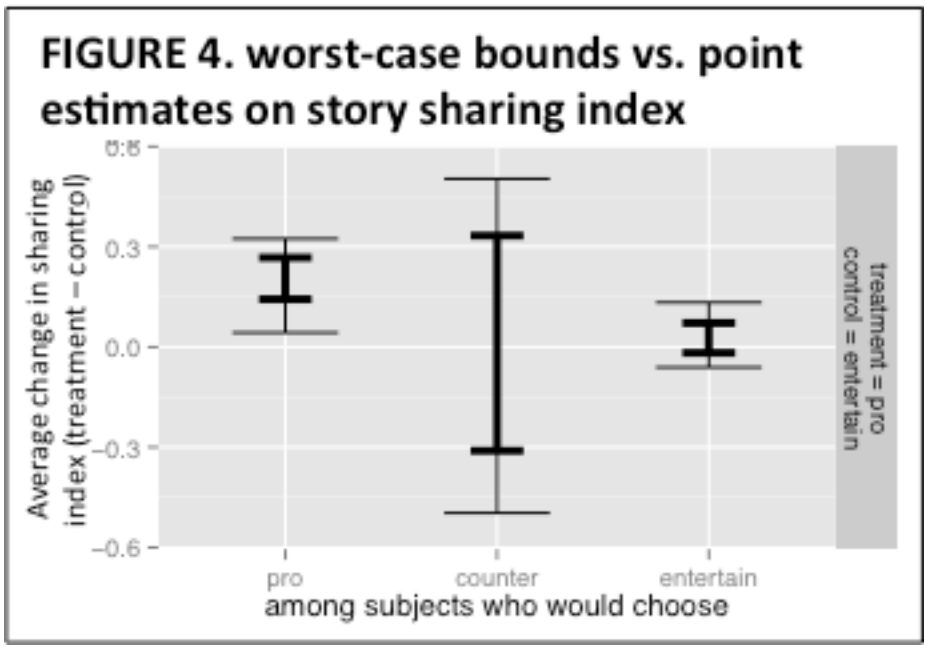


Figure 4 compares the results from point estimates, assuming no sampling error (thick bars), with those from confidence interval bounds that take sampling error into account via bootstrapping, and employing the aforementioned correction procedure (thin bars). The outcome variable in this instance is the propensity of participants to indicate that they would share the story segment they watched (via email or social media). This result compares the difference in propensity to share a pro-attitudinal news story (e.g., a Republican watching Fox or a Democrat watching MSNBC) with the propensity to share an entertainment story, among participants who expressed a preference for pro-attitudinal news, counter-attitudinal news or entertainment. These results show a strong positive increase in the propensity to share the story among individuals who preferred a pro-attitudinal video and were

assigned the pro-attitudinal video, regardless of assumption regarding confidence intervals. However, among individuals who preferred a counter-attitudinal video but were assigned a pro-attitudinal video, the point estimate surprisingly suggests a (marginally) significantly greater propensity to share the news story relative to respondents who preferred an entertainment video. This relationship disappears with the error correction procedure. In short, once the propensity of respondents to incorrectly predict their own behavior is taken into account, this seemingly counter-intuitive pattern does not emerge.

Conclusion

Scholars from numerous academic disciplines, ranging from sociology to psychology to economics to political science to communications, have devoted considerable attention throughout the post-World War II era to understanding how consuming information via the media influences public opinion. The explosion of consumer choice over the past several decades and with it the resurgence of an American partisan press, emerging in tandem with a parallel rise in partisan polarization and political gridlock in Washington D.C., has renewed scholarly interest to this research agenda. To date, scholars have made considerable progress in understanding the role of partisan media, in particular, in shaping political attitudes and discourse. Getting this story right seems particularly important in the current era, where 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 order address the many important issues

confronting the nation. To govern effectively, policymakers need scholarship that will help them determine when and how they might bridge these divides. Accurately assessing the media consumption choices of citizens and any resulting attitudinal effects represents one step in discerning a potential response to this quandary facing today's politicians and policymakers.

However, before such a step can be successfully taken, this research continues to confront important hurdles, such as addressing the problem of selection and its implications for the direction of causality. In this review we thus traced recent trends in scholarly research and proposed several potential methodological improvements aimed at achieving better estimates of the causes and effects of media choice in the contemporary era. The next step is to implement these methods for a variety of outcome variables and on more representative population samples.

References

Arceneaux, K. and Johnson, M. (2013). *Changing Minds or Changing Channels? Partisan News in an Age of Choice*. University of Chicago Press, Chicago.

