THE BALANCED US PRESS

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Abstract
We measure the relative ideological positions of newspapers, voters, interest groups, and political parties, using data on ballot propositions. We exploit the fact that newspapers, parties, and interest groups take positions on these propositions, and the fact that citizens ultimately vote on them. We find that, on average, newspapers in the United States are located almost exactly at the median voter in their states—that is, they are *balanced* around the median voter. Still, there is a significant amount of ideological heterogeneity across newspapers, which is smaller than the one found for interest groups. However, when we group propositions by issue area, we find a sizable amount of ideological *imbalance*: broadly speaking, newspapers are to the left of the state-level median voter on many social issues, and to the right on many economic issues. To complete the picture, we use two existing methods of measuring bias and show that the news and editorial sections of newspapers have almost identical partisan positions. (JEL: D72, L82)

1. Introduction

Are media in the United States biased? Recent surveys indicated that most Americans think they are. To take just one example, during the 2008 election only 10% of Republicans, 21% of independents, and 37% of Democrats said that most reporters tried to offer unbiased coverage of the campaign (Rasmussen Reports, July 21, 2008). Charges of a liberal media bias have become particularly common among conservatives and Republicans. A Google search on "US media" and "liberal bias" yields about 18,500 hits, while a search on "US media" and "conservative bias" yields only about 2,000 hits.

There is currently a cottage industry among social scientists attempting to estimate the size and direction of media bias, with the purpose of moving beyond anecdotal evidence and survey-based measures.[1] Broadly speaking, there are three approaches. One approach estimates the ideological position of media outlets by comparing patterns in the speech or written text of media outlets with patterns in the speech or text of politicians (e.g., Members of Congress). Media outlets that talk like conservatives or Republicans can be classified as conservative or Republican-leaning, while those that talk like liberals or Democrats can be classified as liberal, or Democratic leaning. Two prominent papers that develop and use this approach are Groseclose and Milyo (2005) and Gentzkow and Shapiro (2010). A second approach to measuring media bias is to study variation in the intensity with which media outlets cover different topics, or by studying variation in the tone of this coverage. For example, if a media outlet covers political scandals involving Republican politicians much more heavily or negatively than it covers scandals involving Democratic politicians, then it can be classified as Democratic-leaning or liberal. Papers that develop and use this approach include Larcinese, Puglisi, and Snyder (2011), Puglisi and Snyder (2011), and Puglisi (2011).[2] The third approach measures media bias by examining patterns in newspaper endorsements. For example, newspapers that disproportionately endorse Democratic candidates can be classified as Democratic-leaning or liberal, while those that disproportionately endorse Republicans can be classified as Republican-leaning or conservative. Ansolabehere, Lessem, and Snyder (2006) and Ho and Quinn (2008) are two examples that adopt this approach.

Most of these papers provide novel and fairly convincing methods for locating medial outlets relative to one another and relative to politicians. However, none of them provides a compelling way to locate media outlets relative to the public at large. Our paper tries to fill this gap. We devise a new and relatively simple method for placing newspapers, interest groups, political parties, and voters on the same scale. The method uses data on ballot propositions at the state level. We exploit the fact that newspapers, parties, and interest groups make endorsements for or against these propositions, and citizens of each state ultimately vote on them. When an endorser disagrees with a majority of the voters on a proposition, the endorser has clearly taken a position that is to the left or right of the median voter in that state. We average over these cases to create an index of conservatism for each newspaper, interest group, and party.

Getting straight to the point, our findings are as follows. First, we find that newspapers are *ideologically balanced* around the median voters in their states. That is, taken as a whole, newspapers are not significantly more liberal or conservative than voters. Second, we find that, although newspapers are centrist on average, there is a significant amount of ideological heterogeneity. Some newspapers are statistically indistinguishable from the median voter, but some are significantly to the left or to the

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1. See Prat and Stromberg (2011) for an excellent review of this literature.
2. See also Adkins Covert and Wasburn (2007), and Peake (2007).

right. Third, when we disaggregate propositions by issue area, we find a significant amount of imbalance on some issues. Broadly speaking, newspapers are to the left of the median voter on many social issues such as gay marriage and affirmative action, and to the right on many economic issues, such as the minimum wage and labor and environmental regulations. Fourth, we find that newspapers are moderate relative to interest groups and political parties. That is, while newspapers exhibit a nonnegligible amount of dispersion around the median, they tend to be much closer to the median voter than most interest groups.[3]

The previous results apply to the editorial pages of newspapers, where the endorsements appear. However, partisan bias in the news section might be more of a concern, since editorials are explicitly devoted to expressing opinions, while news articles should report objectively about real-world events. We use two existing methods for measuring bias to show that, on average, the news and editorial sections of newspapers have almost identical ideological/partisan positions. From this it follows that, on average, both the news sections and the editorial sections of the newspapers are balanced around the state median voter. We also show that there is a positive and fairly strong correlation between each of those two existing measures of bias and the endorsement-based measure we propose here.

Our method relies on two key assumptions. First, we assume that the persuasion rate of each newspaper endorsement is small—that is, endorsements rarely change the position taken by the median voter on propositions. As discussed in more detail in what follows, we explore variants of our basic measure that rely less heavily on this assumption.[4] Second, we assume that newspaper editorial staffs are relatively knowledgeable, and when making endorsements they sincerely report their positions.[5]

Our results also come with two caveats. First, as mentioned previously, our method places newspapers (and interest groups) relative to the median voter *in each state*. Without additional assumptions we cannot say much about newspapers' positions relative to the median voter nationwide. Second, we cannot estimate newspapers' positions relative to voters in states that have few statewide ballot propositions, or states in which newspapers do not regularly endorse on these propositions.

