

# The Consequences of Broader Media Choice: Evidence from the Expansion of Fox News\*

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## Abstract

In recent decades, the diversity of Americans' news choices has expanded substantially. This paper examines whether increased access to an ideologically distinctive news source—the Fox News cable channel—influences vote intentions. It also considers whether any such effect is concentrated among those likely to agree with Fox's viewpoint. To test these possibilities with individual-level data, we identify local Fox News availability for 22,592 respondents to the 2000 National Annenberg Election Survey. For the population overall, we find an average treatment effect indistinguishable from zero. Yet we also find a sizable effect of Fox access on the vote intentions of Republicans and pure independents, a finding that is bolstered by placebo tests. Contrary to fears about pervasive media influence, but consistent with an older tradition of media scholarship, access to an ideologically distinctive media source reinforces the loyalties of co-partisans and possibly persuades independents without influencing out-partisans.

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# 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 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).<sup>1</sup> 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, Krassa and Polborn, 2008; Stroud, 2008, 2011).

In this paper, we address a question that this transformation in the American media landscape has made increasingly important: what is the effect of increased access to ideologically distinctive news sources on voters’ partisan preferences? 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 as Bennett and Iyengar (2008) point out, the recent changes in the U.S. media environment give viewers increased discretion in selecting their news sources, discretion which might unsettle past conclusions about media influence. One major theme of prior research is the capacity of news media exposure to reinforce citizens’ political predispositions (e.g. Lazarsfeld, Berelson and Gaudet, 1948; Berelson, Lazarsfeld and McPhee, 1954; Abramowitz, 1978; Gelman and King, 1993; Ansolabehere and Iyengar, 1995; Taber and Lodge, 2006). Do those findings remain

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<sup>1</sup>Measuring media use with ratings data instead 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).

applicable in today’s media market?

To address that theoretical question, we provide a case study of the Fox News cable channel, which epitomizes recent changes in the media landscape. 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). Fox’s programming was ideologically distinctive from its debut, when its prime-time line-up featured programs with prominent conservative hosts such as *The O’Reilly Factor* and *Hannity and Colmes*. In an analysis of news coverage from 1993 through 2002, Groseclose and Milyo (2005, 2228) find Fox News’ coverage to be more conservative than any other outlet they examined except the *Washington Times*. Its audience reflects the channel’s relatively conservative slant: in 2010, Fox’s viewership contained over twice as many Republicans as Democrats (Pew Center for the People and the Press, 2010).<sup>2</sup>

Compared to other would-be case studies, Fox’s gradual expansion also affords unique empirical leverage to estimate the effects of access to an ideologically distinctive news source. One prominent study exploits the fact that Fox was only available in 20% of U.S. municipalities in 2000 to estimate its effects on voting (DellaVigna and Kaplan 2007; see also Clinton and Enamorado 2012). 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 effect appears concentrated in Democratic communities. However, Hainmueller (2012, Online Appendix, p. 6) replicates this town-level analysis and finds that the effect of Fox News is indistinguishable from zero after reducing covariate imbalances. Thus, the literature remains conflicted about the influence of Fox News access on voting—and uncertain about

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<sup>2</sup>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).

whether any effects are more pronounced among specific sub-groups of voters.

This paper 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, we combine data from DellaVigna and Kaplan (2007) 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 (e.g. Prior, 2007; Stroud, 2011).<sup>3</sup>

Our results indicate that the current media environment enhances partisan reinforcement and potentially persuades independents, but without persuading out-partisans. We find no clear 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. Yet we do detect an effect among those respondents most likely to be tuning in to Fox News and least likely to disagree 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 ( $p=0.06$ , two-sided).

This study goes beyond previous work in other ways as well. It demonstrates positive effects

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<sup>3</sup>The 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.

of Fox News availability on George W. Bush’s favorability. Yet it finds few effects on other dependent variables, such as political knowledge or the consumption of other news media. This paper also investigates the process through which Fox News expanded, and in doing so, it reinforces a concern suggested by Hainmueller (2012, Online Appendix) that Fox News targeted larger cable providers and larger communities. In response, we conduct additional analyses using matching as a pre-processing step to reduce model dependence (Ho et al., 2007) and 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 causal effects we attribute to Fox News are not driven by any deliberate targeting of Republican-leaning communities as the channel expanded.

## Media Effects on Voting Preferences

Recent decades have seen shifts in how scholars understand media influence and in the empirical strategies they employ to estimate it. This section outlines these theoretical approaches and prior findings. While the terminology in the media effects literature can be inconsistent at times, we refer to any such influence of the news media on attitudes as persuasion, irrespective of whether that influence reinforces or undercuts viewers’ prior attitudes. In this, we follow O’Keefe (2002), who defines persuasion as any successful effort to durably influence another’s mental state through communication.<sup>4</sup>

Earlier generations of media studies emphasized the media’s activation or reinforcement

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<sup>4</sup>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.”

of existing predispositions (Lazarsfeld, Berelson and Gaudet, 1948; Berelson, Lazarsfeld and McPhee, 1954; Abramowitz, 1978). While contemporary scholarship documents a wide variety of additional media effects, it continues to find evidence of media-induced partisan reinforcement 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 are likely to underpin partisan reinforcement. The first is selective exposure, wherein 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 or content resonate with their prior views (e.g. Zaller, 1992; Taber and Lodge, 2006).<sup>5</sup> Through these mechanisms, media exposure can strengthen recipients' existing attitudes and lead them to adopt new preferences about policies and candidates advocated by their party's 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.

Research has also explored media effects beyond reinforcement (Zaller, 1996; Kinder, 1998, 2003). In part, recent scholarship has uncovered new media effects by expanding the range of phenomena under examination to include 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, 2007*a*). Such effects operate through cognitive accessibility, and so should vary based on the message recipient's prior attitudes. Yet some recent scholarship reports evidence of more straightforward persuasion of both in-partisans and out-partisans (e.g. Bartels, 1993; Hetherington, 1996; Smidt, 2008; Ladd and Lenz, 2009; Gerber, Karlan and Bergan, Forthcoming).

The extent to which media effects are narrowly reinforcing or more broadly persuasive may depend on the structure of the media market. As noted in the introduction, the news

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<sup>5</sup>A third possible mechanism, less prominent in prior research, is that certain messages prime partisanship by heightening the mental accessibility of partisan considerations. 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).

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. Greater media choice allows those uninterested in news to avoid it altogether (Prior, 2007) and better enables those who do consume news to select sources whose ideological slants reflect their predispositions (Mullainathan and Shleifer, 2005; Iyengar and Hahn, 2007; Stroud, 2008, 2010, 2011; Pew Center for the People and the Press, 2010). This selective exposure has the potential to enhance partisan reinforcement effects (e.g. Hollander, 2008; Stroud, 2010, 2011) and to limit other types of media effects (Bennett and Iyengar, 2008).