Arceneaux, K., Johnson, M., and Murphy, C. (2012). Polarized political communication, oppositional media hostility, and selective exposure. *Journal of Politics*, 74(1), 174–186.

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

Baum, M. and Groeling, T. J. (2010) *War Stories: The Causes and Consequences of Public Views of War.* Princeton: Princeton University Press.

Baum, M. and Groeling, T. J. (2009). Shot by the messenger: partisan cues and public opinion regarding national security and war. *Political Behavior*, 31, 157–186.

Baum, M. and Gussin, P. 2008. "In the Eye of the Beholder: How Information Shortcuts Shape Individual Perceptions of Bias in the Media." *Quarterly Journal of Political Science* 3:1: 1-31

Benedictis-Kessner, Justin, Matthew A. Baum, Adam Berinsky, and Teppei Yamamoto. 2016. Disentangling Selective Exposure and Media Persuasion. Working Paper.

Berelson, Bernard R., and F. Paul. "Lazarsfeld, and William N. McPhee. 1954." *Voting: A study of opinion formation in a presidential campaign* (1963).

Bullock, J. (2011). Elite influence on public opinion in an informed electorate. *American Political Science Review*, 10(3), 496–515.

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

Carville, James. 2013. “Opinion: Disturbing polarization in media worsens political partisanship.” *The Hill* (10/15/13). Available at: http://thehill.com/opinion/columnists/james-carville/328731-polarization-in-media-worsens-partisanship (accessed on 10/15/15).

Chong, D. and Druckman, J. N. (2010). Dynamic public opinion: Communication effects over time. *American Political Science Review*, 104(04), 663–680.

Chong, Dennis, and James N. Druckman. "Framing theory." *Annu. Rev. Polit. Sci.* 10 (2007): 103-126.Clausen, Aage R. 1968. “Response Validity: Vote Report.” Public Opinion Quarterly 32(4):588–606.

Conroy-Krutz, Jeffrey, and Devra Moehler. *Ethnic Cues and Ballot Design*. Working Paper, University of Pennsylvania.(January 3, 2014), 2014.

Druckman, James N. "On the limits of framing effects: who can frame?." *Journal of Politics* 63.4 (2001): 1041-1066.

Druckman, James N., Jordan Fein, and Thomas J. Leeper. "A source of bias in public opinion stability." *American Political Science Review* 106.02 (2012): 430-454.

Ellithorpe, M. E., Holbert, R. L., and Palmer-Wackerly, A. L. (2013). Procrastination and the shifting political media environment: An experimental study of media choice affecting a democratic outcome. *Communication Studies*, 64(5), 561–578.

Feldman, L. (2011a). The opinion factor: The effects of opinionated news on information processing and attitude change. *Political Communication*, 28(2).

Feldman, L. (2011b). Partisan differences in opinionated news perceptions: A test of the hostile media effect. *Political Behavior*, 33(3), 407–432.

Gaines, B. J. and Kuklinski, J. H. (2011). Experimental estimation of heterogeneous

treatment effects related to self-selection. *American Journal of Political Science*, 55(3), 724–736.

Gallup (2014). Americans confidence in news remains low. http://www.gallup.com/poll/171740/americansconfidence-news-media-remains-low.aspx.

Gentzkow, Matthew, and Jesse M. Shapiro. *Ideological segregation online and offline*. No. w15916. National Bureau of Economic Research, 2010.

Gentzkow, Matthew, and Jesse M. Shapiro. *What drives media slant? Evidence from US daily newspapers*. No. w12707. National Bureau of Economic Research, 2006.

Giner-Sorolla, Roger, and Shelly Chaiken. "The causes of hostile media judgments." *Journal of Experimental Social Psychology* 30.2 (1994): 165-180.

Groeling, Tim. "Media bias by the numbers: Challenges and opportunities in the empirical study of partisan news." *Political Science* 16.1 (2013): 129.

Groseclose, Tim. *Left turn: How liberal media bias distorts the American mind*. Macmillan, 2011.

Groseclose, Tim, and Jeffrey Milyo. "A measure of media bias." *The Quarterly Journal of Economics* (2005): 1191-1237.

Gunther, Albert C., and Kathleen Schmitt. "Mapping boundaries of the hostile media effect." *Journal of Communication* 54.1 (2004): 55-70.

Hamilton, James T. 2003. *All the News That's Fit to Sell.* Princeton: Princeton University Press.

Hamilton, J. T. (2005). The market and the media. In G. Overholser and K. H. Jamieson, editors, *The Press*. Oxford University Press, Oxford.

Hmielowski, J. D., Feldman, L., Myers, T. A., Leiserowitz, A., and Maibach, E. (2014).