How do our results compare to the previous literature? Regarding the issue of media bias relative to voters, at least three papers claim to find evidence of an overall liberal bias in the US media (Lowry and Shidler 1995; Hewitt 1996; Groseclose and Milyo

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3. This is similar to results in Ho and Quinn (2008).

4. One of these variants is based only on lopsided votes, for which newspaper endorsements are unlikely to change the outcome. Another variant focuses instead on close propositions, but includes *all* endorsements, whether or not the newspapers disagree with the majority of voters, so endorsement influence on the identity of the median voter would not affect that score.

5. Each newspaper's endorsements are made by the members of its editorial board, after extensive research and interviews with key political actors. In the vast majority of cases where we have found articles describing the process, the endorsement decisions are made by a vote among the editorial board members. Also, in many cases, when the board is relatively evenly divided the newspaper does not make an endorsement, but notes that there was too little consensus.

2005), while two other papers claim that there is little or no bias (the meta-analysis by D'Alessio and Allen 2000, and Gentzkow and Shapiro 2010). Our finding of balance is clearly more consistent with this second set of papers. Focusing on the two most recent papers, our results are quite consistent with Gentzkow and Shapiro (2010), who conclude that the partisan slant of newspapers follows the ideological leaning of consumers, while they contrast sharply with the finding emphasized most strongly by Groseclose and Milyo (2005)—namely, that most media outlets in the United States (except Fox News Special Report and the *Washington Times*) are significantly to the left of voters.[6] However, our finding that newspapers are relatively centrist compared to political parties and interest groups is similar to another finding in Groseclose and Milyo—namely, that almost all media outlets (except the *Wall Street Journal*) are located between the median Democrat and the median Republican Congressmen.[7]

We should point out that Groseclose and Milyo (2005), Gentzkow and Shapiro (2010), and this paper focus on different levels of geography. Groseclose and Milyo focus on a nationwide median voter. Also, since they cannot directly compare media outlets with voters, they must assume that the mean member of the US House of Representatives occupies the same policy position as the median US voter. Gentzkow and Shapiro study the partisan position of newspapers relative to voters at the zip-code level. They use campaign donations to politicians from each party to measure the ideology of voters at this fine-grained level. As noted previously, we examine an intermediate case—namely, the median voter at the state level.

Why should we care about media bias? Numerous theoretical papers show how media bias can affect voting and other decisions, including Gentzkow and Shapiro (2006), Bernhardt, Krasa, and Polborn (2008), and Gehlbach and Sonin (2011). Empirically, Druckman and Parkin (2005), DellaVigna and Kaplan (2007), Gerber, Karlan, and Bergen (2009), Knight and Chiang (2011), and others find significant effects of media on voting patterns and public opinion. Ho et al. (2011) find evidence that perceptions of media bias affect political participation.[8] Elite behavior may also be affected—for example, politicians may skew their decisions or rhetoric if they believe the media are biased.

Somewhat more subtly, voters' beliefs about the degree and direction of media bias can matter. For example, Bayesian updating typically implies that "surprising" news has more impact on posterior probabilities than "expected" news. Knight and Chiang (2011) find strong evidence for this in their work on endorsements. An

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6.   Gasper (2011) explores the robustness of the Groseclose and Milyo findings. He argues that their conclusions are robust to different measures of the ideological positions of senators and congressmen, but not to the time window under consideration, since the average ideological position of the media shifts to the right with more recent time windows.

7.   One possible reason that our results are more similar to the results in Gentzkow and Shapiro (2010) than to those in Groseclose and Milyo (2005) is that—like Gentzkow and Shapiro—we focus on a large sample of *newspapers*, while Groseclose and Milyo focus on a smaller sample of major newspapers and TV news outlets.

8.   See DellaVigna and Gentzkow (2010) for a survey of the literature on media persuasion.

implication is that if most voters think media is biased to left, then endorsements of right-leaning candidates or ballot propositions will have more impact, on average, than endorsements of left-leaning candidates or propositions. This would not be the case if voters believed that the media are relatively balanced.

2. Method and Measures

2.1. General Method

As previously noted, we exploit the fact that newspapers and interest groups routinely make endorsements on ballot propositions, and voters subsequently vote on these same propositions. One straightforward—and essentially nonparametric—way to estimate a newspaper's bias relative to voters is as follows.

Consider a proposition with a "liberal" alternative L and a "conservative" alternative R. Following convention we associate liberal with left and conservative with right, so $L < R$.

There are three cases, shown in Figure 1. In case (i), the median ideal point is at the "cut-point" between the L and R alternatives, so the L and R alternatives both receive 50% of the vote. Any newspaper or group that endorses the R alternative reveals itself to be more conservative than the median voter on the issue, while any newspaper or group that endorses the L alternative reveals itself to be more liberal than the median voter. We can use all endorsements in this case. In practice, we assume that case (i) covers all ballot measures where the vote percentage for each alternative lies between 45% and 55% ($\pm 5\%$ margin).

In case (ii) the median ideal point is noticeably to the left of the cut-point between the L and R alternatives, so the L alternative receives noticeably more than 50% of the vote. Any newspaper that endorses the R alternative reveals itself to be more conservative than the median voter on the issue. However, a newspaper that endorses the L alternative might be more conservative or more liberal than the median voter— newspapers with ideal points between M and $(L+R)/2$ are more conservative than the median voter but still endorse L. In other words, in case (ii) an endorsement for R by a given newspaper is informative about its (relatively) conservative position, since the median voter and a sizable subset of citizens to the right of the median vote for the L, but the newspaper endorses the opposite position. However, an endorsement for L is not so informative, since many citizens both to the left and to right of the median voter take the same decision.