## Effects of Ideologically Distinctive Media

What does prior scholarship indicate about the effects of ideologically distinctive news outlets on partisan preferences? 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 that effect especially difficult in observational data. Still, there is a rich empirical literature addressing these questions (e.g. Erikson, 1976; Bartels, 1993; Barker, 2002; Druckman and Parkin, 2005; Ladd and Lenz, 2009; Gentzkow, Shapiro and Sinkinson, Forthcoming).

One widely cited study is DellaVigna and Kaplan (2007).<sup>6</sup> It examines the effect of Fox News on presidential voting in 2000 by exploiting Fox's incomplete roll-out onto cable systems 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.

A key question posed by the existing literature is whether ideologically distinctive news sources such as Fox influence primarily in-partisans or whether the effects are more uniform or even concentrated among out-partisans. DellaVigna and Kaplan (2007, 1213) report an

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<sup>6</sup>Through October 19, 2012, it had been cited 378 times according to Google Scholar.

interaction between Fox News accessibility and local partisanship, with Democratic towns showing larger treatment effects.<sup>7</sup> But aggregate data can only provide insights about subgroup effects under strong assumptions. 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. The use of an individual-level data set also enables us to reduce model dependence, and to help adjudicate between the conflicting prior results from studies that use town-level data (e.g. DellaVigna and Kaplan, 2007; Hainmueller, 2012).

## 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 conservative 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).<sup>8</sup> Given this, to the extent that Fox News access is con-

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<sup>7</sup>Relatedly, Clinton and Enamorado (2012) find that the introduction of Fox News leads to more conservative voting among Congressional Democrats.

<sup>8</sup>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),

founded, variables such as the town’s size or its number of potential subscribers are likely to be the primary sources of bias.

In the Appendix, we report detailed procedures for using respondents’ ZIP codes to identify the corresponding Census-Designated Place (CDP), and with it, respondents’ Fox News access in 2000. In all, we were able to identify ZIP codes for 7,111 of the CDPs observed in the original town-level data provided by DellaVigna and Kaplan (2007), 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.<sup>9</sup>

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.<sup>10</sup> 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 are able to use respondents’ ZIP codes to match 22,592 respondents to towns for which DellaVigna and Kaplan (2007) provide data on Fox News availability, a number which represents 68.3% of all NAES respondents in the 26 states.<sup>11</sup> 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.

## Modeling Choices

DellaVigna and Kaplan (2007) use a differences-in-differences design, where Fox News 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.

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<sup>9</sup>This constitutes 79.3% of those in the full set of towns used in DellaVigna and Kaplan (2007). The Appendix also reports results showing that the original, town-level effect reported in DellaVigna and Kaplan (2007) holds for the subset of their original sample used here.

<sup>10</sup>The 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.

<sup>11</sup>In 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.

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. 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 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. 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.<sup>12</sup> 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.

The NAES’s individual-level data 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).<sup>13</sup> They also control for stable attitudinal variables such as partisan identification (Green, Palmquist and Schickler, 2002) and identification as a born-again Christian. The

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<sup>12</sup>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.

<sup>13</sup>To reduce assumptions about functional forms, our models include indicator variables for each response category for multi-valued responses such as income or education.

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). Overall, there are a variety of potential sources of bias in town-level data 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, political surveys appear to be quite accurate measures of respondents’ voting choices 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.”<sup>14</sup>

The basic model here includes an intercept, an indicator for Fox News availability, and

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<sup>14</sup>As described below, our results are robust to changes in the coding of the dependent variable.

a total of 109 other covariates. 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 code- 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 include six ZIP code-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.

## 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 coefficient on living in a place where Fox News is available is 0.061, with a standard error of 0.072. Clustering the standard errors at the district, county, town, or ZIP-code level has essentially no effect on our estimates of uncertainty.<sup>15</sup> The full fitted model is available in

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<sup>15</sup>The analyses in DellaVigna and Kaplan (2007) employ standard errors clustered 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.

Table 1. It is important to add that the uncertainty associated with a given coefficient is a function not only of the sample size but also of the correlations among the independent variables. In this case, the inclusion of such a large number of ZIP- and town-level variables reduces potential biases, but also increases uncertainty about the quantity of interest.

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 treatment effect heterogeneity.

As noted in previous sections, the past literature on the media in campaigns indicates that partisan reinforcement is a common effect. In general, citizens respond to political messages differently depending on their partisan predispositions. Given all this, 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 model described above to these subsets, and set all variables to their group-specific

## Fox News Effects by Partisan Group

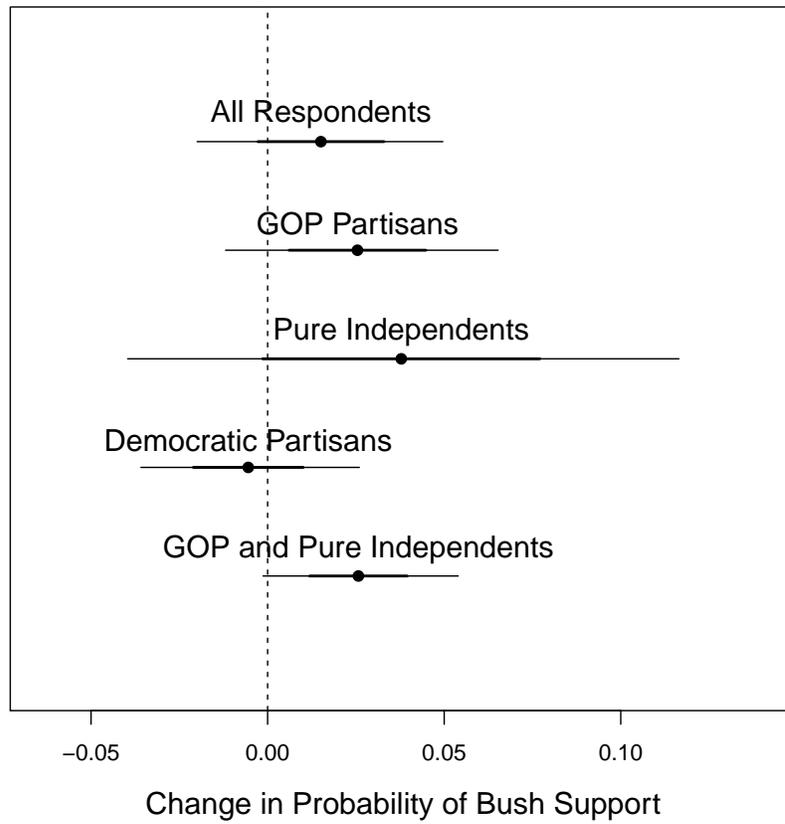


Figure 1: Estimated Effect of Fox News Access Among Different Partisan Groups. The dots indicate the average estimated effect of Fox News, while the thick lines indicate the effect's standard deviation and the thin lines indicate 95% confidence intervals.

medians.<sup>16</sup> This modeling approach is similar to estimating an interaction effect between each partisan grouping and Fox News coverage, with the important addition that it allows the other coefficients to vary by partisan grouping as well.

