The Reinforcing Effects of Fox News*

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Abstract

In recent decades, cable television has expanded Americans’ choices for televised news substantially. This paper examines whether access to a more conservative news source—the Fox News cable channel— influences vote intentions. According to prior media effects research, the most likely impact of Fox News access is to reinforce voters’ predispositions and thus to polarize public opinion. To test that possibility with individual-level data, we identify local Fox News availability for 22,592 respondents to the 2000 National Annenberg Election Survey. Using aggregate-level voting data, DellaVigna and Kaplan (2007) finds a pro-Republican effect of Fox News access that is largest in Democratic communities. In contrast, we find an average treatment effect indistinguishable from zero. Yet we also find a sizable effect on the vote intentions of Republicans and pure independents. Consistent with a long tradition of media effects studies, access to Fox News reinforces Republican loyalties without persuading Democrats to vote against their party.

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1 Introduction

In the span of a few decades, the American news media landscape has undergone dramatic changes. Network television and print journalism were once pre-eminent sources of information about government and politics. But the audiences of both sources have declined, as Americans increasingly turn to cable television channels, radio programs, and the Internet for political information (e.g. Baum and Kernell, 1999; Prior, 2007; Hollander, 2008). In 1991, 68% of Americans reported watching network newscasts and 56% reported reading at least one newspaper. By 2010, those figures had dropped to 58% and 31%, respectively (Pew Center for the People and the Press, 2010).\(^1\)

News options in the modern era are not just different in number and mode but also in content. Many newer media outlets de-emphasize the “ideal of objectivity” (Schudson, 1978) and attract an audience by providing more overtly ideological perspectives on the news (Gentzkow and Shapiro, 2006; Jamieson and Cappella, 2008; Gasper, 2009; Bernhardt, Krasa and Polborn, 2008; Stroud, 2008, 2011). The growth of the Fox News cable channel epitomizes these trends. In the years after its 1996 introduction, Fox gradually became available on more cable systems, with the proportion of Americans identifying as regular viewers climbing to 23% by 2010 (Pew Center for the People and the Press, 2010). Fox’s growth increased the number of news sources available to television viewers and made available a different style of news. Among its innovations, Fox provided more opinion commentary and a more conservative version of news coverage than did its competitors (Groseclose and Milyo, 2005; Jamieson and Cappella, 2008; Gasper, 2011). Its audience reflects the channel’s relatively conservative slant: in 2010, its viewership contained over twice as many Republicans as Democrats (Pew Center for the People and the Press, 2010).\(^2\)

In this paper, we estimate the impact of Fox News availability on Presidential vote choice

\(^1\)Using ratings rather than survey data to measure media use shows an even steeper decline. They indicate that from 1980 to 2010 network evening newscasts’ viewership declined by 28.9 million people, or 55.5% (Project for Excellence in Journalism, 2011).

\(^2\)In contrast, rivals CNN and MSNBC each had a viewership containing twice as many Democrats as Republicans in 2010 (Pew Center for the People and the Press, 2010).
Researchers have long been interested in the potential of the news media to influence political attitudes and behaviors, whether through partisan reinforcement, priming, framing, persuasion, or other mechanisms (see Iyengar and Kinder, 1987; Druckman and Lupia, 2000; Kinder, 2003). But the rapid changes in the U.S. media environment have the potential to unsettle past conclusions (Bennett and Iyengar, 2008), as Americans can now more easily choose media sources with a political slant matching their predispositions (e.g. Stroud, 2011). To understand media effects in today’s competitive environment, one cannot look only at exposure to conventional news sources. Instead, it is critical to consider the effect of access to ideologically distinctive outlets within a competitive marketplace. Since both choices about media use and reactions to media content are likely to depend on political predispositions, it is also important to consider whether the effects of this access vary based on viewers’ partisan loyalties.

A major theme of past research is the capacity of news media exposure to reinforce citizens’ prior political predispositions (e.g. Berelson, Lazarsfeld and McPhee, 1954; Abramowitz, 1978; Gelman and King, 1993; Ansolabehere and Iyengar, 1995; Taber and Lodge, 2006). Today’s competitive and diverse media marketplace may enhance partisan reinforcement, and thus increase political polarization (e.g. Prior, 2007; Hollander, 2008; Stroud, 2010, 2011). Alternately, it is plausible that the proliferation of partisan news options could reduce the prevalence of media effects altogether, as people increasingly consume only media messages with which they agree (e.g. Bennett and Iyengar, 2008).

Yet a prominent study of Fox News’ political impact finds a different type of media influence. DellaVigna and Kaplan (2007) estimates the effect of Fox News availability on Presidential voting in 2000 by exploiting the fact that even four years after its introduction, Fox News was only available in 20 percent of U.S. municipalities. That study concludes that Fox News access increases town-level support for the Republican Presidential candidate by 0.4 to 0.7 percentage points—and that Fox News’ pro-Republican persuasion effects appear concentrated among Democrats, or at least among Democratic communities. Rather than primarily

\[^3\text{But see Feldman (2011).}\]
producing partisan reinforcement, Fox News access appears to convince some Democrats to support the Republican candidate.

Our paper also uses Fox News’ incomplete availability during the 2000 election to consider the effect of access to Fox News on presidential voting. Yet instead of using aggregate-level election returns as a measure of voter preferences, we combine data on which cable systems offered Fox News with individual-level survey data on candidate preferences from the National Annenberg Election Survey (NAES). In total, we are able to use respondents’ ZIP codes to identify their town’s Fox News availability for 22,592 respondents in 26 states, giving us substantial statistical power to estimate the effects of access to the channel.

Individual-level data offer several advantages. They enable our analyses to sidestep the ecological inference problem. They allow us to relax key assumptions through the introduction of individual- and ZIP-code level control variables, which we employ alongside town-level controls. The individual-level data also make it possible to estimate variation in the impact of Fox News access across political predispositions, an important consideration given the increased partisan sorting of today’s media audience.4

Our results indicate that the current media environment may enhance partisan reinforcement, but without persuading more broadly. We find no strong evidence of an overall Fox News effect, as those respondents living in towns with Fox News availability are not demonstrably more likely to support then-Republican candidate George W. Bush. The estimated treatment effect of living in a town with Fox News is 1.5 percentage points in the direction of Bush, but is less than zero in 20% of simulations. For Democrats and Democratic-leaning voters, the estimated effect is small and negative in direction. Yet we do detect an effect among those respondents most likely to be tuning in to Fox News and to agree with its slant. Among Republican identifiers, Republican leaners, and pure independents, the estimated treatment effect is 2.6 percentage points, with a 95% confidence interval from -0.07 to 5.3 percentage points.

4The 2000 election offers a valuable opportunity to explore differential effects across partisans, because the Fox News audience was less clearly partisan than it is today, a point developed below. A significant number of Democrats were still watching Fox News in 2000, allowing us to test for either out-party persuasion or resistance of Fox’s messages.
Research by Hainmueller (2012, online appendix) raises concerns about the sensitivity of prior estimates based on town-level data. Our own research into the process through which Fox News access expanded reinforces these concerns, indicating that Fox News initially targeted larger cable providers and larger communities. In response, we conduct additional analyses using matching as a pre-processing step (Ho et al., 2007) to focus attention on those respondents without Fox News access who are most similar to those with such access. The core result holds for Republicans and pure independents even in this much smaller matched data set, affirming its robustness. As in DellaVigna and Kaplan (2007), two separate placebo tests indicate that Fox News availability in 2003 produces no such “effects” on 2000 voting, and that Fox News’ availability in 2000 is not conditionally correlated with changes in town-level Presidential vote shares between 1992 and 1996. Also, we find that conditional on our model, residents in towns with Fox News access are slightly more Democratic than residents elsewhere. Together, these results suggest that the apparent causal effects we attribute to Fox News are not driven by any deliberate targeting of Republican-leaning communities as the channel expanded.

2 Media Effects on Voting Preferences

The U.S. media market has been changing swiftly, as new modes and styles fragment the audience for news. Recent decades have also seen shifts in how scholars understand media effects and in the empirical strategies they employ to estimate them. This section outlines these theoretical approaches and prior findings. In doing so, it develops hypotheses about the likely attitudinal impacts of contemporary outlets such as Fox News. Does the availability of a media outlet with a distinctive ideological slant persuade voters—and if so, whom? Is the persuasion primarily among those predisposed to agree with the message, or does it occur among out-partisans as well? This section also considers how increasing choice among media outlets might influence the prevalence and types of media effects. Throughout, building on O’Keefe (2002), we define persuasion as a successful effort to durably influence another’s
mental state through communication.\textsuperscript{5} Decades ago, a consensus existed among political communication scholars that the effects of the news media were “minimal” (e.g. Klapper, 1960). This work argued that the media rarely swayed people from their partisan tendencies. Instead, media exposure’s main consequence was to reinforce existing predispositions, and to activate latent partisan loyalties among the otherwise politically disengaged during campaigns (Lazarsfeld, Berelson and Gaudet, 1948; Berelson, Lazarsfeld and McPhee, 1954; Abramowitz, 1978). Contemporary scholarship documents a wide variety of additional media effects. Yet recent work continues to find media-induced partisan reinforcement and rationalization as well (e.g. Zaller, 1992; Rahn, 1993; Bartels, 1993; Gelman and King, 1993; Ansolabehere and Iyengar, 1995; Zaller, 1996; Bartels, 2006; Lenz, 2009).