Case (iii) presents the opposite situation to case (ii). In this case the median ideal point is noticeably to the right of the cut-point between the L and R alternatives, so the R alternative receives noticeably more than 50% of the vote. Any newspaper that endorses the L alternative reveals itself to be more liberal than the median voter on the issue. However, a newspaper that endorses the R alternative might be more liberal or more conservative than the median voter—newspapers with ideal points
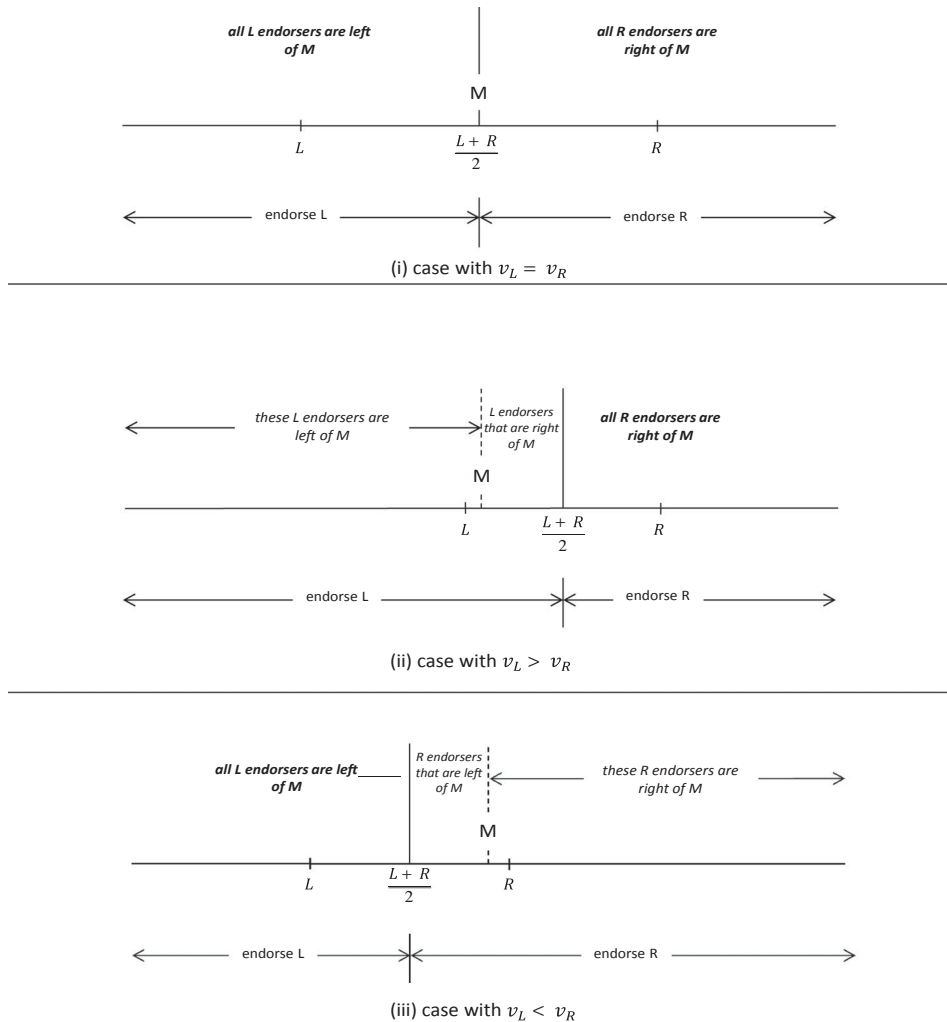
FIGURE 1. Theory. The figure illustrates the set of endorsements we can use in estimating the ideological position of newspapers and interest groups, depending on the relative size of citizens voting in favor or against a given proposition. In case (i) voters are equally split, so all endorsements are informative about the position of endorsers relative to the median voter. In case (ii) a large majority of voters supports the L alternative on a given proposition, so only R endorsements are informative about the position of endorsers relative to the median voter. In case (iii) a large majority of voters support the R alternative, so only L endorsements are informative.

between M and $(L+R)/2$ are more liberal than the median voter but still endorse R. In Figure 1 the especially informative endorsements are in bold italic font, and the relatively uninformative endorsements are in regular italic font.

To estimate the bias of a given newspaper, we simply average across all ballot propositions on which the newspaper made an endorsement. We can use all three

cases, case (i) alone, or cases (ii) and (iii). We can also weight by newspaper size, or other variables, if desired.

Fortunately, most newspapers make endorsements on all or nearly all propositions, so sample-selection bias is not a significant problem. In addition, we can deal with the possibility that endorsements affect voter behavior by excluding the propositions that nearly pass or nearly fail—namely, case (i).

2.2. Specific Measures

We now provide more precise descriptions of the specific measures we use in what follows. First, we need a bit of notation. Let S be the set of all states. For each state s, let N_s be the set of newspapers in s. Let N be the set of all newspapers in all states.

For each newspaper n, let P_n be the set of all propositions on which n endorsed. Let C be the set of propositions that pass or fail by a "close" margin, and let L be the complement of C. In the analysis that follows we report results using a 55% threshold for defining a close outcome; the results are qualitatively similar for other thresholds.

Let $c_{np} = 1$ if newspaper n endorsed the conservative position on proposition p and $c_{np} = -1$ if newspaper n endorsed the liberal position. Similarly, let $v_p = 1$ if voters adopted the conservative position on proposition p and $v_p = -1$ if voters adopted the liberal position.

We can then write the main quantity of interest as follows:

$$Right\ of\ Median = \frac{\sum_{s \in S} \sum_{n \in N_s} \sum_{p \in P_n} (c_{np} - v_p)}{2 \sum_{s \in S} \sum_{n \in N_s} \#\{p \in P_n | c_{np} \neq v_p\}}.$$

Notice that *Right of Median* $= +1$ if newspaper endorsements are "always conservative" (when they disagree with the majority of voters), *Right of Median* $= -1$ if the newspaper endorsements in state s are "always liberal", and *Right of Median* $= 0$ if newspaper endorsements, relative to the median voters in their respective states, are "neutral" on average. This measure uses all endorsements by all newspapers.