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 3.7 percentage points. Yet there is so much uncertainty that the corresponding two-sided p-value is 0.34.<sup>17</sup> For Democrats, on the other hand, the estimated effect is actually negative but near zero (-0.5 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, do not have an individual-level analog. Our analyses suggest that the potential voters who tend to agree with Fox News’s overall slant are those more likely to be influenced by the channel. The results prove surprisingly insensitive to model specification, as detailed in the Appendix.

Theories of partisan reinforcement emphasize the influence of communications on those already predisposed to agree. Yet it is also plausible that communications will influence people *not* predisposed to *disagree*, a subtle distinction that would lead us to expect pure independents to respond to Fox News more like Republicans than like Democrats. The point estimates above give some suggestion that this is the case, albeit with considerable uncertainty induced by the small share of our respondents who are pure independents (14%). In light of those results, and in light of the theoretical possibility that prior disagreement might prevent persuasion among Democrats, our subsequent analyses combine the Republican identifiers and leaners with the

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<sup>16</sup>For all simulations, the state is again set to Pennsylvania to ensure comparability.

<sup>17</sup>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).

pure independents ( $n=8,726$ ). 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.

## 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.<sup>18</sup> 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.<sup>19</sup> 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.<sup>20</sup> 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

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<sup>18</sup>On the advantages of placebo tests for making causal inferences, see Sekhon (2009).

<sup>19</sup>The 1992 Republican vote share is not included in our baseline models, in part because this variable is only observed for 36% of respondents in the full data set. In this robustness check, 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.

<sup>20</sup>The estimated Fox News coefficient from the full logistic regression is 0.207 with a standard error of 0.104.

## Fox News Effects Robustness

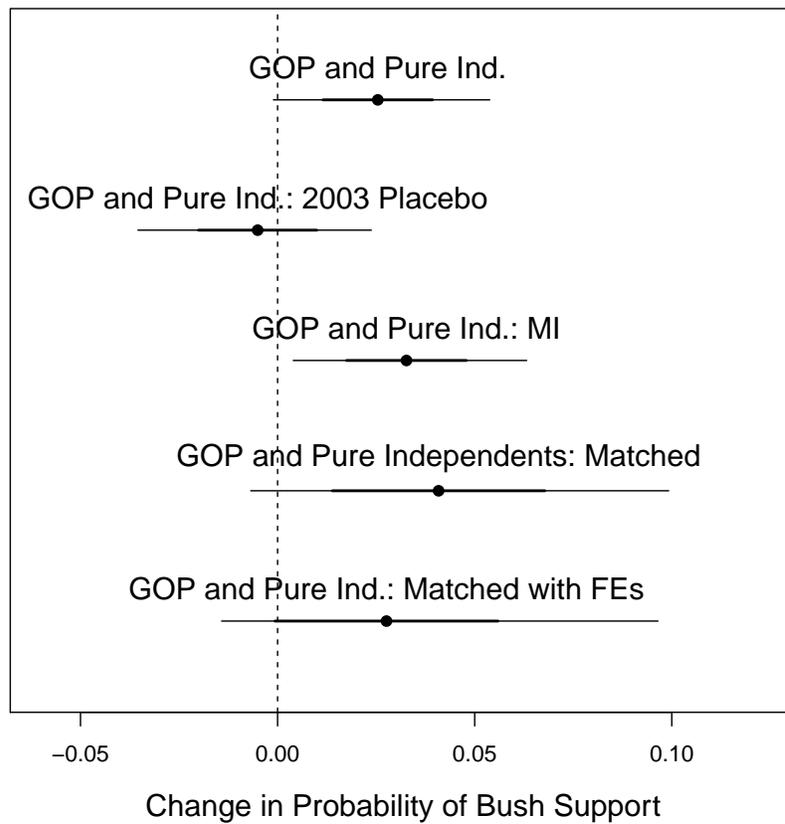


Figure 2: Estimated Effects of Fox News Access Among Republicans and Pure Independents. The dots indicate the average estimated effect of Fox News, while the thick lines indicate the effect's standard deviation and the thin lines indicate 95% confidence intervals. The first result is from the basic modeling strategy, providing a baseline.

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.<sup>21</sup> 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. And nor are they driven by our missing data strategy. As detailed in the Appendix and illustrated in Figure 2, using multiple imputed data sets (King et al., 2001) returns an estimated effect of 3.3 percentage points, 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 esti-

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<sup>21</sup>The actual effect of Fox News on Republicans and pure independents is larger than this placebo effect in 93% of simulations.

mate for the Fox News effect is almost identical, at 2.6 percentage points, albeit with increased uncertainty.<sup>22</sup>

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, we used a separate survey—the Pew Research Center’s 2000 “Believability” survey—to model individual-level Fox News exposure and generate predicted levels for our NAES respondents. The full analysis is detailed in the Appendix. 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).

## 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%.<sup>23</sup> In fact, both the original DellaVigna and Kaplan (2007) article and the re-analysis reported by Hainmueller

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<sup>22</sup>We also estimated a separate model to see if Fox News access had any conditional correlation with a binary indicator of candidate preference for the 433 respondents who did not plan to vote. It did not, as the Fox News coefficient in that model was 0.026 with a standard error of 0.171.

<sup>23</sup>These deciles are defined with respect to the population of towns, not the population of survey respondents.

(2012) provide evidence of model dependence related to these variables.<sup>24</sup>

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 propensity 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,<sup>25</sup> we employ a hybrid technique of exact matching on key covariates and Mahalanobis matching on others. 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. As detailed in the Appendix, the procedure is highly effective. The resulting data set of 2,624 matched respondents shows markedly better covariate balance, especially on measures of town size that were previously imbalanced and that were correlated with Fox’s expansion strategy. For example, in the full data set, 37.2% of towns with Fox News fall into the highest decile in terms of their number of available channels, while 4.1% of towns without Fox News do so. After matching, the comparable figures are 25.8% and 17.5%.

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. In the matched data, the estimated difference between the treated and control units is 4.1 percentage points, with a 95% confidence interval from -0.9 to

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<sup>24</sup>As noted above, 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).

<sup>25</sup>These analyses side-step the distinction between vote intentions and vote decisions by excluding respondents 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.