Two mechanisms likely underpin partisan reinforcement. The first is selective exposure: people are more likely to choose to consume information that confirms their pre-existing views (e.g. Lazarsfeld, Berelson and Gaudet, 1948). The second is selective incorporation. When exposed to persuasive political information, people are likely to accept or reject it based on whether its source and/or content resonate with their prior views (e.g. Zaller, 1992; Taber and Lodge, 2006). Through these mechanisms, messages that run counter to respondents’ predispositions are either never encountered or else rejected. Together, they suggest that some of the most common media effects will be the strengthening of the recipients’ existing attitudes and the acceptance of new attitudes held by their party’s political elites (Zaller, 1992, 1994; Berinsky, 2009; Lenz, 2009; Levendusky, 2009). Rather than influencing all members of the public in the same way, these media effects polarize preferences by partisanship.

Recent research has also explored other types of media effects beyond reinforcement and polarization. This newer scholarly emphasis is aptly summarized by the title of John Zaller’s

\textsuperscript{5}Specifically, O’Keefe (2002) defines persuasion as “a successful intentional effort at influencing another’s mental state through communication in a circumstance in which the persuadee has some measure of freedom.” Past scholarship uses varying terminology in referring to media effects. The most common approach is to follow Iyengar (1997) and categorize media effects as “priming,” “framing” or “persuasion.” However, all three of these effects can produce attitude change, and thus can be categorized as subsets of “persuasion” under O’Keefe’s definition. For clarity, this paper follows O’Keefe by describing all instances of media-induced opinion change as variants of persuasion.
essay, “The Myth of Massive Media Impact Revived” (Zaller, 1996; Bartels, 1993; Kinder, 1998, 2003). In part, recent scholarship has uncovered robust media effects by expanding the range of phenomena under examination to include not just the persuasion of out-partisans but also priming (e.g. Iyengar and Kinder, 1987; Krosnick and Miller, 1997; Althaus and Kim, 2006) and framing (e.g. Nelson, Clausen and Oxley, 1997; Berinsky and Kinder, 2006; Chong and Druckman, 2007a). Still other recent scholarship reports evidence of persuasion that is more uniform across the population (e.g. Bartels, 1993; Hetherington, 1996; Smidt, 2008; Ladd and Lenz, 2009; Gerber, Karlan and Bergan, Forthcoming). Media-induced partisan reinforcement could be produced by multiple psychological mechanisms. For example, it could be that when partisans confront certain messages, those messages prime partisanship by heightening the mental accessibility of partisan considerations. Reinforcement could also result from the differential absorption of persuasive messages, where messages are more likely to be received and accepted if they match people’s predispositions (e.g. Zaller, 1992).

The extent to which media effects are reinforcing or more broadly persuasive may depend on the structure of the media market. As noted in the introduction, the news media environment has fragmented in the past 30 years, adding many news sources with more explicit ideological slants. Scholarship has already begun to investigate the consequences of these trends for public opinion. Prior (2007) finds that the greater availability of non-political media choices exacerbates inequalities in political knowledge and participation, as those uninterested in politics now have a greater ability to ignore politics altogether.

At the same time, media diversity has allowed those who do consume news to select sources whose ideological slants reflect their own predispositions (Iyengar and Hahn, 2007; Stroud, 2008, 2010, 2011; Pew Center for the People and the Press, 2010). This selective

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6 Here, priming is defined as “the activation of knowledge stored in long-term memory following exposure to a stimulus” (Althaus and Kim, 2006, pg. 961).

7 This is not to say that the news sources that dominated the mid-twentieth century were free of bias. We merely point out that the range of ideological perspectives available to consumers has increased in recent years and that the market share of news outlets purporting to follow the “ideal of objectivity,” which dominated journalism in the mid-twentieth century (Schudson, 1978; West, 2001), has decreased (see West, 2001; Prior, 2007; Project for Excellence in Journalism, 2011).

8 On ideologically selective media exposure, see also Lazarsfeld, Berelson and Gaudet (1948) and Mullainathan and Shleifer (2005).
media exposure has the potential to enhance partisan reinforcement effects (e.g. Hollander, 2008; Stroud, 2010, 2011). Indeed, Bennett and Iyengar (2008) even argue that this trend could reduce the prevalence of other types of media effects because people are less frequently exposed to outlets that challenge their existing views. Based on this, we expect that the introduction of an ideological outlet such as Fox will primarily induce partisan reinforcement. Republicans are more likely to watch Fox, especially as its ideological slant relative to other outlets becomes apparent. They are also more likely to have their partisanship primed by its content, or else to receive and accept its comparatively pro-Republican messages. Conversely, citizens with Democratic loyalties are less likely to watch Fox, and to the extent that they do, they are more likely to resist its messages.

2.1 Existing Evidence

Is there convincing evidence of media effects from ideologically distinctive news outlets? In addition to the usual omitted variable bias concerns, the reciprocal causal relationship between the choice of news outlet and that outlet’s effect makes estimating the effect especially difficult in observational data. Some studies of this question have employed cross-sectional data, typically with quasi-experimental variation in the media message (Krebs, 1998; Dalton, Beck and Huckfeldt, 1998; Kahn and Kenney, 2002; Druckman and Parkin, 2005; Barker and Lawrence, 2006; Newman and Smith, 2007). Others have used instrumental variables (Barker, 2002; Ladd, 2012), panel survey data (Barker and Knight, 2000; Barker, 2002; Ladd and Lenz, 2009), over-time aggregate data (Veblen, 1975; Erikson, 1976; Lieske, 1989; DellaVigna and Kaplan, 2007; Gentzkow, Shapiro and Sinkinson, Forthcoming), or field experiments (Gerber, Karlan and Bergan, Forthcoming).  

One widely cited study is DellaVigna and Kaplan (2007). It looks at the effect of Fox News on presidential voting in 2000 by exploiting Fox’s incomplete roll-out onto cable systems

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10Through January 2012, it had been cited 299 times according to Google Scholar.
by 2000 as a source of plausibly exogenous variation in exposure. It combines data on which
towns’ cable systems made Fox available with aggregate-level voting data from 1996 and 2000.
The article reports a significant and moderately sized effect: those who lived in towns with
Fox access were 0.4 to 0.7 percentage points more likely to cast a Republican presidential vote.
This is presented as an “intent-to-treat” estimate across all voters. DellaVigna and Kaplan
(2007, 1213) also report an interaction between Fox News accessibility and local partisanship,
with Democratic towns showing larger treatment effects. This interaction is interpreted as
evidence of genuine persuasion of out-partisans: Democratic voters appear more responsive to
Fox News than Republicans.

A key question posed by the existing literature is whether Fox News access influences
primarily in-partisans or whether the effect is more uniform or even concentrated among out-
partisans. But aggregate data are ill-suited for this purpose. To understand the sub-groups
most influenced by Fox News access, this paper builds on prior studies by employing a large,
individual-level data set.

3 Data and Methods

Following DellaVigna and Kaplan (2007), we use the incomplete availability of Fox News
during the 2000 Presidential election to estimate the effects of having access to the channel.
This identification strategy could face problems if Fox News targeted more politically conserva-
tive areas. However, this does not seem to have been the case. Conditional on covariates,
neither we nor DellaVigna and Kaplan (2007) find that towns with Fox News access in 2000
were more conservative than those without it. Also, placebo tests reported below indicate that
once we account for access in 2000, Fox News access in 2003 has no conditional correlation
with respondents’ vote intentions. Nor does Fox News access predict Republican partisanship
in analyses reported below. Furthermore, contemporary accounts of Fox’s business strategy
do not indicate that political geography affected how the channel expanded. Owner Rupert
Murdoch’s stated goal was to make the channel available to as many people as possible to
maximize ratings and revenue. Specifically, his goal was availability to 60 million viewers to rival CNN by 2003 (Kafka, 1999).\footnote{To achieve this, Fox offered any cable operator $10 per subscriber in exchange for an agreement to carry the channel for ten years, double the typical industry rate (Meroney, 1997; Kafka, 1999). Several large firms accepted this offer and carried the channel in their service areas when it launched in October 1996, including Cablevision, Comcast, Continental, and TCI cable companies, as well as the DirectTV satellite service (Hall, 1997). Initially Time Warner Cable, which was of special interest because it served New York City, turned down the offer and Ted Turner called Murdoch a “scumbag” and “a pretty slimy character” and compared him to “the late Fuehrer” (Hall, 1997; Collins, 2004, 102). But 11 months after Fox’s launch, Time Warner relented, meaning that Fox was carried by most of the largest cable companies in the country (Kafka, 1999), though it was still only available in a minority of all towns. As a result, to the extent that Fox News expansion was nonrandom, its expansion was not politically driven, but disproportionately concentrated in larger U.S. towns with more cable channels.} Given this, to the extent that Fox News access is confounded, variables such as the town’s size or its number of potential subscribers are likely to be the primary sources of bias.