We also study a modification of this variable after omitting the propositions that pass or fail by close margins, which corresponds to cases (ii) and (iii) in the previous section:

$$Right\ of\ Median = \frac{\sum_{s \in S} \sum_{n \in N_s} \sum_{p \in P_n \cap L} (c_{np} - v_p)}{2 \sum_{s \in S} \sum_{n \in N_s} \#\{p \in P_n \cap L | c_{np} \neq v_p\}}.$$

Finally, we also examine the following measure for the propositions that pass or fail by close margins, which corresponds to case (i) in the previous section:

$$Conservative\ Position = \frac{\sum_{s \in S} \sum_{n \in N_s} \sum_{p \in P_n \cap C} c_{np}}{\sum_{s \in S} \sum_{n \in N_s} \#(P_n \cap C)}.$$

Again, *Conservative Position* $= +1$ if newspaper endorsements on close propositions are "always conservative", *Conservative Position* $= -1$ if newspaper endorsements on close propositions are "always liberal", and *Conservative Position* $= 0$ if newspaper endorsements on close propositions are, relative to the median voters in their respective states, "neutral".

We can construct analogous measures for each newspaper, and for each state, simply by summing only over the appropriate subsets of propositions. For example, for each state s,

$$Right\ of\ Median_s = \frac{\sum_{n \in N_s} \sum_{p \in P_n} (c_{np} - v_p)}{2 \sum_{n \in N_s} \#\{p \in P_n | c_{np} \neq v_p\}}.$$

For each newspaper n,

$$Right\ of\ Median_n = \frac{\sum_{p \in P_n} (c_{np} - v_p)}{2(\#\{p \in P_n | c_{np} \neq v_p\})}.$$

We define the variables *Conservative Position*$_s$ and *Conservative Position*$_n$ analogously, averaging over close propositions.

One intuitive way to interpret *Right of Median*$_n$ is as follows: it is a weighted average of $+1$ and -1, where the weights are given by the relative frequency with which the endorser takes the conservative and liberal positions respectively (conditional on disagreeing with the median voter on those propositions). Thus, for example, *Right of Median*$_n = Y > 0$ implies that newspaper n endorses the conservative position Y% more often than the liberal position. Similarly, *Right of Median*$_n = Y < 0$ implies that newspaper n endorses the liberal position Y% more often than the conservative position.[9]

2.3. What If Endorsements Influence Voters?

We now consider the possible bias in the case in which the endorsements themselves persuade voters. We argue that the bias is likely to be small for three reasons. First, most previous studies that employ compelling research designs find that newspaper endorsements have only a small effect on voters' decisions.[10] Second, since even the largest newspaper in a state is read by only a minority of the state's households, in order for newspaper endorsements to influence the aggregate state outcome on a proposition it would have to be the case that many newspapers in the state endorse the same

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9.   We thank an anonymous referee for suggesting this intuitive interpretation of our measure.

10.   The existing literature deals with the effects of newspapers endorsing specific *candidates*—see Knight and Chiang (2011) for additional references. We are not aware of studies that estimate the persuasive effects of endorsements on ballot proposition.

alternative on the proposition—or, more accurately, that a large fraction of voters in the state read newspapers endorsing the same alternative.[11]

Third, if newspaper endorsements actually do have a significant impact on voting outcomes, then our main estimates are most likely to be biased toward finding that newspapers are even more extreme than they really are, in the direction of their true bias. Thus, we will be even less likely to place newspapers on the "wrong" side of voters relative to their true positions, compared to a world where endorsements do not influence voting outcomes.

Why? Because we only include cases where newspapers endorsed the position that a majority of voters did *not* support. We drop all propositions on which newspapers are aligned with the majority of voters. We therefore need only one assumption to sign the bias: Assume that "surprising" newspaper endorsements are more likely to influence voters than "expected" newspaper endorsements. That is, assume that a liberal endorsement by a conservative newspaper is more influential than a conservative endorsement by that newspaper, and a conservative endorsement by a liberal newspaper is more influential than a liberal endorsement by that newspaper. This seems quite natural—it is consistent with Bayesian updating, and Knight and Chiang (2011) find strong evidence for it in their study of presidential endorsements. We illustrate this formally in the Online Appendix.[12]

3. Data

We have collected endorsement data for all states over the period 1996–2012. In Section 4.1, we use all of the available data. We have enough data to conduct state-by-state analyses for Arizona, California, Colorado, Florida, Oregon, and Washington. We focus on these states in Section 4.2. The ballot propositions cover a wide range of public policy issues: overall state taxes and spending, local taxes and spending, education policy, health policy, energy policy, labor policy, environmental policy, criminal justice, drugs, abortion, gay marriage, treatment of animals, gun control, campaign finance, election rules, and more.

We have collected endorsements for all newspapers with circulation over 20,000 plus a sample of smaller newspapers. We have also collected endorsements by state and county political party organizations, and by a large sample of interest groups. The sample of interest groups includes the major business, labor, environmental, public interest, and taxpayer groups, as well as some prominent blogs.

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11.   Of course, if newspapers happen to coordinate in their endorsement behavior we could expect some persuasive effect in the aggregate. However, as discussed in Section 4.2, there is sizable ideological variation across newspapers in a given state.

12.   Even if some "unsurprising" endorsements are also persuasive, there is no particular reason to believe that conservative newspapers are more persuasive than liberal ones, or vice versa, so that persuasion effects in opposite directions would offset each other in equilibrium. We thank an anonymous referee for suggesting this additional argument.