9.9 percentage points.<sup>26</sup> This effect is illustrated at the bottom of Figure 2, and the associated two-sided p-value is 0.09.<sup>27</sup>

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 generally robust to model specification as well as to data reduction, albeit with increased uncertainty. 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.

## Other Sources of Heterogeneity

Informed by decades of theorizing and empirical results on partisan 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, 2007*b*), whose pre-existing cognitive schema might be better equipped to incorporate the new messages? Or does it appear

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<sup>26</sup>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.

<sup>27</sup>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.

among those with middle levels of political knowledge (Zaller, 1992), who might be sufficiently attentive to its messages and yet still open to persuasion? 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, where local social life 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-statistic. Due to different levels of missingness, the final 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).

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).<sup>28</sup> 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 access appears no stronger or weaker in towns with many cable channels. Any p-value adjustment for multiple comparisons would reinforce the conclusion of treatment effect stability, as it would raise the threshold for declaring any sub-group differences statistically significant.

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 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 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 and independent 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).

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<sup>28</sup>We 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.

## Other Outcomes

Our focus here has been on the conditional relationship between Fox News availability and citizens' vote intentions. But the Annenberg data provide us with a variety of other potential dependent variables, from political knowledge and media consumption to other political attitudes and behaviors. For the most part, these effects are null, even without a correction for multiple comparisons. Using the same basic model for the full data set and the non-Democratic subset, we find no strong effects of Fox News availability on political knowledge<sup>29</sup>, newspaper readership, listening to talk radio, watching other cable news channels, or talking about politics with coworkers or friends and family. Among the non-Democratic subset, we do detect a few noteworthy effects: GOP nominee George W. Bush is scored more favorably on a 100-point feeling thermometer by those with Fox News access ( $\beta = 1.58, SE = 0.71$ ), and Democratic nominee Al Gore is scored somewhat less favorably ( $\beta = -1.32, SE = 0.86$ ). Additionally, non-Democratic respondents in towns with Fox News access are more likely to advocate for their candidate ( $\beta = 0.058, SE = 0.017$ ), a statistically strong and provocative finding that we confirmed using logistic regression ( $\beta = 0.37, SE = 0.14$ ). In sum, Fox News access makes comparable non-Democrats more favorable toward the GOP nominee, and appears to have the opposite effect for the Democratic nominee. It also makes non-Democrats 45% more likely to advocate for their Presidential candidate, a fact which is reminiscent of the two-step information flow posited by Katz and Lazarsfeld (1955).

## Discussion and Conclusion

To a media consumer from the 1970s, today's choices for news would likely be striking both in their number and their ideological diversity. Here, we have analyzed the expansion of Fox News in the lead-up to the 2000 Presidential election as a case study to better understand media effects in an era of increasing ideological diversity. Our analyses indicate that Fox

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<sup>29</sup>When specifying the dependent variable as a composite score from the survey's political knowledge battery, the overall coefficient is -0.0037 with a standard error of 0.0061.

News access does not have broad effects on the public’s electoral preferences. Instead, the effects are confined to reinforcing the predispositions of Republicans and possibly persuading independents.

This case of Fox News’ expansion in the late 1990s offers scholars significant empirical leverage to identify the effects of access to ideologically distinctive news (see also Clinton and Enamorado, 2012). Access to Fox News depended in part of idiosyncrasies related to cable system ownership, allowing us to observe similar voters in similar towns who had or lacked access to the channel. In the decade since 2000, the growth of satellite television and changes in the cable television market have broken the connection between geography and television news access, making it difficult to replicate this research design for more recent elections. Yet at the same time, changes since 2000 have made these research questions increasingly important, as we have seen Fox’s audience grow and become more Republican-leaning (Project for Excellence in Journalism, 2009) at the same time that rivals like MSNBC have emerged on the left (Pew Center for the People and the Press, 2010). Our results indicate that Republicans and possibly pure independents were influenced by increased Fox News access in the late 1990s—but it remains an open question whether Fox News produces similar effects today, or whether MSNBC produces parallel effects on Democrats. Future research could also 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?

Concerns about the nature of media influence long predate the current era of media fragmentation. For example, 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.” The rise of radio and then television exacerbated these concerns. Zaller (1992, 310) notes that “[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; Goldberg, 2002).

The recent shift to a more diverse, fragmented media market has renewed concerns about media influence on public opinion. Some observers worry that today’s more diverse and ideological news outlets—whether on television, the radio, or the internet—might have widespread persuasive effects. 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). This paper’s results do not eliminate these perpetual fears, but they do illustrate an important limit on them: Democratic respondents seem unaffected by access to Fox News, suggesting that out-partisans are shielded from media influences that run contrary to their predispositions.

Instead, the primary concerns validated by these findings relate to mass political polarization. Partisan voting in U.S. presidential elections has increased steadily since the 1970s (Bartels, 2000; McCarty, Poole and Rosenthal, 2006; Levendusky, 2009). The evidence here suggests that the availability of partisan news sources may be one source of that trend. As more explicitly opinionated sources enter the news marketplace, partisans increasingly choose outlets that reflect their pre-existing biases (e.g. Stroud, 2011). Once chosen, those outlets reinforce viewers’ partisan voting tendencies. In the run-up to the 2000 election, Fox News was a likely contributor to this cycle of partisan reinforcement, having reduced opportunities for voters to encounter information that undercut their prior beliefs.