DellaVigna and Kaplan (2007) compiled data on Fox News availability for 9,837 “towns”—known technically as Census-Designated Places (CDP)—in 28 U.S. states. The data set is extensive but not comprehensive within these states, as towns with varying cable service within their boundaries or other forms of missing data are excluded. This leads to the omission of some larger cities such as New York. One challenge is appropriately matching individual NAES respondents into these towns using the respondents’ ZIP codes, which is the most precise level of geographic identification available. We began with a complete listing of all 32,054 U.S. ZIP codes in 2000. For each, we identified whether the ZIP code’s centroid\footnote{The centroid is the point which is the weighted average of the ZIP code’s x and y coordinates.} fell within a CDP. For 8,731 ZIP codes accounting for 157.9 million residents, the centroid falls within the boundaries of an identified CDP, making the mapping from the ZIP code to the CDP straightforward. For the remaining 23,161 ZIP codes—home to 123.1 million residents in 2000—we identified the nearest CDP, and also calculated the distance from the ZIP code centroid to the nearest CDP boundary. In such cases, the ZIP code may still overlap substantially with the CDP, but its centroid falls outside the CDP’s boundaries.\footnote{For example, for the 51.4% of the Republican identifiers and pure independents with a non-zero distance, the median distance to the nearest CDP is 1.19 miles. Even in these cases, measurement error is likely to be rare, as it requires both that the actual CDP is further from the ZIP code’s centroid and that the actual CDP differs in its Fox News availability.} Below, we show that the core results differ little between respondents whose ZIP code centroid falls within a CDP and those whose ZIP...
code centroid does not.

To link ZIP codes with the CDPs, which are the units for which we observe Fox News access, we standardized the text strings indicating each ZIP code’s name, and then sought identically named towns within the same state listed in the availability data set. Our preliminary matching successfully identified the ZIP codes corresponding to 5,539 of the 9,837 towns for which Fox News data are available. By turning to an alternate list of ZIP codes’ place names available through Geolytics, we were able to identify ZIP codes corresponding to 1,430 additional towns. We then conducted manual town-by-town searches, identifying 222 towns where an alternate town name is associated with a ZIP code in our listing. In all, we identified ZIP codes for 7,111 of the CDPs observed in the original town-level data, or 72.3%. Moreover, the towns we were unable to match are disproportionately smaller ones. Our matching procedures can thus identify ZIP codes corresponding to towns that cast 32.2 million Presidential votes in 2000.

3.1 National Annenberg Election Study

The NAES surveyed Americans by phone between mid-December 1999 and mid-January 2001, and in all, had 58,373 respondents. Of these, 33,063—56.6%—lived in one of the 26 states with at least some data on Fox News availability. As in other analyses of persuasion using geographic variation (Huber and Arceneaux, 2007), the NAES’s large sample size provides researchers the statistical power to identify even substantively small effects. We use respondents’ ZIP codes to match them to towns for which DellaVigna and Kaplan (2007) provide data on Fox News availability. We are able to do so for 22,592 respondents, representing 68.3% of all NAES respondents in 26 states. Prior to listwise deletion, the individual-level data set with Fox News availability includes 10,430 Democratic identifiers or leaners, 8,906 Republican identifiers or leaners, and 3,256 pure independents.

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14For instance, Amherst, New York is listed in the Fox News data set, but the ZIP codes within Amherst are labeled as “Buffalo, New York.”

15This constitutes 79.3% of those in the full set of towns used in DellaVigna and Kaplan (2007).

16The NAES did not collect data for respondents in Alaska or Hawaii, explaining the drop from 28 states in DellaVigna and Kaplan (2007) to 26 here.

17In evaluating this figure, it is important to keep in mind that the original DellaVigna and Kaplan (2007) data do not provide full coverage in these states.
3.2 Modeling Choices

DellaVigna and Kaplan (2007) use a differences-in-differences design, where Fox News availability in 2000 and a long list of other independent variables are used to predict the change in Republican Presidential voting between 1996 and 2000. We begin with the same demographic covariates, including each town’s 1990 and 2000 population, education level, percent Black, percent Hispanic, employment, unemployment, income, percent married, and percent male. DellaVigna and Kaplan (2007)’s models also include measures of the number of potential cable subscribers and the number of channels in each town, each broken into deciles. The models further include either county or Congressional district fixed effects to capture unobserved geographic heterogeneity. As both DellaVigna and Kaplan (2007) and Hainmueller (2012) explain, DellaVigna and Kaplan’s models are sensitive to certain specification decisions, including whether towns are weighted according to the number of votes cast and whether controls for characteristics of the cable system are included.

The NAES contains individual-level data, which provide important advantages over town-level data. First, they enable us to control for individual-level predictors of vote choice, such as respondents’ gender, racial/ethnic background, marital status, education, union membership, and income, in addition to all the aggregate-level controls used by DellaVigna and Kaplan (2007). They also control for stable attitudinal variables such as partisan identification (Green, Palmquist and Schickler, 2002) and identification as a born-again Christian. Individual-level controls reduce the threat of omitted variable biases or aggregation biases not fully captured by town-level variables. For example, two towns could have identical levels of mean income but very different distributions of income, a potentially important fact given the strong and geographically varying relationship between income and vote choice (Gelman et al., 2008).

The intensity of Presidential campaigns varies significantly by state (Huber and Arceneaux, 2007; Johnston, Hagen and Jamieson, 2004), so our central models include state fixed-effects.

\footnote{To reduce assumptions about functional forms, our models include indicator variables for each response category for multi-valued responses such as income or education.}
While the models in DellaVigna and Kaplan (2007) employ fixed effects at the county or Congressional District levels, the models below do so only in robustness checks. This is because of the high levels of collinearity between county- or district-level fixed effects and Fox News availability: 78% of all counties represented in our main data set and 38% of all Congressional districts have no variation in Fox News availability.\textsuperscript{19} We control for the percentage of each town voting for the Republican candidate in 1996. However, we cannot also control for 1996 individual-level vote choice because the NAES rolling cross-section did not include that question. Overall, there are a variety of potential sources of bias in the DellaVigna and Kaplan (2007) model that are eliminated through the ZIP code- and individual-level controls.

To differentiate between types of media effects it is critical to know which specific groups of prospective voters are influenced. Although not its central focus, DellaVigna and Kaplan (2007) address possible treatment effect heterogeneity by employing interaction terms, including one between Republican districts and Fox News availability. The results indicate a stronger Fox News effect in non-Republican districts: “we find that the impact of Fox News is (marginally significantly) larger in urban towns and lower in the Republican districts, significantly so with county fixed effects” (1212). However, due to problems of ecological inference (Achen and Shively, 1995; King, 1997), extrapolations from this finding depend on strong assumptions. Certainly, it could be that Democratic identifiers are more influenced by Fox News irrespective of their community. But this interaction is also consistent with the claim that Republican identifiers are especially influenced when they live in Democratic areas, perhaps because they have fewer co-partisans as local conversational partners. Another advantage of individual-level data is that they allow for the estimation of sub-group effects with weaker assumptions.

To be sure, survey-based measures are distinct from the actual political behaviors—the revealed preferences—that are of primary interest. However, unlike so many attitudes, vote intentions connect to a real-world behavior that is easily measured, providing a rare opportu-

\textsuperscript{19}In fact, 61% of the Congressional Districts represented in our data set have no more than five observations in at least one of the two cells for Fox News availability.
nity to validate survey techniques. In such tests, political surveys appear to be quite accurate measures of respondents’ voting preferences in most conditions (Keeter et al., 2006). Our main dependent variable is a binary indicator of whether the respondent intends to vote for Republican Presidential candidate George W. Bush. Those who expressed a preference for Al Gore, Ralph Nader, or no candidate are coded as a “0.”

The basic model here includes an intercept, an indicator for Fox News availability, and a total of 109 other covariates. Indeed, with the exception of the fixed effects, these models include every independent variable employed by DellaVigna and Kaplan (2007) as well as a variety of ZIP- and individual-level covariates. Thirty-three of the variables are individual-level measures, such as the six indicator variables for different levels of partisan identification or the eight indicator variables for different income levels. An additional 24 are town-level demographic measures imported from DellaVigna and Kaplan (2007)’s data. The models also condition on the place-level share of voters supporting the Republican candidate in 1996 and an indicator variable for communities without cable access. Given that we have each NAES respondent’s ZIP code, the models also include six ZIP-level demographics drawn from the 2000 Census, including the percentage Black, percentage Hispanic, percentage with a Bachelor’s degree, percentage in the same home from 1995 to 2000, population density, and median household income. Especially for larger places, these ZIP-code level measures will further reduce the set of potentially omitted variables. The models further include 18 indicator variables isolating different aspects of the local cable market, including the number of potential subscribers and the number of available cable channels.

4 Results

The first model begins with the 22,594 respondents to the NAES for whom we have place-level Fox News availability. With listwise deletion, we estimate a logistic regression with 16,877 observations. In the full sample, we find little convincing evidence of a Fox News effect: the

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20 As described below, our results are robust to changes in the coding of the dependent variable.
coefficient on living in a place where Fox News is available is 0.061, with a standard error of 0.072.\textsuperscript{21} The full fitted model is available in Table 1.