We collected a total of 30,525 endorsements. We drop states with fewer than five ballot propositions, and newspapers that made fewer than five endorsements, leaving us with data for 45 states.[13] Most of these endorsements are not used in constructing the *Right of Median* measures, because in most instances the newspaper endorsement agrees with the position taken by a majority of voters. That is, most endorsements fall into cases (ii) and (iii) of Section 2.1. This is true for almost 66% of all endorsements. Recall also that we only use close propositions—that is, those for which the winning side received fewer than 55% of the votes—when constructing the *Conservative Position* measures. Only about 23% of propositions are close, accounting for just over 23% of endorsements.[14]

We employ two methods to infer whether the "Yes" or "No" alternative on a given proposition represents the conservative position. The most straightforward is to use the endorsements of political parties. If the Republican Party supports a proposition and the Democratic Party opposes it, then the "Yes" alternative is the conservative position, and when the opposite holds the "No" alternative is the conservative position. We call this the "party-based" classification.[15]

Unfortunately, in many states the parties rarely make clear recommendations on ballot propositions. An alternative is to use the endorsements of interest groups that are clearly identified as liberal or conservative. We classify labor unions, environmental groups, animal-rights groups, and self-identified progressive groups and blogs as liberal, and we classify business associations, taxpayer groups, and self-identified conservative groups and blogs as conservative. If at least 60% of the conservative groups support a proposition and at least 60% of the liberal groups oppose it, then the "Yes" alternative is the conservative position, and when the opposite holds the "No" alternative is the conservative position. We classify all propositions for which we have the endorsements of at least two liberal groups and at least two conservative groups. We call this the "group-based" classification.

Table 1 shows a few summary statistics by state: the total number of propositions, the total number of propositions used in our overall analysis—that is, the number we can classify using the group-based definition—and the total number of newspapers making at least five endorsements. Note that some states have a large total number of propositions but very few are used. Also, there are eleven states in which no endorsements are used. These are states in which few interest groups appear to make endorsements on a routine basis, so we are unable to classify the left–right orientation of most (or all) propositions. In some of these states (e.g., Georgia, Louisiana, Texas) most propositions are uncontroversial or deal with local issues. In other states (e.g., Indiana, Iowa, Kansas, Minnesota, New Hampshire, New York, North Carolina, Pennsylvania, Tennessee, West Virginia) we suspect that groups do not endorse because ballot propositions are rare and they are not "in the business" of taking positions. In Rhode

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13.   The states excluded from the analysis are Connecticut, Delaware, Illinois, Mississippi, and Vermont.

14.   In Online Appendix Table B.1 we summarize the pattern of cases for California and other states.

15.   In some cases the state party does not take a position but various county parties do. In these cases we use the recommendation made by a majority of the county parties.

TABLE 1. Summary statistics.

| State | Propositions | | | State | Propositions | | |
	Total	Used	Newsp		Total	Used	Newsp
Alabama	74	1	13	Nevada	66	14	3
Alaska	47	8	3	New Hampshire	11	0	2
Arizona	104	45	9	New Jersey	29	0	12
Arkansas	40	7	3	New Mexico	82	0	6
California	188	119	61	New York	11	0	12
Colorado	101	41	22	North Carolina	14	1	10
Florida	70	33	33	North Dakota	52	4	6
Georgia	61	2	8	Ohio	35	16	17
Hawaii	28	1	3	Oklahoma	66	2	4
Idaho	32	8	6	Oregon	160	48	14
Indiana	10	0	10	Pennsylvania	10	0	16
Iowa	9	2	8	Rhode Island	58	0	1
Kansas	7	0	6	South Carolina	36	2	8
Kentucky	9	1	7	South Dakota	57	11	5
Louisiana	134	5	8	Tennessee	7	0	11
Maine	106	5	2	Texas	119	18	25
Maryland	29	0	12	Utah	40	2	5
Massachusetts	28	10	14	Virginia	26	3	12
Michigan	34	7	20	Washington	90	45	18
Minnesota	9	1	5	West Virginia	11	0	8
Missouri	55	15	11	Wisconsin	8	2	13
Montana	49	6	4	Wyoming	30	1	2
Nebraska	55	5	3				

Notes: For each state the table displays the total number of statewide ballot propositions, the number of propositions used in the analyses that follow (i.e., those classified using the group-based definition), and the total number of newspapers making at least five endorsements.

Island, more than 80% of the propositions are routine bond measures, often for small amounts. The same is true for about 50% of the propositions in Maine. In New Mexico, more than 40% of the propositions are bond measures.[16]

4. Basic Patterns

4.1. Average Bias

We begin with an overall assessment of newspapers in all states in our sample. We also analyze California separately, since it accounts for nearly half of the endorsements.

Table 2 presents our main estimates of the average bias among newspapers. The first column shows results for all states pooled, the second is for California

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16. Table B.2 of the Online Appendix provides more details about the number of propositions that are dropped in each state because of the presence of too few endorsements or an overall agreement by interest groups on the position to endorse.

TABLE 2. Average bias of newspapers.

Measure	All states	California	Non-California
All propositions			
Right of median (party-based)		0.09 (0.14) [1,369]	
Right of median (group-based)	0.01 (0.07) [3,516]	−0.01 (0.13) [1766]	0.03 (0.07) [1750]
Lopsided propositions (5%)			
Right of median (party-based)		0.29 (0.16) [813]	
Right of median (group-based)	0.03 (0.08) [2,399]	0.10 (0.14) [1166]	−0.03 (0.09) [1,233]
Close propositions (5%)			
Conserv. posit. (party-based)		−0.06 (0.12) [1,381]	
Conserv. posit. (group-based)	−0.06 (0.08) [2,598]	−0.05 (0.12) [1,482]	−0.07 (0.09) [1,116]

Notes: Each row presents the figures for a different measure of bias or a different sample. Each cell contains three numbers: the measure itself, the standard error of the measure (in parentheses), and the number of endorsements used to compute the measure (in brackets). The standard errors are clustered both by newspaper and proposition. *Right of Median* and *Conservative Position* have a range of −1 to 1 (100% liberal to 100% conservative).

alone, and the third pools all states excluding California. Each row presents the figures for a different measure of bias or a different sample. Each cell contains three numbers: the measure itself, the standard error of the measure (in parentheses), and the number of observations—that is, endorsements—used to compute the measure (in parentheses).