An attack on åscience? media use, trust in scientists, and perceptions of global warming. *Public Understanding of Science*, 23(7), 866–883.

Howard, Louise and Graham Thornicroft. 2006. "Patient preference randomised controlled trials in mental health research." The British Journal of Psychiatry 188(4):303–304.

Iyengar, S. and Hahn, K. S. (2009). Red media, blue media: evidence of ideological selectivity in media use. *Journal of Communication*, 59, 19–39.

Iyengar, S., Hahn, K. S., Krosnick, J. A., and Walker, J. (2008). Selective exposure to campaign communication: The role of anticipated agreement and issue public membership. *The Journal of Politics*, 70, 186–200.

Iyengar, Shanto, and Donald R. Kinder. "News that matters: agenda setting and priming in a television age." *News that Matters: Agenda-Setting and Priming in a Television Age* (1987).

Jacobson, G. C. (2014). Partisan media and electoral polarization in 2012: Evidence from the american national election study. Conference on American Gridlock.

Jerit, J. and Barabas, J. (2012). Partisan perceptual bias and the information environment. *The Journal of Politics*, 74(3), 672–684.

Kim, Y. M. (2009). Issue publics in the new information environment: Selectivity, domain specificity, and extremity. *Communication Research*, 36, 254–284.

Knox, Dean, Teppei Yamamoto, Matthew A. Baum, and Adam Berinsky. 2015. Design, Identification, and Sensitivity Analysis for Patient Preference Trials. Paper originally prepared for the 2014 Society for Political Methodology Summer Meeting and MacMillan-CSAP Workshop at Yale University (updated Nov 2015).

King, M., Nazareth, I., Lampe, F., Bower, P., Chandler, M., Morou, M., Sibbald, B., and Lai, R. (2005). Impact of participant and physician intervention preferences on randomized trials: a systematic review. *Jourmal of the American Medical Association*, 293(9), 1089–1099.

Ladd, J. M. (2012). *Why Americans Hate the Media and How It Matters*. Princeton University Press, Princeton.

Lazarsfeld, Paul Felix, Bernard Berelson, and Hazel Gaudet. "The peoples choice: how the voter makes up his mind in a presidential campaign." (1968).

Levendusky, M. S. (2013). Why do partisan media polarize viewers? *American Journal of Political Science*, 57(3), 611–623.

Messing, Solomon, and Sean J. Westwood. "Selective exposure in the age of social media: Endorsements trump partisan source affiliation when selecting news online." *Communication Research* (2012): 0093650212466406.

Meyer, Frederick. 2012. Stories of Climate Change: Competing Narratives, the Media, and U.S. Public Opinion 2001-2010. Shorenstein Center on the Media, Press, and Public Policy, Discussion Paper #D-72 (February).

Morehouse Mendez, Jeanette. "Killing the messenger: An experimental analysis of the hostile media effect." *meeting of the Southern Political Science Association, New Orleans, LA*. 2004.

Negroponte, Nicholas. "Being Digital-A Book (p) review." *Wired. com* 3 (1995).

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

Peffley, Mark, Jason Glass, and James Avery. "Public perceptions of bias in the news media: Taking a closer look at the hostile media phenomenon." *Meeting of the*

Midwest Political Science Association, Chicago, IL. 2001.

Pew Research Center. 2014. State of the News Media 2014. Available at: *http://www.journalism.org/packages/state-of-the-news-media-2014/* (Accessed 12/21/15).

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

Prior, Markus. 2009. "The Immensely Inflated News Audience: Assessing Bias in Self-Reported News Exposure." Public Opinion Quarterly 73:1–14.Rosenbaum, P. R. (2002). *Observational Studies*. Springer-Verlag, New York, 2nd edition.

Slothuus, R. and de Vreese, C. (2010). Political parties, motivated reasoning, and issue framing effects. *The Journal of Politics*, 72(3), 630–645.

Stroud, N. J. (2011). *The Politics of News Choice*. Oxford University Press, Oxford.

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

Taniguchi, M. (2011). The electoral consequences of candidate appearances on soft news programs. *Political Communication*, 28(1).

Vallone, Robert P., Lee Ross, and Mark R. Lepper. "The hostile media phenomenon: biased perception and perceptions of media bias in coverage of the Beirut massacre." *Journal of personality and social psychology* 49.3 (1985): 577.Weprin, A. (2013). Bill clinton turns media critic on cnn. Online, The Blaze.com.

Yamamoto, T. (2012). Understanding the past: Statistical analysis of causal attribution. *American Journal of Political Science*, 56(1), 237–256.

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