Setting the independent variables to their median values, and setting the state to Pennsylvania, we can then estimate the predicted probability that this hypothetical respondent expresses an intention to vote for George W. Bush. In a town with Fox News, this citizen is estimated to support Bush 47.6 percent of the time, while a citizen without Fox News access supports Bush 46.1 percent of the time. On average, respondents in towns with Fox News are 1.50 percentage points more likely to intend a Bush vote, even conditional on a wide variety of individual- and place-level covariates. This point estimate is larger than the 0.7 percentage point effect estimated by DellaVigna and Kaplan (2007). Yet the associated standard error on the Fox News coefficient is larger than the coefficient itself, and in 20% of simulations, the Fox News effect is negative. This leads to a bootstrapped, two-sided p-value of 0.41. We plot both the point estimate and the associated uncertainty at the top of Figure 1, with the thicker line denoting standard deviations and the thinner line denoting the 95% confidence interval. Among all individuals, there is considerable uncertainty about the effect, even with tens of thousands of observations. This uncertainty could plausibly be a consequence of heterogeneity in the treatment effect.

As noted in previous sections, the past literature on the media in campaigns indicates that partisan reinforcement is a common media effect. In general, citizens respond to political messages differently depending on their partisan predispositions. Given that, we might expect the effect of access to media outlets to vary across partisan groups. To test this possibility, we subdivide the population into three groups: Republican identifiers plus independents who lean toward the party, independents who do not lean, and Democratic identifiers plus independents who lean toward the party (see Keith et al., 1992). We then employ the same logistic regression

\textsuperscript{21}DellaVigna and Kaplan (2007) clusters its standard errors at the level of the Congressional district. However, at the individual level, the district-based intra-class correlation is so low—0.002—that standard errors clustered at this level will be little different from those without clustering. We confirm this suspicion empirically, finding that standard errors clustered at the county or district level are slightly smaller than typical standard errors, and so employ typical standard errors. The absence of district-level clustering also indicates that statistical approaches which explicitly model spatial autocorrelation are unlikely to differ substantially in the resulting estimates.
model described above to these subsets, and set all variables to their group-specific medians.\textsuperscript{22}

The results are again depicted in Figure 1, and they show evidence of differential effects. For the 7,001 fully observed Republican identifiers and leaners, the average effect of living in a town with Fox News access is 2.6 percentage points, with a corresponding bootstrapped, two-sided p-value of 0.16. This point estimate is more than twice the point estimate for the sample as a whole. For the 1,725 fully observed pure independents, the effect is slightly larger, at 3.74 percentage points. Yet there is so much uncertainty that the corresponding two-sided p-value is 0.34.\textsuperscript{23} For Democrats, on the other hand, the average effect is actually negative but near zero (-0.53 percentage points), with a two-sided p-value of 0.71. In 90\% of simulations, the effect among Republicans is larger than that among Democrats. The heterogeneous effects found by DellaVigna and Kaplan (2007), with Democratic areas more influenced by Fox News, appear likely to be artifacts of aggregation. Our analyses suggest that the potential voters who are likely to agree with Fox News’s slant are also those more likely to be influenced by the channel.

In light of these results, we combine the Republican identifiers and leaners with the pure independents—who seem similarly influenced—and focus on that group of 8,726 fully observed respondents in subsequent analyses. Among this group, the same model and posterior estimation strategy yields an estimated effect of 2.6 percentage points, with a 95 percent confidence interval from -0.07 to 5.3 percentage points. Here, the corresponding bootstrapped, two-sided p-value is 0.06. Based on this, we conclude that those Republicans and pure independents living in a town with Fox News on its cable systems are more likely to support the Republican Presidential candidate.

\textsuperscript{22}For all simulations, the state is again set to Pennsylvania to ensure comparability.

\textsuperscript{23}Given that many pure independents are disinterested in politics (Keith et al., 1992), we also considered whether there is an interaction between interviewer-assessed political knowledge and Fox News access among this subset of potential voters. In keeping with expectations, the coefficient on that interaction is positive (0.528), but it is estimated with considerable uncertainty (SE=0.466).
4.1 Placebo Testing and Robustness

Fox News was not randomly assigned to some towns’ cable systems; it was provided as the result of commercial decisions by profit-seeking companies. To test the validity of the ignorability assumption, DellaVigna and Kaplan (2007) conduct placebo tests, demonstrating that Fox News availability in 2000 has no “effect” on the changing Republican vote share between 1992 and 1996 or 1998 and 1992.\footnote{On the advantages of placebo tests for making causal inferences, see Sekhon (2009).} They also show that 2003 Fox News availability has no “effect” on the changed Republican vote share between 1996 and 2000.

We replicated these strategies with our individual-level data set, with the same outcomes. Conditional on the 1996 percentage of the town voting for the Republican candidate and the other ZIP- and town-level covariates in our model, the 1992 Republican presidential vote share has an insignificant, negative relationship to Fox News availability.\footnote{There is substantial missingness for the 1992 Republican vote share, so the baseline data set includes 2,493 respondents in 17 states. The coefficient in a linear regression is -0.120, with a standard error of 0.324.} Thus, Fox News availability in 2000 appears not to be acting as a proxy for pro-Republican shifts in voting patterns. Also, the effect of Fox News remains strong for the Republican and pure independent sample when conditioning on squared and cubed terms of the town-level percentage voting Republican in 1996.\footnote{The estimated Fox News coefficient from the full logistic regression is 0.207 with a standard error of 0.104.} This indicates that the results are not driven by various functions of underlying Republican support in the town.

Still more instructive is another placebo test, in which we estimate the influence of 2000 and 2003 Fox News availability simultaneously. In 2000, 23.5% of our Republican and pure independent respondents had access to Fox News. By 2003, that figure grew to 60.5%. If the effects we attribute above to Fox News availability are in fact selection effects, we should expect that 2003 Fox News availability will also predict Republican voting in 2000. But as shown by the second result in Figure 2, when we include Fox News availability in 2003 alongside 2000 availability and our other covariates, the relevant coefficient is almost exactly zero. Using the same covariate profile as above, we calculate that for a weak Republican identifier, the “effect” of living in a town with Fox News availability in 2003 is -0.5 percentage points, with a
95% confidence interval from -3.5 percentage points to 2.3 percentage points. Conditional on covariates, whatever selection processes took place between 2000 and 2003 were uncorrelated with 2000 vote intentions. We also estimated a variant of our basic model on the full sample with respondents’ partisanship as the dependent variable. Fox News access is a negative, borderline significant predictor of Republican partisanship, with a coefficient of -0.012 and a standard error of 0.007. As with our placebo tests, this result indicates that the relationships between Fox availability and 2000 Republican voting are not spurious results stemming from unobserved Republican or conservative tendencies. The core relationships we report do not appear to be driven by selection effects.

Listwise deletion removes a significant share of our observations, even for the subset of respondents who are not Democratic identifiers or leaners. Of the 12,162 such respondents, 1,445 do not report their income, 67 respondents do not report their education, and 2,405 do not report their vote intention. To address potential biases induced by listwise deletion (King et al., 2001), we re-estimated the basic model after imputing missing data. The results, shown in the middle of Figure 2, reinforce the core conclusion: Fox News access is conditionally correlated with Republican vote intentions. In fact, the estimated effect of 3.3 percentage points is strong, with a 95% confidence interval from 0.4 to 6.3 percentage points.

We also test whether our results are sensitive to our choice of dependent variable. Specifically, our primary method of measuring support for the Republican Presidential candidate considers the 228 Republicans or pure independents intending a vote for another candidate and the 433 not intending to vote for President as not supporting George W. Bush. It does likewise with the 1,217 respondents who don’t know whom they support. In an additional robustness check, we estimated the effect only for respondents who supported Republican candidate George W. Bush over Democratic candidate Al Gore. In this model, the point estimate for the Fox News effect is almost identical, at 2.56 percentage points, albeit with increased uncertainty.\textsuperscript{28}

\textsuperscript{27}The actual effect of Fox News on Republicans and pure independents is larger than this placebo effect in 93% of simulations.