The standard errors are clustered both by newspaper and ballot proposition (see Cameron, Gelbach, and Miller 2011). We compute the standard errors this way because there are good reasons to believe that the error terms across endorsements are correlated both within newspapers and also within propositions. For example, the errors might be correlated within propositions if some propositions are disproportionately favored by rural or urban citizens—including rural or urban newspaper editors—or if some propositions are disproportionately favored by citizens and editors in certain regions of a state. Similarly, the errors might be correlated within newspapers if the newspapers do not want to seem to be too biased against some types of citizens—for example, they might strive to produce a relatively balanced distribution of endorsements rather than one that is too heavily skewed in favor of rural or urban citizens.

Examining the table we see immediately that none of the point estimates are statistically different from zero at the 0.05 level; in fact, none of the point estimates are significant even at the 0.20 level. The second row is the most comprehensive, since it employs the group-based classification of propositions and it uses *all* endorsements for which *Right of Median* is not missing. According to this row, the average ideological orientation of newspaper endorsements relative to voters is 0.02—essentially zero. Intuitively, a point estimate of 0.02 implies that on average newspapers agree with the conservative position 2% more often than with the liberal position (although we cannot reject the null hypothesis that this measure of bias equals zero). Thus, on average newspapers in the United States are very close to the median voters in their

states. There is no evidence of a large and systematic liberal or conservative bias. If anything, newspapers tend to be very slightly on the conservative side of the median.[17]

In California we can use both the party-based and group-based classifications of propositions. Using the party-based classification, newspapers in California appear to be somewhat conservative relative to the state median voter (top row of Table 2). However, the estimate is not statistically different from zero.

In the second panel of Table 2 we keep only propositions that won or lost by a lopsided margin (more than ±5 percentage points). In these cases it is very unlikely that any individual endorsement—or even a coordinated collection of endorsements—would change the outcome of the vote. Again, none of the estimates is statistically significant, and newspaper endorsement positions are, on average, very close to the median voters in their states. The largest point estimate (0.29 in California, when using the party-based version of our measure) would imply that on lopsided propositions newspapers side with the conservative position 29% more often than with the liberal position, but again, this difference is not statistically significant at ordinary confidence levels.

Finally, in the bottom panel of the table we focus on propositions that won or lost by a small margin (less than ±5 percentage points). In these rows the bias measure is *Conservative Position*. Recall that this is computed using *all* endorsements, even those that are on the same side of the median voter. In these cases newspapers appear to be slightly to the left of the median voter, although again the point estimates are not significantly different from zero.

In Table 2 all newspapers are treated equally. We also ran analyses on subsets of higher-circulation newspapers. The results are similar to those in Table 2. For example, if we limit attention to newspapers with circulation greater than 50,000, then the average group-based *Right of Median* score is 0.00 for all states, 0.01 for California, and −0.01 for other states.[18]

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17. Throughout the discussion of our results, we use the term "the median voter". We do not literally mean a single individual who is the median voter on all propositions. Rather, we are referring to a hypothetical "average median voter"—a composite of actual median voters that probably vary from issue to issue and election to election—to whom endorsers are compared. We revisit this in Section 5, when we examine variation in endorsements across issues.

18. Our estimates might be biased if there is a significant correlation between the turnout of the underlying propositions and the frequency with which newspapers endorse the conservative or the liberal position. We examined all general election ballot propositions in California, comparing turnout on the propositions to the total votes cast for the two major-party candidates for President (in Presidential election years) and Governor (in midterm years). Specifically, for each proposition, we examined *Relative Turnout* = (turnout on the proposition)/(turnout for president or governor). The average of *Relative Turnout* is 0.993, the median is 0.994, and the standard deviation is 0.075 (*Relative Turnout* is sometimes over 100%). We find that there is no significant differences between the propositions with relatively low *Relative Turnout* (below 0.99) and those with relatively high *Relative Turnout* (above 0.99). For example, the average *Right of Median* scores for newspapers were similar for the two sets of propositions, and not statistically significant. The overall correlation between *Relative Turnout* and *Right of Median* is 0.16. Similarly, there is no significant correlation between the *Relative Turnout* on a proposition and newspapers' overall propensity to endorse the conservative position on that proposition. The overall correlation between *Relative Turnout* and *Conservative Position* is −0.09. We also find no significant differences in the *Right of Median* scores when comparing propositions with *absolute* turnout above and below the median.

4.2. Newspapers versus Groups

In this section we compare the positions of newspapers and interest groups. Since the analyses are now at the level of the individual newspaper or group, we focus on newspapers and groups with group-based *Right of Median* scores calculated using at least eight propositions (so the individual scores are relatively accurate), and on states with a relatively large number of newspapers and groups.

In Figure 2 we show the positions of all interest groups and newspapers in California. In Figure 3 we do the same for all interest groups and all newspapers with circulation over 50,000 in six states: Arizona, California, Colorado, Florida, Oregon, and Washington. In both figures the endorsers are divided into seven groups based on their group-based *Right of Median* scores. The figure is divided into two panels, with interest groups and parties on top, and newspapers on the bottom.[19] Endorsers whose positions are significantly different from zero (at the 0.05 level) are starred; in the bottom panels, newspapers with circulation larger than 100,000 are in black, while all other newspapers are in gray. We present the estimated scores for each interest group, party, and newspaper in the Online Appendix, Tables C.1–C.6.