Variable	$\beta$	SE	Variable	$\beta$	SE	Variable	$\beta$	SE
Intercept	-1.645	0.999	College	-0.451	0.178	Pop. D9	-0.615	0.275
Fox News Access	0.061	0.072	Some Grad	-0.670	0.219	Pop. D10	-0.544	0.276
Weak Democrat	1.524	0.109	Grad Degree	-0.744	0.183	# Ch. D2	0.122	0.117
Lean Democrat	1.590	0.108	Female	-0.193	0.047	# Ch. D3	0.050	0.130
Pure Ind.	3.097	0.108	% GOP 1996	1.308	0.312	# Ch. D4	0.090	0.126
Lean GOP	4.738	0.114	No Cable '00	-0.071	0.070	# Ch. D5	0.059	0.127
Weak GOP	4.616	0.111	Pop. '00	-0.070	0.024	# Ch. D6	0.009	0.117
Strong GOP	6.242	0.143	% HS '00	-0.489	0.927	# Ch. D7	-0.006	0.124
Lg. Pop. '00	0.087	0.147	% HS+ '00	-0.431	0.983	# Ch. D8	-0.121	0.137
Lg. Pop. '90	-0.109	0.142	% College '00	0.070	0.982	# Ch. D9	0.152	0.133
Pop. '00 Sq.	-0.265	0.209	% Male '90	-1.697	1.398	# Ch. D10	0.087	0.139
Pop. '00 Cubed	0.001	0.001	% Black '90	0.208	1.064	NH	-0.487	0.271
Born Again	0.590	0.054	% Hisp. '90	0.485	1.235	VT	0.004	0.341
Married	0.079	0.051	% Emp. '90	0.489	0.690	MA	-0.079	0.210
Union	-0.239	0.060	% Unemp. '90	0.013	1.229	RI	-0.501	0.307
ZIP Hsh. Income	0.000	0.003	% Married '90	-0.189	0.690	CT	-0.441	0.240
ZIP % BA	-1.044	0.443	Income '90	-0.001	0.051	NY	-0.183	0.202
ZIP % Black	0.081	0.313	% Urban '90	-0.130	0.147	NJ	-0.102	0.223
ZIP % Same House	0.006	0.429	Pop. '00	0.084	0.026	PA	-0.453	0.203
ZIP Dens. '00	-28.06	21.49	% HS '00	1.141	1.092	OH	-0.293	0.196
ZIP % Hisp.	-0.472	0.497	% HS+ '00	1.270	1.105	MI	-0.220	0.201
Black	-0.978	0.125	% College '00	0.226	1.091	WI	-0.235	0.205
Asian Am.	-0.129	0.171	% Male '00	-0.176	1.378	MN	-0.435	0.210
Hispanic	0.023	0.101	% Black '00	0.167	1.030	IA	-0.716	0.230
Inc. \$10K-\$15K	0.055	0.130	% Hisp. '00	0.386	1.044	MO	-0.216	0.271
Inc. \$15K-\$25K	0.109	0.118	% Emp. '00	-0.986	0.725	ND	-0.003	0.486
Inc. \$25K-\$35K	0.073	0.118	% Unemp. '00	0.377	1.075	VA	-0.147	0.235
Inc. \$35K-\$50K	0.181	0.118	% Married '00	0.199	0.730	SC	-0.176	0.275
Inc. \$50K-\$75K	0.376	0.120	Income '00	0.010	0.037	TN	-0.876	0.266
Inc. \$75K-\$100K	0.190	0.131	% Urban '00	0.248	0.164	AL	0.001	0.305
Inc. \$100K-\$150K	0.238	0.145	Pop. D2	-0.286	0.276	AR	-0.177	0.319
Inc. >\$150K	0.308	0.162	Pop. D3	-0.482	0.265	MT	0.083	0.376
Some HS	-0.372	0.187	Pop. D4	-0.532	0.264	ID	0.012	0.359
HS Graduate	-0.249	0.169	Pop. D5	-0.423	0.267	WY	0.318	0.389
Tech./Vocational	-0.454	0.207	Pop. D6	-0.569	0.268	UT	-0.191	0.357
Some College	-0.429	0.175	Pop. D7	-0.461	0.271	CA	-0.444	0.222
Associate's	-0.348	0.183	Pop. D8	-0.613	0.271			

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.

Interacted Variable	Min	Max	$\beta$	SE	Z Value	N
Interest in Gov't	0.000	1.000	-0.654	0.227	-2.885	8602
Military	0.000	1.000	-0.388	0.154	-2.521	8617
Registered to Vote	0.000	1.000	-0.255	0.163	-1.559	8617
Talk at Work	0.000	1.000	-0.495	0.337	-1.470	7445
Internet Use	0.000	1.000	-0.221	0.165	-1.343	8613
Region: West	0.000	1.000	-0.238	0.207	-1.151	8618
Fox News Access '98	0.000	1.000	-0.623	0.618	-1.008	6180
Disagree at Work	0.000	1.000	-0.300	0.319	-0.940	7753
Region: Midwest	0.000	1.000	-0.118	0.168	-0.701	8617
Pol. Knowledge, Folded	-0.233	0.280	-0.309	0.498	-0.619	8117
ZIP Name Matches	0.000	1.000	-0.100	0.221	-0.452	8617
Time: Months to Election	-2.000	11.000	-0.011	0.024	-0.441	8617
Read Newspaper	0.000	1.000	-0.063	0.183	-0.346	8606
Lg. Pop. '90	-0.916	11.974	-0.017	0.049	-0.337	8618
Watch Other Cable News	0.000	1.000	-0.057	0.191	-0.297	8597
Moved Recently	0.000	1.000	-0.079	0.271	-0.291	8617
Attention to News	0.000	1.000	-0.049	0.218	-0.226	8175
Centroid w/i CDP	0.000	1.000	-0.035	0.158	-0.219	8617
Talk Radio	0.000	1.000	-0.046	0.229	-0.199	8596
Union	0.000	1.000	-0.017	0.192	-0.089	8618
Talk with Family	-0.305	0.695	-0.009	0.264	-0.034	7447
Pol. Knowledge/Interest	-0.625	0.375	-0.003	0.292	-0.009	8617
Time: During Campaign	0.000	1.000	0.001	0.150	0.007	8617
Pol. Knowledge	-0.534	0.466	0.008	0.262	0.030	8117
Time: After Campaign	0.000	1.000	0.089	0.236	0.376	8617
Born Again	0.000	1.000	0.078	0.171	0.456	8618
Care Who Wins	-0.629	0.371	0.071	0.152	0.465	8541
Disagree with Family/Friends	-0.246	0.754	0.150	0.285	0.527	7756
Number of Cable Channels	0.000	11.000	0.046	0.076	0.615	8617
% Voting GOP '96	-0.380	0.449	0.465	0.684	0.679	8618
Conservative Ideology	-0.500	0.500	0.593	0.384	1.542	8405
Total Pop. '00	0.009	289.958	0.005	0.003	1.575	8617
Region: South	0.000	1.000	0.559	0.295	1.898	8617

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.