\textsuperscript{28}We also estimated a separate model to see if Fox News access had any conditional correlation with a
One important limitation of the data sets employed here is that we have no measure of respondent-level exposure to Fox News. To identify respondents whose background characteristics made them more likely to watch Fox News, we used a separate survey—the Pew Research Center’s 2000 “Believability” survey—to model individual-level Fox News exposure.\footnote{29 Using the Pew data, we modeled Fox News viewership as a function of respondents’ partisanship, education, income, race, ethnicity, gender, age, age squared, identification as a born-again Christian, and voter registration. In 2000, the Fox News audience was not as distinctive in terms of its ideology or partisanship, with 31% of its audience reporting Democratic partisan identification.\footnote{30 In these data, self-reported Fox News viewership is positively correlated with income and negatively correlated with education.\footnote{31 This model does not account for much of the variation in self-reported Fox News exposure, as it has an R-squared value of only 0.036. Nonetheless, we used the model to generate imputed Fox News exposure scores for the Republicans, Republican leaners, and pure independents in the Annenberg data.\footnote{32 While the core result of a positive Fox News effect on Republican vote intention holds among the sub-sample of 4,319 respondents who have predicted Fox News exposure scores that are higher than the median ($\beta=0.19, SE=0.14$), the estimated effect is little different for respondents with scores below the median ($\beta=0.18, SE=0.14$). Thus, we cannot be certain how much of the effect of Fox availability is solely driven by direct exposure to Fox and how much results from indirect exposure to information from Fox through mechanisms like local social communication (e.g. Huckfeldt and Sprague, 1995).}}}

Specifically, respondents were asked whether they watch or listen to certain TV and radio programs “regularly,” “sometimes,” “hardly ever,” or “never.” We recode these responses on a scale from 1 to 4.\footnote{29 Specifically, respondents were asked whether they watch or listen to certain TV and radio programs “regularly,” “sometimes,” “hardly ever,” or “never.” We recode these responses on a scale from 1 to 4.}

In these survey data from 2000, there is not yet evidence of selective exposure by partisanship. Among those saying they watch Fox News “regularly,” 31% identified as Democrats and 31% identified as Republicans.\footnote{30 In these survey data from 2000, there is not yet evidence of selective exposure by partisanship. Among those saying they watch Fox News “regularly,” 31% identified as Democrats and 31% identified as Republicans.}

Intriguingly, conditional on education and the other covariates, African Americans and Hispanics were more likely to indicate being Fox News viewers.\footnote{31 Intriguingly, conditional on education and the other covariates, African Americans and Hispanics were more likely to indicate being Fox News viewers.}

In doing this, we essentially use the “two-stage auxiliary instrumental variables” procedure proposed by Franklin (1989).\footnote{32 In doing this, we essentially use the “two-stage auxiliary instrumental variables” procedure proposed by Franklin (1989).}
4.2 Other Sources of Heterogeneity

Informed by decades of theorizing and empirical results on reinforcement, the analyses above emphasize partisanship as a source of heterogeneity in the effect of Fox News access. But even among Republican-aligned and non-aligned citizens, it is plausible that the effects of Fox News access might depend on other characteristics of the citizen, the community, or the time period. For example, does the Fox News effect appear primarily among respondents with higher political knowledge (e.g. Chong and Druckman, 2007b), whose pre-existing cognitive schema might be better equipped to incorporate the new messages? Or does it appear among those with middle levels of political knowledge (Zaller, 1992), who might be sufficiently attentive to its messages to update their attitudes accordingly? We might also expect the effect to shift over the course of the campaign, as candidates’ persuasive attempts increase and as voters pay increasing attention to the upcoming election (Berelson, Lazarsfeld and McPhee, 1954; Gelman and King, 1993). It is plausible as well that the effects might be more pronounced in less Republican communities, as local social life in such communities might provide fewer messages that reinforce Republican partisanship. To the extent that Fox News provides an ideological slant similar to that available on talk radio, perhaps those who listen to talk radio will be less influenced. Given the construction of the data set, we also need to test if the effects of Fox News access vary depending on whether the respondent’s ZIP code centroid falls within a census-designated place.

Table 2 reports the results of 33 new models which augment the basic model by adding multiplicative interactions and, where necessary, the relevant lower-order terms one at a time. These covariates include everything from respondents’ self-reported ideology, interest in politics, and identification as born-again Christians to southern residence, residence in a heavily Republican town, the number of months prior to or after the November general election, and many others. The first and second columns summarize the interacted covariate by providing its minimum and maximum, while the third, fourth, and fifth columns report the interaction effect’s coefficient, standard error, and Z-value. Due to different levels of missingness, the fi-
nal column reports the number of observations for which this interacted variable is available. For example, the first row of the table indicates that respondents who report an interest in government are less likely to show a positive effect of Fox News access, with an interaction coefficient of -0.654 (SE=0.227).

Yet the general pattern is of a stable treatment effect. In most cases, the effect of Fox News access does not change in a demonstrable way as the potential moderators shift. The interaction effect for respondents whose ZIP code centroid is inside the CDP is nearly zero (Z=-0.219) and is insignificant, meaning that the estimated effect hardly differs between those whose ZIP code centroids are within a CDP and those whose ZIP code centroids are not. The interaction effects with the number of months until the election, whether the interview took place in the three months leading up to the election, or whether it took place after the election are all weak and insignificant as well, findings which are in keeping with the claim that media effects are typically short-lived (Chong and Druckman, 2010).33 Respondents who moved to their present address within the last six months do not show a smaller treatment effect. Fox News access in 1998 does not have an especially strong interactive effect, and it has a negative point estimate, making cumulative Fox News effects unlikely. This finding also further undercuts alternative explanations based on selection bias, since Fox News was decidedly not starting in those communities that were most predisposed to its message. While it is valuable to consider how Fox News access interacts with other information sources, respondents who listen to talk radio do not show a stronger or weaker effect, either. And the influence of Fox News access appears no stronger or weaker in towns with many cable channels.

The only noteworthy positive interactions are that more conservative respondents, southern respondents, and those living in larger towns have somewhat stronger treatment effects. The increased effect on conservatives is quite consistent with the broader evidence in this paper that Fox News access primarily plays a reinforcing role. On the negative side, those who are in military households, those who report an interest in government, those who frequently

33We confirmed this by removing the 1,025 respondents interviewed after the election. Among this group, the coefficient for Fox News access is 0.150 with a standard error of 0.103.
discuss politics at work, and those who are registered to vote all appear to have weaker
treatment effects. These results—and especially that for voter registration—suggest that Fox
News access might be more influential among a less politically engaged subset of potential
Republican voters. That, in turn, helps to reconcile the effect sizes for vote intention reported
here with the smaller effect sizes reported for voting returns by DellaVigna and Kaplan (2007).

4.3 Matching Procedure

One central concern facing these analyses is model dependence. When treatments in the
political world are not randomly assigned, they are almost certainly correlated with other
variables, making decisions about how to adjust for those confounders critical. As noted above,
in the years after its introduction, Fox News was not evenly distributed across towns: it was
systematically more likely to be found in larger U.S. towns with more cable channels (see
also Hainmueller, 2012). In our full data set for Republicans and pure independents, 45.0%
of those with Fox News access lived in communities in the largest decile in terms of overall
population. For those without Fox News access, the comparable figure is 17.1%.34 In fact, both
the original DellaVigna and Kaplan (2007) article and the re-analysis reported by Hainmueller
(2012) provide evidence of model dependence related to these variables.35

Here, we follow Ho et al. (2007) by using matching as a pre-processing step to improve
overlap on population size and other key covariates. Acknowledging the limitations of propen-
sity score matching (King et al., 2011), as well as the computational demands of having 7,548
fully observed Republican or pure independent respondents prior to the election,36 we employ
a hybrid technique of exact matching on key covariates and Mahalanobis matching on oth-

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34 These deciles are defined with respect to the population of towns, not the population of survey respondents.
35 The original aggregate-level results are dependent on the inclusion of specific covariates such as measures of
the size of the local cable market and the number of available channels (DellaVigna and Kaplan, 2007, 1207). The estimated effects hinge on the use of population-based weights as well (DellaVigna and Kaplan,
2007, 1232), and they become nearly zero after the entropy rebalancing procedure outlined by Hainmueller
(2012).
36 These analyses side-step the distinction between vote intentions and vote decisions by excluding respon-
dents after November 2000. Including those respondents increases the pool of potential observations to 8,714.
Effects estimated through matching in this larger sample are indistinguishable from those reported below,
with the median Z-score for the Fox News effect across 50 matched samples equaling 1.52.
ers. Specifically, given the importance of this covariate in prior analyses, we match treated respondents to others whose towns are in the same quintile for the number of channels. We also exactly match respondents to others whose town is in the same octile for total population, reducing the bias reported just above. We then use the Mahalanobis distance measure to match respondents on two other place-based characteristics: the town’s 1996 share voting for the Republican Presidential candidate and the total number of potential cable subscribers in the town.

For the 62 covariates used in our basic model, Table 3 reports the original balance with the full data set of all Republicans and pure independents as well as the balance when retaining only the 2,624 matched respondents. The first two columns report the means for each variable for the full data set, first for towns with and then without Fox News availability. In the third column, we provide one measure of imbalance by dividing the absolute difference between the variable’s means in the full data set by the variable’s standard deviation, estimated in towns without Fox News. The table has been sorted by this third column, so the variable with the largest difference between respondents in towns with and without Fox News is listed first. The 1.683 in the top row indicates that in the overall sample, there is a very pronounced imbalance on this variable. Prior to matching, 37.2% of towns with Fox News fall into the highest decile in terms of their number of available channels, while only 4.1% of towns without Fox News do the same. It is worth noting that the most pronounced imbalances are typically for place-level variables, not individual-level variables.

The fourth and fifth columns provide the means for the matched data set, with the sixth column providing the standardized difference between the means as calculated above. For instance, we see that the imbalance in the top decile for the number of channels declines markedly after matching. Now, 25.8% of respondents in towns with Fox News and 17.5% of respondents in towns without Fox News fall in the highest decile for the number of available channels. Balance also improves with respect to the logged population measures, the percent urban, and various other measures, providing further evidence that the matched data set has reduced the data set to respondents in more comparable communities. For only 18 of the
62 independent variables used in the main model do we see declines in balance, and those declines are typically small. In short, the matching procedure has reduced the number of observations in the data set by 65%, and in doing so, it has focused our attention on the subset of respondents whose towns are most similar but for their Fox News availability.