Inspection of Figure 2 immediately reveals that newspapers in California are much more moderate than interest groups (and parties).[20] Groups tend to be located in the most extreme bins, while newspapers are concentrated in the intermediate bins. Even newspapers, however, exhibit some dispersion. The total number of moderately liberal and moderately conservative is clearly larger than the number of newspapers in the central bin.

The estimated *Right of Median* scores for 31 newspapers are statistically significant at the 0.05 level, while for 26 the estimates are statistically insignificant. For groups the figures are 39 and 2, respectively—almost all groups exhibit a statistically significant degree of bias.

The same overall patterns emerge from Figure 3. Interest groups are more extreme than newspapers, and most of them display a statistically significant degree of bias. Again, moderately liberal and moderately conservative newspapers are more numerous than exactly "centrist" newspapers. There are 0 newspapers and 68 interest groups with statistically significant *Right of Median* scores respectively, compared with 0 newspapers and only 3 interest groups with statistically insignificant scores.

Tables C.1–C.6 in the Online Appendix all show patterns similar to Figures 2 and 3 (i.e., newspapers are concentrated in the middle of the table, while groups are mainly at the top and at the bottom). Table C.1 shows that, according to the group-based *Right of Median* scores, the press in California is fairly balanced, with

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19.   In Figure 2 we also include "specialty" newspapers, defined above, in the top panel. We do not include these in Figure 3.

20.   This finding is broadly consistent with several political economy models, according to which the media position in equilibrium is between that of the audience/readership and that of the relevant pressure group(s) (see Gal-Or, Geylani, and Yildirim 2012; Gentzkow and Shapiro 2006; Ellman and Germano 2009; Petrova 2012; Sobbrio 2011). We thank an anonymous referee for remarking on this.

Interest groups and parties (top panel)

Monterey Co. Weekly*
SF Bay Guardian*
CA Democ Party*
LA Democ Party*
Alameda Labor Council*
Ballot Init Strategy Ctr*
CA AFSCME*
CA Church Impact*
CA Fed of Teachers*
CA Green Party*
CA Labor Fed*
CA Leag of Conserv Voters*
CA Leag of Women Voters*
CA Nurses Assn*
CA SEIU*
CA Sierra Club*
CA Teachers Assn*
Calitics*

Courage Campaign*   Metro Silicon Valley*
Friends Comm on Legislat* CA Assn of Counties*
Natl Org for Women* CA Peace & Freedom Pty*

Daily Californian*
Bay Area Council
League of CA Cities

CA Repub Assembly*
CA Repub Party*
Alameda Co. Taxpay Assn*
CA Farm Bureau*
CA Manuf & Technology Assn*
CA Taxpay Assn*
CA Ch of Commerce*   Contra Costa Taxpay Assn*
CA Libertarian Party* Howard Jarvis Taxp Assn*
Citiz for Better Amer* Natl Fed Indep Business*
Orange Co. Taxp Assn* CA Natl Taxpay Union*

Newspapers (bottom panel)

Fresno Bee*
Lompoc Record*
Merced Sun-Star*
Monterey Co. Herald*
Pacific Sun*
SF Chronicle*
S. Jose Mercury News*
S. Cruz Sentinel*

Eureka Times-Standard*
Fremont-Newark Argus
La Prensa S. Diego
LA Times*
Modesto Bee*
Sacramento Bee*
Salinas Californian*
SF Examiner
S. Rosa Press Democ*
Sonoma Index-Trib*
Vacaville Reporter
Vallejo Times-Herald*
Ventura Co. Star*
Woodland Daily Democ*

Bakersfield Californian
Contra Costa Times
Gilroy Dispatch
Hayward Daily Rev
Oakland Trib
Palm Springs Desert Sun
Pasadena Star-News
Tri-Valley Herald
S. Gabriel Valley Trib
S. Mateo Co. Times
S. Barbara News Press
Stockton Record
Visalia Times-Delta
Whittier Daily News

Alameda Times-Star
Chico Enterprise Record
Hanford Sentinel*
Inland Valley Daily Bulletin
Marysville Appeal-Democ*
North Co. Times
Paradise Post*
Red Bluff Daily News
Redding Record Srchl
Riverside Press-Enterp
S. Bernardino Co. Sun
S. Diego Union-Trib*
Torrance Daily Breeze*

Lodi News-Sentinel*
Long Beach Press-Tel*
LA Daily News*
Orange Co. Register*
S. Ramon Valley Times*
Victorville Daily Press*