## References

- Abramowitz, Alan I. 1978. "The Impact of a Presidential Debate on Voter Rationality." *American Journal of Political Science* 22(3):680–90.
- Achen, Christopher H. and W. Phillips Shively. 1995. *Cross-Level Inference*. Chicago: University of Chicago Press.
- Althaus, Scott L. and Young Mie Kim. 2006. "Priming Effects in Complex Information Environments: Reassessing the Impact of News Discourse on Presidential Approval." *Journal of Politics* 68(4):960–976.
- Ansolabehere, Stephen and Shanto Iyengar. 1995. *Going Negative: How Attack Ads Shrink and Polarize the Electorate*. New York: Free Press.
- Barker, David C. 2002. *Rushed to Judgment: Talk Radio, Persuasion, and American Political Behavior*. New York: Columbia University Press.
- Bartels, Larry M. 1993. "Messages Received: The Political Impact of Media Exposure." *American Political Science Review* 87(2):267–285.
- Bartels, Larry M. 2000. "Partisanship and Voting Behavior, 1952-1996." *American Journal of Political Science* 44(1):35–50.
- Bartels, Larry M. 2006. Priming and Persuasion in Presidential Campaigns. In *Capturing Campaign Effects*, ed. Henry E. Brady and Richard Johnston. Ann Arbor: University of Michigan Press pp. 78–112.
- Baum, Matthew A. and Samuel Kernell. 1999. "Has Cable Ended the Golden Age of Presidential Television?" *American Political Science Review* 93(1):99–114.
- Bennett, W. Lance and Shanto Iyengar. 2008. "A New Era of Minimal Effects? The Changing Foundations of Political Communication." *Journal of Communication* 58(4):707–731.
- Berelson, Bernard, Paul F. Lazarsfeld and William N. McPhee. 1954. *Voting: A Study of Opinion Formation in a Presidential Campaign*. Chicago: University of Chicago Press.
- Berinsky, Adam J. 2009. *In Time of War: Understanding American Public Opinion from World War II to Iraq*. Chicago, IL: University of Chicago Press.
- Berinsky, Adam J. and Donald R. Kinder. 2006. "Making Sense of Issues through Media Frames: Understanding The Kosovo Crisis." *Journal of Politics* 68(3):640–656.
- Bernhardt, Dan, Stefan Krasa and Mattias Polborn. 2008. "Political Polarization and the Electoral Effects of Media Bias." *Journal of Public Economics* 92(5-6):1092–1104.
- Chong, Dennis and James N. Druckman. 2007a. "Framing Theory." *Annual Review of Political Science* 10:103–126.
- Chong, Dennis and James N. Druckman. 2007b. "A Theory of Framing and Opinion Formation in Competitive Elite Environments." *Journal of Communication* 57(1):99–118.

- Chong, Dennis and James N. Druckman. 2010. "Dynamic Public Opinion: Communication Effects Over Time." *American Political Science Review* 104(4):663–680.
- Clinton, Joshua D. and Ted Enamorado. 2012. "The Fox News Factor: How the Spread of Fox News Affects Position Taking in Congress." Mimeo, Vanderbilt University.
- Collins, Scott. 2004. *Crazy Like a Fox: The Inside Story of How Fox News Beat CNN*. New York: Portfolio.
- DellaVigna, Stefano and Ethan Kaplan. 2007. "The Fox News Effect: Media Bias and Voting." *Quarterly Journal of Economics* 122(3):1187–1234.
- Druckman, James N. and Arthur Lupia. 2000. "Preference Formation." *Annual Review of Political Science* 3:1–24.
- Druckman, James N. and Michael Parkin. 2005. "The Impact of Media Bias." *Journal of Politics* 67(4):1030–1142.
- Erikson, Robert S. 1976. "Influence of Newspaper Endorsements in Presidential Elections: Case Of 1964." *American Journal of Political Science* 20(2):207–233.
- Gasper, John T. 2009. "Reporting for Sale: The Market for Coverage." *Public Choice* 141(3–4):493–508.
- Gasper, John T. 2011. "Shifting Ideologies? Re-examining Media Bias." *Quarterly Journal of Political Science* 6(1):85–102.
- Gelman, Andrew, David Park, Boris Shor, Joseph Bafumi and Jeronimo Cortina. 2008. *Red State, Blue State, Rich State, Poor State: Why Americans Vote the Way They Do*. Princeton: Princeton University Press.
- Gelman, Andrew and Gary King. 1993. "Why Are American Presidential Election Campaign Polls So Variable When Votes Are So Predictable?" *British Journal of Political Science* 23(1):409–451.
- Gentzkow, Matthew and Jesse M. Shapiro. 2006. "Media Bias and Reputation." *Journal of Political Economy* 114(2):280–316.
- Gentzkow, Matthew, Jesse M. Shapiro and Michael Sinkinson. Forthcoming. "The Effect of Newspaper Entry and Exit on Electoral Politics." *American Economic Review* .
- Gerber, Alan, Dean Karlan and Daniel Bergan. Forthcoming. "Does the Media Matter? A Field Experiment Measuring the Effect of Newspapers on Voting Behavior and Political Opinions." *American Economic Journal: Applied Economics* .
- Goldberg, Bernard. 2002. *Bias: A C.B.S. Insider Exposes How the Media Distort the News*. Washington, DC: Regnery Publishing.
- Green, Donald P., Bradley Palmquist and Eric Schickler. 2002. *Partisan Hearts and Minds: Political Parties and the Social Identity of Voters*. New Haven: Yale University Press.

- Greenwald, Robert. 2004. "Outfoxed: Rupert Murdoch's War on Journalism." Brave New Films. Film.
- Groseclose, Timothy and Jeff Milyo. 2005. "A Measure of Media Bias." *Quarterly Journal of Economics* CXX(4):1191–1237.
- Hainmueller, Jens. 2012. "Entropy Balancing: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies." *Political Analysis* 20(1):25–40.
- Hall, John. 1997. "Fox News Opens, But Not in N.Y." *Electronic Media* 15(41):1.
- Hetherington, Marc J. 1996. "The Media's Role in Forming Voters' National Economic Evaluations in 1992." *American Journal of Political Science* 40(2):372–395.
- Ho, Daniel E., Kosuke Imai, Gary King and Elizabeth Stuart. 2007. "Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference." *Political Analysis* 15:199–236.
- Hollander, Barry A. 2008. "Tuning Out or Tuning Elsewhere? Partisanship, Polarization and Media Migration from 1998 to 2006." *Journalism and Mass Communication Quarterly* 85(1):23–40.
- Huber, Gregory A. and Kevin Arceneaux. 2007. "Identifying the Persuasive Effects of Presidential Advertising." *American Journal of Political Science* 51(4):957–977.
- Huckfeldt, Robert and John Sprague. 1995. *Citizens, Politics and Social Communication: Information and Influence in an Election Campaign*. New York: Cambridge University Press.
- Iyengar, Shanto and Donald Kinder. 1987. *News that Matters: Television and American Opinion*. Chicago: The University of Chicago Press.
- Iyengar, Shanto and Kyu S. Hahn. 2007. "Red Media, Blue Media: Evidence of Ideological Selectivity in Media Use." *Journal of Communication* 59(1):19–39.
- Jamieson, Kathleen Hall and Joseph N. Cappella. 2008. *Echo Chamber: Rush Limbaugh and the Conservative Media Establishment*. New York, NY: Oxford University Press.
- Johnston, Richard, Michael G. Hagen and Kathleen Hall Jamieson. 2004. *The 2000 Presidential Election and the Foundations of Party Politics*. New York: Cambridge University Press.
- Kafka, Peter. 1999. "Dog Bites Man: Who Wants to Watch Yet Another All-News Channel? Enough People to Make Rupert Murdoch Look Pretty Smart." *Forbes* 164(13):120–126.
- Katz, Elihu and Paul F. Lazarsfeld. 1955. *Personal influence: the part played by people in the flow of mass communication*. Glencoe, IL: Free Press.
- Keeter, Scott, Courtney Kennedy, Michael Dimock, Jonathan Best and Peyton Craighill. 2006. "Gauging the Impact of Growing Nonresponse on Estimates from a National RDD Telephone Survey." *Public Opinion Quarterly* 70(5):759–779.