The matching-based results reinforce the conclusion above: Republicans, Republican leaners, and pure independents are notably more supportive of George W. Bush when living in towns with access to Fox News. Using the matched data, the estimated difference between the treated and control units is 4.1 percentage points, with 95% confidence interval from -0.9 to 9.9 percentage points. This estimated effect is illustrated at the bottom of Figure 2, and the associated two-sided p-value is 0.09.

One of the differences between the primary models reported above and those in DellaVigna and Kaplan (2007) relate to the handling of fixed effects. On account of the distribution of Fox News availability across counties and Congressional districts, the models above include fixed effects at the state level rather than the county or Congressional District level. With the matched data set, we thus also estimated a second model including indicator variables for residents in the 68 Congressional Districts with at least 15 respondents represented in the matched data set. This model produces an estimated Fox News effect of 2.8, with a wider 95% confidence interval from -1.5 to 9.9 percentage points. The corresponding two-sided p-value is 0.20. The estimated effect proves robust to model specification as well as to data reduction. Even when comparing those with access to Fox News to those who lacked such access but were otherwise most similar, and even when using district-level fixed effects, we recover a strong estimated effect of Fox News access.

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37 The treatment effect is estimated using the same model specification as that above, although to eliminate the threat of quasi-complete separation, we create a single fixed effect for all respondents living in the handful on states with fewer than 20 respondents in the matched data set.

38 The one-to-one matching without replacement induces a role for chance in the algorithm, as the matching solution depends on the order in which observations are matched. We thus confirmed that the results are not sensitive to the specific matching solution chosen by re-running the same matching procedure 50 times and estimating the coefficient of interest. By chance, the results reported here fall just above the 50th percentile across these 50 simulations, so they are by no means outliers. The median z-score for the Fox News coefficient across the simulations is 1.68; for the model reported here, it is 1.69.
5 Discussion and Conclusion

An 1883 political cartoon in the magazine Puck illustrates a common concern about the press of that era (White, 2011). It depicts a decidedly unequal joust between the well-armored knight “Monopoly” and a cowering, unarmored worker called “Labor.” Monopoly’s weapon is a long spear, labeled “subsidized press.” To that artist, and to many critics of that day, the press was a weapon advancing the political interests of large businesses. Echoes of the concerns expressed in the late-19th century have emerged repeatedly through American history. As Zaller (1992, 310) notes, “[i]n the 1930s and 1940s, many observers feared that the rise of the modern mass media would bring a new era of totalitarian domination” in which the public was controlled through media messages. Other critics have argued that the “objective” news style of the mid-20th century concealed a left-leaning consensus among major media outlets (Lichter, Rothman and Lichter, 1986).

Recent changes in the market for political news have renewed concerns about media power. In the mid-twentieth century, most Americans had only a handful on television channels and a few local newspapers from which to choose. Yet today, there are hundreds of television and radio options in addition to many thousands of choices on the Internet. Television viewers can now more easily match their viewing to their tastes, watching exclusively entertainment or exclusively political content as they prefer. And among their options for political news, they can choose outlets that follow the “objective” style of the last century or those that provide more obviously opinionated versions of the news. Contemporary observers worry that this media landscape threatens American democracy, as it might produce a news audience more vulnerable to elite manipulation. Speaking about Fox News, one independent television producer explained: “[w]hen you let a small number of companies have this much concentrated power, they will always abuse it... And if you don’t change the system we can be having this conversation for the next 50 years and be talking about Rupert Murdoch the third” (Greenwald, 2004).

These recurring concerns are not entirely baseless. Even in ostensibly democratic systems,
if people are at the mercy of the perspectives provided by media outlets, their sovereignty is
limited. In Walter Lippmann (1927, 4)’s words, if the ordinary citizen is subservient to media
messages, “h[e reigns in theory, but in fact he does not govern.”

Among academics, mid-twentieth century findings of minimal media effects eased these
fears about media power over public opinion. But with newer findings of significant media
effects, and with the increasing ideological diversity among media outlets, these worries have
regained some of their strength. The growing concern about media influence was nicely cap-
tured by the title of a prominent book from the late 1990’s, Do the Media Govern? (Iyengar
and Reeves, 1997), and also by the veritable mountain of recent books worrying about bias
and media manipulation from the left or the right (e.g. Lichter, Rothman and Lichter, 1986;
Rusher, 1988; Herman and Chomsky, 1988; Goldberg, 2002; Goodman, 2004; Groseclose, 2011).

Is the proliferation of opinionated news options increasing the influence of media owners
and political elites? In this paper, we investigated the effect of having access to a relatively
more opinionated source of news, the Fox News cable channel. Fox competes in the competitive
cable television market and has become the most highly rated cable news channel in the U.S
(Collins, 2004). Its approach is distinct from the more conventional reporting style dominant
in the mid-twentieth century, and it has important similarities with news presentations on
conservative talk radio or opinion-oriented Internet news sites. For this reason, studies of Fox
News may give us some insights into the likely effects of those outlets as well.

DellaVigna and Kaplan (2007) argue that Fox News was broadly persuasive during the
2000 election, with some indications of larger persuasive effects among Democrats. If true, that
finding would confirm fears about media influence. It could even presage a pro-Republican shift
in American politics generally. To the extent that partisan news outlets can influence voters
predisposed to support the other party, they could be critical weapons in future political
campaigns.

Yet the findings of this paper indicate media influence of a different sort. Using individual-
level survey data, we find no evidence of persuasion among Democrats during the 2000 election.
To the extent that there is an effect of access to Fox News, it is confined to Republicans and perhaps to pure independents. If anything, partisan reinforcement is likely to be more pronounced today than it was twelve years ago, as Fox News’ audience contains a greater proportion of Republicans relative to Democrats than it did in 2000 (Project for Excellence in Journalism, 2009). Future research could productively consider whether similar patterns hold in other types of news media, and whether the effects of clearly opinionated news options are complements or substitutes. For instance, does the Fox News effect grow larger or smaller as access to opinionated political websites spreads?

The primary concerns validated by these findings relate not to the unchecked power of media elites but instead to mass political polarization. Partisan voting in U.S. presidential elections has increased steadily since the 1970s (McCarty, Poole and Rosenthal, 2006; Levensdusky, 2009). The availability of partisan news sources may be one source of that trend. As more explicitly opinionated sources have entered the news marketplace, partisans increasingly choose outlets that reflect their pre-existing biases (e.g. Stroud, 2011). Once chosen, those outlets can reinforce viewers’ partisan voting tendencies. Fox News is a likely contributor to this cycle of partisan reinforcement, reducing opportunities for voters to encounter information that undercuts their prior beliefs. In his 2008 book, social observer Bill Bishop worried that contemporary America has “pockets of like-minded citizens that have become so ideologically inbred that we don’t know, can’t understand, and can barely conceive of ‘those people’ who live just a few miles away” (2008, pg. 40). The evidence here indicates that opinionated news sources are one likely cause of this growing polarization.
<table>
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<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>Variable</th>
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<td>Some Grad</td>
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<td>Pop. D10</td>
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<td>Ch. D2</td>
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<td>Ch. D3</td>
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<td>Ch. D4</td>
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<td>No Cable '00</td>
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<td>0.070</td>
<td>Ch. D5</td>
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<td>0.443</td>
<td>Income '90</td>
<td>-0.001</td>
<td>0.051</td>
<td>NY</td>
<td>-0.183</td>
<td>0.202</td>
</tr>
<tr>
<td>ZIP % Black</td>
<td>0.081</td>
<td>0.313</td>
<td>% Urban '90</td>
<td>-0.130</td>
<td>0.147</td>
<td>NJ</td>
<td>-0.102</td>
<td>0.223</td>
</tr>
<tr>
<td>ZIP % Same House</td>
<td>0.006</td>
<td>0.429</td>
<td>Pop. '00</td>
<td>0.084</td>
<td>0.026</td>
<td>PA</td>
<td>-0.453</td>
<td>0.203</td>
</tr>
<tr>
<td>ZIP Dens. '00</td>
<td>-28.06</td>
<td>21.49</td>
<td>% HS '00</td>
<td>1.141</td>
<td>1.092</td>
<td>OH</td>
<td>-0.293</td>
<td>0.196</td>
</tr>
<tr>
<td>ZIP % Hisp.</td>
<td>-0.472</td>
<td>0.497</td>
<td>% HS+ '00</td>
<td>1.270</td>
<td>1.105</td>
<td>MI</td>
<td>-0.220</td>
<td>0.201</td>
</tr>
<tr>
<td>Black</td>
<td>-0.978</td>
<td>0.125</td>
<td>% College '00</td>
<td>0.226</td>
<td>1.091</td>
<td>WI</td>
<td>-0.235</td>
<td>0.205</td>
</tr>
<tr>
<td>Asian Am.</td>
<td>-0.129</td>
<td>0.171</td>
<td>% Male '00</td>
<td>-0.176</td>
<td>1.378</td>
<td>MN</td>
<td>-0.435</td>
<td>0.210</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.023</td>
<td>0.101</td>
<td>% Black '00</td>
<td>0.167</td>
<td>1.030</td>
<td>IA</td>
<td>-0.716</td>
<td>0.230</td>
</tr>
<tr>
<td>Inc. $10K-$15K</td>
<td>0.055</td>
<td>0.130</td>
<td>% Hisp. '00</td>
<td>0.386</td>
<td>1.044</td>
<td>MO</td>
<td>-0.216</td>
<td>0.271</td>
</tr>
<tr>
<td>Inc. $15K-$25K</td>
<td>0.109</td>
<td>0.118</td>
<td>% Emp. '00</td>
<td>-0.986</td>
<td>0.725</td>
<td>ND</td>
<td>-0.003</td>
<td>0.486</td>
</tr>
<tr>
<td>Inc. $25K-$35K</td>
<td>0.073</td>
<td>0.118</td>
<td>% Unemp. '00</td>
<td>0.377</td>
<td>1.075</td>
<td>VA</td>
<td>-0.147</td>
<td>0.235</td>
</tr>
<tr>
<td>Inc. $35K-$50K</td>
<td>0.181</td>
<td>0.118</td>
<td>% Married '00</td>
<td>0.199</td>
<td>0.730</td>
<td>SC</td>
<td>-0.176</td>
<td>0.275</td>
</tr>
<tr>
<td>Inc. $50K-$75K</td>
<td>0.376</td>
<td>0.120</td>
<td>Income '00</td>
<td>0.010</td>
<td>0.037</td>
<td>TN</td>
<td>-0.876</td>
<td>0.266</td>
</tr>
<tr>
<td>Inc. $75K-$100K</td>
<td>0.190</td>
<td>0.131</td>
<td>% Urban '00</td>
<td>0.248</td>
<td>0.164</td>
<td>AL</td>
<td>0.001</td>
<td>0.305</td>
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<td>Inc. $100K-$150K</td>
<td>0.238</td>
<td>0.145</td>
<td>Pop. D2</td>
<td>-0.286</td>
<td>0.276</td>
<td>AR</td>
<td>-0.177</td>
<td>0.319</td>
</tr>
<tr>
<td>Inc. &gt;$150K</td>
<td>0.308</td>
<td>0.162</td>
<td>Pop. D3</td>
<td>-0.482</td>
<td>0.265</td>
<td>MT</td>
<td>0.083</td>
<td>0.376</td>
</tr>
<tr>
<td>Some HS</td>
<td>-0.372</td>
<td>0.187</td>
<td>Pop. D4</td>
<td>-0.532</td>
<td>0.264</td>
<td>ID</td>
<td>0.012</td>
<td>0.359</td>
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<tr>
<td>HS Graduate</td>
<td>-0.249</td>
<td>0.169</td>
<td>Pop. D5</td>
<td>-0.423</td>
<td>0.267</td>
<td>WY</td>
<td>0.318</td>
<td>0.389</td>
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<tr>
<td>Tech./Vocational</td>
<td>-0.454</td>
<td>0.207</td>
<td>Pop. D6</td>
<td>-0.569</td>
<td>0.268</td>
<td>UT</td>
<td>-0.191</td>
<td>0.357</td>
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<tr>
<td>Some College</td>
<td>-0.429</td>
<td>0.175</td>
<td>Pop. D7</td>
<td>-0.461</td>
<td>0.271</td>
<td>CA</td>
<td>-0.444</td>
<td>0.222</td>
</tr>
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<td>Associate’s</td>
<td>-0.348</td>
<td>0.183</td>
<td>Pop. D8</td>
<td>-0.613</td>
<td>0.271</td>
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Table 1: Logistic Regression Predicting a Respondent’s Intention to Vote for GOP Candidate George W. Bush in 2000. Unless otherwise indicated, place-level variables denote the census-designated place. “D” indicates deciles. “Ch.” indicates channels. The coefficients for the town’s population squared and cubed and for the ZIP’s median income have been multiplied by 1,000. 17,030 degrees of freedom.
<table>
<thead>
<tr>
<th>Interacted Variable</th>
<th>Min</th>
<th>Max</th>
<th>$\beta$</th>
<th>SE</th>
<th>Z Value</th>
<th>N</th>
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<tr>
<td>Interest in Gov’t</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.654</td>
<td>0.227</td>
<td>-2.885</td>
<td>8602</td>
</tr>
<tr>
<td>Military</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.388</td>
<td>0.154</td>
<td>-2.521</td>
<td>8617</td>
</tr>
<tr>
<td>Registered to Vote</td>
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<td>1.000</td>
<td>-0.255</td>
<td>0.163</td>
<td>-1.559</td>
<td>8617</td>
</tr>
<tr>
<td>Talk at Work</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.495</td>
<td>0.337</td>
<td>-1.470</td>
<td>7445</td>
</tr>
<tr>
<td>Internet Use</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.221</td>
<td>0.165</td>
<td>-1.343</td>
<td>8613</td>
</tr>
<tr>
<td>Region: West</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.238</td>
<td>0.207</td>
<td>-1.151</td>
<td>8618</td>
</tr>
<tr>
<td>Fox News Access ’98</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.623</td>
<td>0.618</td>
<td>-1.008</td>
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<tr>
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<td>-0.300</td>
<td>0.319</td>
<td>-0.940</td>
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<td>0.168</td>
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<tr>
<td>Pol. Knowledge, Folded</td>
<td>-0.233</td>
<td>0.280</td>
<td>-0.309</td>
<td>0.498</td>
<td>-0.619</td>
<td>8117</td>
</tr>
<tr>
<td>ZIP Name Matches</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.100</td>
<td>0.221</td>
<td>-0.452</td>
<td>8617</td>
</tr>
<tr>
<td>Time: Months to Election</td>
<td>-2.000</td>
<td>11.000</td>
<td>-0.011</td>
<td>0.024</td>
<td>-0.441</td>
<td>8617</td>
</tr>
<tr>
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<td>1.000</td>
<td>-0.063</td>
<td>0.183</td>
<td>-0.346</td>
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<tr>
<td>Lg. Pop. ’90</td>
<td>-0.916</td>
<td>11.974</td>
<td>-0.017</td>
<td>0.049</td>
<td>-0.337</td>
<td>8618</td>
</tr>
<tr>
<td>Watch Other Cable News</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.057</td>
<td>0.191</td>
<td>-0.297</td>
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<tr>
<td>Moved Recently</td>
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<td>Attention to News</td>
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<td>0.218</td>
<td>-0.226</td>
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<tr>
<td>Centroid w/i CDP</td>
<td>0.000</td>
<td>1.000</td>
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<td>0.158</td>
<td>-0.219</td>
<td>8617</td>
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<tr>
<td>Talk Radio</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.046</td>
<td>0.229</td>
<td>-0.199</td>
<td>8596</td>
</tr>
<tr>
<td>Union</td>
<td>0.000</td>
<td>1.000</td>
<td>-0.017</td>
<td>0.192</td>
<td>-0.089</td>
<td>8618</td>
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<tr>
<td>Talk with Family</td>
<td>-0.305</td>
<td>0.695</td>
<td>-0.009</td>
<td>0.264</td>
<td>-0.034</td>
<td>7447</td>
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<td>Pol. Knowledge/Interest</td>
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<td>0.375</td>
<td>-0.003</td>
<td>0.292</td>
<td>-0.009</td>
<td>8617</td>
</tr>
<tr>
<td>Time: During Campaign</td>
<td>0.000</td>
<td>1.000</td>
<td>0.001</td>
<td>0.150</td>
<td>0.007</td>
<td>8617</td>
</tr>
<tr>
<td>Pol. Knowledge</td>
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<td>0.466</td>
<td>0.008</td>
<td>0.262</td>
<td>0.030</td>
<td>8117</td>
</tr>
<tr>
<td>Time: After Campaign</td>
<td>0.000</td>
<td>1.000</td>
<td>0.089</td>
<td>0.236</td>
<td>0.376</td>
<td>8617</td>
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<tr>
<td>Born Again</td>
<td>0.000</td>
<td>1.000</td>
<td>0.078</td>
<td>0.171</td>
<td>0.456</td>
<td>8618</td>
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<tr>
<td>Care Who Wins</td>
<td>-0.629</td>
<td>0.371</td>
<td>0.071</td>
<td>0.152</td>
<td>0.465</td>
<td>8541</td>
</tr>
<tr>
<td>Disagree with Family/Friends</td>
<td>-0.246</td>
<td>0.754</td>
<td>0.150</td>
<td>0.285</td>
<td>0.527</td>
<td>7756</td>
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<tr>
<td>Number of Cable Channels</td>
<td>0.000</td>
<td>11.000</td>
<td>0.046</td>
<td>0.076</td>
<td>0.615</td>
<td>8617</td>
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<tr>
<td>% Voting GOP ’96</td>
<td>-0.380</td>
<td>0.449</td>
<td>0.465</td>
<td>0.684</td>
<td>0.679</td>
<td>8618</td>
</tr>
<tr>
<td>Conservative Ideology</td>
<td>-0.500</td>
<td>0.500</td>
<td>0.593</td>
<td>0.384</td>
<td>1.542</td>
<td>8405</td>
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<tr>
<td>Total Pop. ’00</td>
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<td>289.958</td>
<td>0.005</td>
<td>0.003</td>
<td>1.575</td>
<td>8617</td>
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<tr>
<td>Region: South</td>
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<td>1.000</td>
<td>0.559</td>
<td>0.295</td>
<td>1.898</td>
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</tbody>
</table>