- Keith, Bruce E., David B. Magleby, Candice J. Nelson, Elizabeth Orr, Mark C. Westlye and Raymond E. Wolfinger. 1992. *The Myth of the Independent Voter*. Berkeley: University of California Press.
- Kinder, Donald R. 1998. Opinion and Action in the Realm of Politics. In *The Handbook of Social Psychology*, ed. Daniel Todd Gilbert, Susan T. Fiske and Gardner Lindzey. 4th ed. New York: McGraw-Hill pp. 778–866.
- Kinder, Donald R. 2003. Communication and Politics in the Age of Information. In *Oxford Handbook of Political Psychology*, ed. David O. Sears, Leonie Huddy and Robert Jervis. New York: Oxford University Press pp. 357–393.
- King, Gary. 1997. *A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data*. Princeton: Princeton University Press.
- King, Gary, James Honacker, Anne Joseph and Kenneth Scheve. 2001. “Analyzing Incomplete Political Science Data: An Alternative Algorithm for Multiple Imputation.” *American Political Science Review* 95(1):49–69.
- King, Gary, Richard Nielsen, Carter Coberley, James E. Pope and Aaron Wells. 2011. “Comparative Effectiveness of Matching Methods for Causal Inference.” Harvard University, Typescript.
- Krosnick, Jon A. and Joanne M. Miller. 1997. The Anatomy of News Media Priming. In *Do the Media Govern? Politicians, Voters, and Reporters in America*, ed. Shanto Iyengar and Richard Reeves. Thousand Oaks, Ca.: Sage pp. 258–275.
- Ladd, Jonathan M. and Gabriel S. Lenz. 2009. “Exploiting a Rare Communication Shift to Document the Persuasive Power of the News Media.” *American Journal of Political Science* 53(2):394–410.
- Lazarsfeld, Paul F., Bernard Berelson and Hazel Gaudet. 1948. *The People’s Choice: How the Voter Makes Up His Mind in a Presidential Campaign*. New York: Columbia University Press.
- Lenz, Gabriel. 2009. “Learning and Opinion Change, Not Priming: Reconsidering the Evidence for the Priming Hypothesis.” *American Journal of Political Science* 53(4):821–37.
- Levendusky, Matthew. 2009. *The Partisan Sort: How Liberals Became Democrats and Conservatives Became Republicans*. Chicago, IL: University of Chicago Press.
- Lichter, S. Robert, Stanley Rothman and Linda S. Lichter. 1986. *The Media Elite: America’s New Powerbrokers*. Bethesda, MD: Adler and Adler.
- McCarty, Nolan, Keith T. Poole and Howard Rosenthal. 2006. *Polarized America: The Dance of Ideology and Unequal Riches*. Cambridge, MA: MIT Press.
- Meroney, John. 1997. “The Fox News Gamble.” *American Enterprise* 8(5):41.
- Mullainathan, Sendhil and Andrei Shleifer. 2005. “The Market for News.” *American Economic Review* 95(4):1031–1053.

- Nelson, Thomas E., Rosalee A. Clausen and Zoe M. Oxley. 1997. "Media Framing of a Civil Liberties Conflict and Its Effect on Tolerance." *American Political Science Review* 91(3):567–83.
- O’Keefe, Daniel J. 2002. *Persuasion*. 2nd ed. Thousand Oaks, CA: Sage Publications.
- Pew Center for the People and the Press. 2010. Americans Spending More Time Following the News. Ideological News Sources: Who Watches and Why. Technical report. <http://www.people-press.org/2010/09/12/americans-spending-more-time-following-the-news/>.
- Prior, Markus. 2007. *Post-Broadcast Democracy: How Media Choice Increases Inequality in Political Involvement and Polarizes Elections*. New York, NY: Cambridge University Press.
- Project for Excellence in Journalism. 2009. "The State of the News Media 2009: An Annual Report on American Journalism." <http://stateofthemedias.org/2009>.
- Project for Excellence in Journalism. 2011. "The State of the News Media 2011: An Annual Report on American Journalism." <http://stateofthemedias.org/2011>.
- Rahn, Wendy M. 1993. "The Role of Partisan Stereotypes in Information Processing about Political Candidates." *American Journal of Political Science* 37(2):472–496.
- Schudson, Michael. 1978. *Discovering the News: A Social History of American Newspapers*. New York: Basic Books, Inc.
- Sekhon, Jasjeet S. 2009. "Opiates for the Matches." *Annual Review of Political Science* 12:487–508.
- Smidt, Corwin. 2008. The Spinning Message: How News Media Coverage and Voter Persuasion Shape Campaign Agendas. PhD thesis Ohio State University.
- Stroud, Natalie Jomini. 2008. "Media Use and Political Predispositions: Revisiting the Concept of Selective Exposure." *Political Behavior* 30(3):341–366.
- Stroud, Natalie Jomini. 2010. "Polarization and Partisan Selective Exposure." *Journal of Communication* 60(3):556–576.
- Stroud, Natalie Jomini. 2011. *Niche News: The Politics of News Choice*. New York: Oxford University Press.
- Taber, Charles S. and Milton Lodge. 2006. "Motivated Skepticism in the Evaluation of Political Beliefs." *American Journal of Political Science* 50(3):755–769.
- White, Richard. 2011. *Railroaded: The Transcontinentals and the Making of Modern America*. New York, NY: WW Norton & Company.
- Zaller, John R. 1992. *The Nature and Origins of Mass Opinion*. New York, NY: Cambridge University Press.

- Zaller, John R. 1994. Elite Leadership of Mass Opinion: New Evidence from the Gulf War. In *Taken by Storm: The Media, Public Opinion, and U.S. Foreign Policy in the Gulf War*, ed. W. Lance Bennet and David L. Paletz. Chicago, IL: University of Chicago Press. pp. 186–209.
- Zaller, John R. 1996. The Myth of Massive Media Impact Revived. In *Political Persuasion and Attitude Change*, ed. Diana C. Mutz, Paul M. Sniderman and Richard A. Brody. Ann Arbor, MI: University of Michigan Press. pp. 17–78.