Table 2: Interactions with Fox News Availability. Each row of this table reports a separate interaction term ($\beta$) between the listed variable and 2000 Fox News access. This interaction is included alongside our standard covariates and estimated for Republicans, Republican leaners, and pure independents.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean, Full with Fox</th>
<th>Mean, Full no Fox</th>
<th>Std. Diff. Full</th>
<th>Mean Matched with Fox</th>
<th>Mean Matched No Fox</th>
<th>Std. Diff. Matched</th>
</tr>
</thead>
<tbody>
<tr>
<td># Ch. D10</td>
<td>0.372</td>
<td>0.041</td>
<td>1.679</td>
<td>0.258</td>
<td>0.175</td>
<td>0.221</td>
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<tr>
<td>Pop. D10</td>
<td>0.450</td>
<td>0.171</td>
<td>0.743</td>
<td>0.407</td>
<td>0.229</td>
<td>0.422</td>
</tr>
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<td># Ch. D9</td>
<td>0.184</td>
<td>0.058</td>
<td>0.535</td>
<td>0.155</td>
<td>0.252</td>
<td>0.223</td>
</tr>
<tr>
<td># Ch. D8</td>
<td>0.164</td>
<td>0.052</td>
<td>0.506</td>
<td>0.216</td>
<td>0.162</td>
<td>0.149</td>
</tr>
<tr>
<td># Ch. D2</td>
<td>0.004</td>
<td>0.155</td>
<td>0.418</td>
<td>0.005</td>
<td>0.006</td>
<td>0.010</td>
</tr>
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<td># Ch. D6</td>
<td>0.058</td>
<td>0.177</td>
<td>0.313</td>
<td>0.078</td>
<td>0.136</td>
<td>0.171</td>
</tr>
<tr>
<td>% Urban '90</td>
<td>0.812</td>
<td>0.681</td>
<td>0.311</td>
<td>0.787</td>
<td>0.727</td>
<td>0.151</td>
</tr>
<tr>
<td># Ch. D3</td>
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<td>0.097</td>
<td>0.298</td>
<td>0.012</td>
<td>0.003</td>
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</tr>
<tr>
<td># Ch. D4</td>
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<td>0.103</td>
<td>0.290</td>
<td>0.020</td>
<td>0.028</td>
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<td># Ch. D5</td>
<td>0.026</td>
<td>0.100</td>
<td>0.246</td>
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</tr>
<tr>
<td>Lg. Pop. '90</td>
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<td>7.447</td>
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<td>0.214</td>
<td>0.207</td>
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<td>0.175</td>
<td>0.191</td>
<td>0.085</td>
<td>0.151</td>
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<td>HS '90</td>
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<td>0.321</td>
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<td>0.039</td>
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<tr>
<td>ZIP % w/ BA</td>
<td>0.264</td>
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<td>0.161</td>
<td>0.259</td>
<td>0.253</td>
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<tr>
<td>ZIP % Same House</td>
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<td>Pop. D2</td>
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<td>0.009</td>
<td>0.014</td>
<td>0.039</td>
</tr>
<tr>
<td>% Male '90</td>
<td>0.482</td>
<td>0.485</td>
<td>0.133</td>
<td>0.482</td>
<td>0.483</td>
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<td>0.030</td>
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<td>Pop. D5</td>
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<td>0.059</td>
<td>0.079</td>
<td>0.071</td>
</tr>
<tr>
<td>% Black '90</td>
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<td>0.115</td>
<td>0.073</td>
<td>0.050</td>
<td>0.262</td>
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<td>Pop. D4</td>
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<td>0.103</td>
<td>0.056</td>
<td>0.050</td>
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</tr>
<tr>
<td>Pop. D9</td>
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<td>0.100</td>
<td>0.152</td>
<td>0.245</td>
<td>0.218</td>
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<tr>
<td>Pop. D7</td>
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</tr>
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<td># Ch. D7</td>
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<td>0.202</td>
<td>0.042</td>
</tr>
<tr>
<td>% HS+ '90</td>
<td>0.250</td>
<td>0.244</td>
<td>0.088</td>
<td>0.245</td>
<td>0.239</td>
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</tr>
<tr>
<td>Pop. '90</td>
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<td>0.740</td>
<td>6.528</td>
<td>4.528</td>
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</tr>
<tr>
<td>ZIP Density '00</td>
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<td>0.001</td>
<td>0.073</td>
<td>0.001</td>
<td>0.001</td>
<td>0.052</td>
</tr>
<tr>
<td>Income '90</td>
<td>2.924</td>
<td>2.837</td>
<td>0.071</td>
<td>2.933</td>
<td>2.962</td>
<td>0.023</td>
</tr>
<tr>
<td>ZIP Income '00</td>
<td>47071.367</td>
<td>46098.792</td>
<td>0.061</td>
<td>46897.113</td>
<td>46804.676</td>
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</tr>
<tr>
<td>Pop. D6</td>
<td>0.083</td>
<td>0.101</td>
<td>0.060</td>
<td>0.096</td>
<td>0.109</td>
<td>0.042</td>
</tr>
<tr>
<td>Variable</td>
<td>Mean, Full with Fox</td>
<td>Mean, Full no Fox</td>
<td>Std. Diff.</td>
<td>Mean, Full with Fox</td>
<td>Mean, Full No Fox</td>
<td>Std. Diff.</td>
</tr>
<tr>
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<td>-------------------</td>
<td>------------</td>
<td>---------------------</td>
<td>-------------------</td>
<td>------------</td>
</tr>
<tr>
<td>% Emp. '90</td>
<td>0.603</td>
<td>0.608</td>
<td>0.059</td>
<td>0.599</td>
<td>0.613</td>
<td>0.175</td>
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<tr>
<td>Female</td>
<td>0.515</td>
<td>0.487</td>
<td>0.058</td>
<td>0.530</td>
<td>0.476</td>
<td>0.110</td>
</tr>
<tr>
<td>Born Again</td>
<td>0.345</td>
<td>0.369</td>
<td>0.050</td>
<td>0.353</td>
<td>0.330</td>
<td>0.049</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.054</td>
<td>0.045</td>
<td>0.044</td>
<td>0.048</td>
<td>0.049</td>
<td>0.004</td>
</tr>
<tr>
<td>% Voting GOP '90</td>
<td>0.410</td>
<td>0.405</td>
<td>0.039</td>
<td>0.409</td>
<td>0.408</td>
<td>0.011</td>
</tr>
<tr>
<td>Married</td>
<td>0.605</td>
<td>0.623</td>
<td>0.038</td>
<td>0.606</td>
<td>0.612</td>
<td>0.013</td>
</tr>
<tr>
<td>ZIP % Hisp. '00</td>
<td>0.074</td>
<td>0.070</td>
<td>0.033</td>
<td>0.063</td>
<td>0.065</td>
<td>0.011</td>
</tr>
<tr>
<td>Education</td>
<td>0.535</td>
<td>0.526</td>
<td>0.032</td>
<td>0.531</td>
<td>0.538</td>
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</tr>
<tr>
<td>Party ID (1 =GOP)</td>
<td>0.782</td>
<td>0.777</td>
<td>0.032</td>
<td>0.782</td>
<td>0.782</td>
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<td>% Hisp. '90</td>
<td>0.047</td>
<td>0.045</td>
<td>0.030</td>
<td>0.041</td>
<td>0.043</td>
<td>0.027</td>
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<tr>
<td>Income</td>
<td>0.533</td>
<td>0.525</td>
<td>0.030</td>
<td>0.525</td>
<td>0.537</td>
<td>0.046</td>
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<td>Union</td>
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<td>0.171</td>
<td>0.029</td>
<td>0.169</td>
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</tr>
<tr>
<td>ZIP % Black '00</td>
<td>0.066</td>
<td>0.063</td>
<td>0.028</td>
<td>0.065</td>
<td>0.054</td>
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<tr>
<td>Black</td>
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<td>0.018</td>
<td>0.000</td>
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<tr>
<td>Asian Am.</td>
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<td>0.012</td>
<td>0.012</td>
<td>0.014</td>
<td>0.019</td>
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<tr>
<td>% Unemp. '90</td>
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<td>0.061</td>
<td>0.008</td>
<td>0.062</td>
<td>0.059</td>
<td>0.107</td>
</tr>
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</table>

Table 3: Balance for the Full, Matched Data Sets of Republicans, Republican leaners, and Pure Independents. The full data set includes 7,548 respondents, while the matched data set has 2,624 respondents. For measures that exist in both 1990 and 2000, only 1990 are shown. “D” indicates deciles, while “CH” indicates channels. The standardized difference is calculated by dividing the difference between each group’s mean by the control group’s standard deviation.
Figure 1: Estimated Effect of Fox News Access Among Different Partisan Groups. The dots indicate the average estimated effect of Fox News, while the thick lines indicate the effect’s standard deviation and the thin lines indicate 95% confidence intervals.
Figure 2: Estimated Effects of Fox News Access Among Republicans and Pure Independents. The dots indicate the average estimated effect of Fox News, while the thick lines indicate the effect’s standard deviation and the thin lines indicate 95% confidence intervals. The first result is from the basic modeling strategy, providing a baseline.
References