# Appendix

## Identifying Fox News Access Using ZIP Codes

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<sup>2</sup> 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.<sup>3</sup> 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.<sup>4</sup> 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.<sup>5</sup>

## Replicating DellaVigna and Kaplan

To examine potential differences between the towns in our survey-based sample and the original sample of towns used by DellaVigna and Kaplan, we re-estimated their model with county fixed effects using only the 4,186 towns in which we have at least one survey respondent. Doing so recovers an estimated Fox News effect of 0.53 percentage points (clustered SE=0.30), a point estimate similar to the comparable estimate reported by DellaVigna and Kaplan (0.69,

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<sup>2</sup>The centroid is the point which is the weighted average of the ZIP code’s x and y coordinates.

<sup>3</sup>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.

<sup>4</sup>For instance, Amherst, New York is listed in the Fox News data set, but the ZIP codes within Amherst are labeled as “Buffalo, New York.”

<sup>5</sup>This constitutes 79.3% of those in the full set of towns used in DellaVigna and Kaplan (2007).

SE=0.14). We also generated a re-weighted, aggregate-level data set, in which each town is weighted by the number of survey respondents in the NAES subset. Here again, the estimated effect (0.66 percentage points, SE=0.29) is again similar to that reported by DellaVigna and Kaplan. There is thus little reason to suspect that any differences between our survey-based results and their town-based results stem from geographic differences in the two samples

## Testing Model Dependence

As a robustness check, we first removed partisan identification from our core model, and recovered a highly similar estimated effect for Fox News access on Republicans and independents ( $\beta = 0.024, SE = 0.013$ ). We subsequently ran models without any individual-level covariates ( $\beta = 0.020, SE = 0.012$ ), without town-level measures related to the towns' cable systems ( $\beta = 0.020, SE = 0.009$ ), without any town-level covariates at all ( $\beta = 0.015, SE = 0.009$ ), with only state fixed effects ( $\beta = 0.015, SE = 0.009$ ), and with no covariates at all ( $\beta = 0.017, SE = 0.009$ ). Although we find the “all else equal” or ignorability assumption more credible in our fully specified model, the results are in no way sensitive to that preference.

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.

## Imputing Exposure

This section details the use of the 2000 Pew “Believability” survey to impute a measure of Fox News exposure to each NAES respondent. In that survey, 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. 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.<sup>6</sup> In these data, self-reported Fox News viewership is positively correlated with income and negatively correlated with education.<sup>7</sup> 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 as detailed in the manuscript.

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<sup>6</sup>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.

<sup>7</sup>Intriguingly, conditional on education and the other covariates, African Americans and Hispanics were more likely to indicate being Fox News viewers.

## Matching

For the 62 covariates used in our basic model, Table 1A 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 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.

Variable	Mean, Full with Fox	Mean, Full no Fox	Std. Diff. Full	Mean Matched with Fox	Mean Matched No Fox	Std. Diff. Matched
# Ch. D10	0.372	0.041	1.679	0.258	0.175	0.221
Pop. D10	0.450	0.171	0.743	0.407	0.229	0.422
# Ch. D9	0.184	0.058	0.535	0.155	0.252	0.223
# Ch. D8	0.164	0.052	0.506	0.216	0.162	0.149
# Ch. D2	0.004	0.155	0.418	0.005	0.006	0.010
# Ch. D6	0.058	0.177	0.313	0.078	0.136	0.171
% Urban '90	0.812	0.681	0.311	0.787	0.727	0.151
# Ch. D3	0.009	0.097	0.298	0.012	0.003	0.166
# Ch. D4	0.015	0.103	0.290	0.020	0.028	0.051
# Ch. D5	0.026	0.100	0.246	0.035	0.027	0.052
Lg. Pop. '90	7.656	7.261	0.231	7.447	7.397	0.032
College '90	0.219	0.195	0.207	0.214	0.207	0.054
Pop. D8	0.103	0.175	0.191	0.085	0.151	0.183
Married '90	0.572	0.589	0.190	0.576	0.584	0.090
No Cable '00	1.073	1.153	0.175	1.050	1.115	0.180
HS '90	0.313	0.328	0.167	0.321	0.324	0.039
ZIP % w/ BA	0.264	0.242	0.161	0.259	0.253	0.040
ZIP % Same House	0.556	0.570	0.157	0.564	0.578	0.164
Pop. D2	0.007	0.033	0.142	0.009	0.014	0.039
% Male '90	0.482	0.485	0.133	0.482	0.483	0.055
Pop. D3	0.025	0.052	0.121	0.030	0.018	0.099
Pop. D5	0.048	0.079	0.115	0.059	0.079	0.071
% Black '90	0.073	0.060	0.115	0.073	0.050	0.262
Pop. D4	0.045	0.071	0.103	0.056	0.050	0.032
Pop. D9	0.150	0.190	0.100	0.152	0.245	0.218
Pop. D7	0.085	0.116	0.096	0.101	0.103	0.008
# Ch. D7	0.167	0.136	0.090	0.219	0.202	0.042
% HS+ '90	0.250	0.244	0.088	0.245	0.239	0.106
Pop. '90	7.343	6.065	0.074	6.528	4.528	0.282
ZIP Density '00	0.001	0.001	0.073	0.001	0.001	0.052
Income '90	2.924	2.837	0.071	2.933	2.962	0.023
ZIP Income '00	47071.367	46098.792	0.061	46897.113	46804.676	0.006
Pop. D6	0.083	0.101	0.060	0.096	0.109	0.042

Variable	Mean, Full with Fox	Mean, Full no Fox	Std. Diff. Full	Mean Matched with Fox	Mean Matched No Fox	Std. Diff. Matched
% Emp. '90	0.603	0.608	0.059	0.599	0.613	0.175
Female	0.515	0.487	0.058	0.530	0.476	0.110
Born Again	0.345	0.369	0.050	0.353	0.330	0.049
Hispanic	0.054	0.045	0.044	0.048	0.049	0.004
% Voting GOP '90	0.410	0.405	0.039	0.409	0.408	0.011
Married	0.605	0.623	0.038	0.606	0.612	0.013
ZIP % Hisp. '00	0.074	0.070	0.033	0.063	0.065	0.011
Education	0.535	0.526	0.032	0.531	0.538	0.024
Party ID (1 =GOP)	0.782	0.777	0.032	0.782	0.782	0.002
% Hisp. '90	0.047	0.045	0.030	0.041	0.043	0.027
Income	0.533	0.525	0.030	0.525	0.537	0.046
Union	0.160	0.171	0.029	0.169	0.190	0.052
ZIP % Black '00	0.066	0.063	0.028	0.065	0.054	0.109
Black	0.019	0.022	0.024	0.018	0.018	0.000
Asian Am.	0.012	0.014	0.012	0.012	0.014	0.019
% Unemp. '90	0.061	0.061	0.008	0.062	0.059	0.107

Table 1: A. 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.