Mountain Democ*
S. Clarita Signal*

-.9   -.6   -.3   0   .3   .6   .9
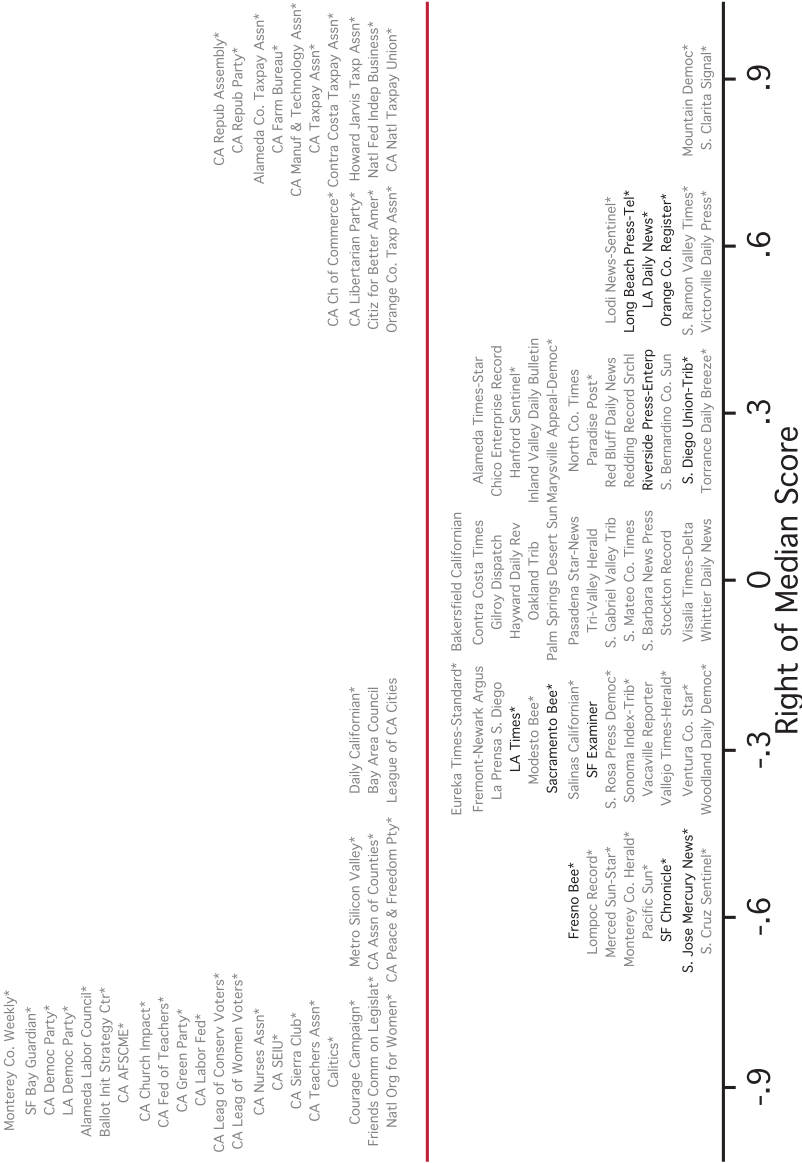
Right of Median Score

FIGURE 2. Newspapers, interest groups, and voters in California. The figure displays the political position of interest groups and newspapers in California. The endorsers are divided into seven groups based on their Group-Based *Right of Median* scores. The figure is split into two panels, with interest groups and parties on top, and newspapers on the bottom. Endorsers whose positions are significantly different from zero (at the 0.05 level) are starred. In the bottom panel, newspapers with circulation larger than 100,000 are in black, while smaller newspapers are in gray.

Pima Co. Democ Party*
AZ Green Party*
CA Democ Party*
LA Democ Party*
Ballot Init Strategy Ctr*
CA AFSCME*
CA Church Impact*
CA Fed of Teachers*
CA Green Party*
CA Labor Fed*
CA Leag of Conserv Voters*
CA Leag of Women Voters*
CA Nurses Assn*
CA SEIU*
CA Sierra Club*
CA Teachers Assn*
Courage Campaign*
Friends Comm on Legislat*
Natl Org for Women*
FL Consumer Action Network*
OR Democ Party*
Ecumenical Ministries of OR*
OR AFL–CIO*
OR Educ Assn*
OR Fed of Teachers*
OR SEIU*
OR Green Party*
King Co. Democ Party*
Northwest Prog Inst Advoc*
WA Educ Assn*
WA Leag of Women Voters*
WA State Labor Council* CA Peace & Freedom Pty* FL Leag of Women Vot.

League of CA Cities
AZ AFL–CIO* FL Leag of Women Vot.

AZ Ch of Commerce & Ind*
AZ Farm Bureau*
AZ Conservative*
CA Repub Assembly*
CA Repub Party*
Alameda Co. Taxpay Assn*
CA Farm Bureau*
CA Manuf & Technology Assn*
CA Taxpay Assn*
Contra Costa Taxpay Assn*
Howard Jarvis Taxp Assn*
Natl Fed Indep Business*
CA Natl Taxpay Union*
FL Ch of Commerce*
James Madison Institute*
Assn OR Industries*
Christian Coalition of OR*
OR Farm Bureau*
OR Libertarian Party*
OR Taxpay United*
Parents Educ Assn*
Salem Ch of Commerce*
Taxpay Assn of OR*
Victoria Taft*
Sound Politics*
WA Eagle Forum*

CA Ch of Commerce*
CA Libertarian Party*
Citiz for Better Amer*
Orange Co. Taxp Assn*
FL Libertarian Party*
Assn of WA Business*
WA Research Council*

AZ Libertarian Party*
CO Libertarian Party*

Inland Valley Daily Bulletin
North Co. Times
Riverside Press-Enterp
S. Bernardino Co. Sun
S. Diego Union-Trib*
Torrance Daily Breeze*
Rocky Mountain News
Ft Lauderdale Sun Sentinel
Lakeland Ledger
Melbourne FL Today
Orlando Sentinel
Tampa Trib
Vancouver Columbian

Long Beach Press-Tel*
LA Daily News*
Orange Co. Register*
CO Springs Gazette*
Ft Myers News Press*
FL Times-Union*
Naples Daily News*
Spokesman Review*

East Valley Trib
Bakersfield Californian
Contra Costa Times
Oakland Trib
Denver Post
Daytona Beach News-J
Miami Herald
Sarasota Herald-Trib
Tallahassee Democ
Portland Oregonian
Seattle Times
Tacoma News Trib

AZ Republic
LA Times*
Modesto Bee*
Sacramento Bee*
SF Examiner
S. Rosa Press Democ*
Ventura Co. Star*
Palm Beach Post
St. Petersburg Times*

AZ Daily Star*
Fresno Bee*
SF Chronicle*
S. Jose Mercury News*
Eugene Register-Guard* Seattle Post-Intelligencer*

-.9   -.6   -.3   0   .3   .6   .9
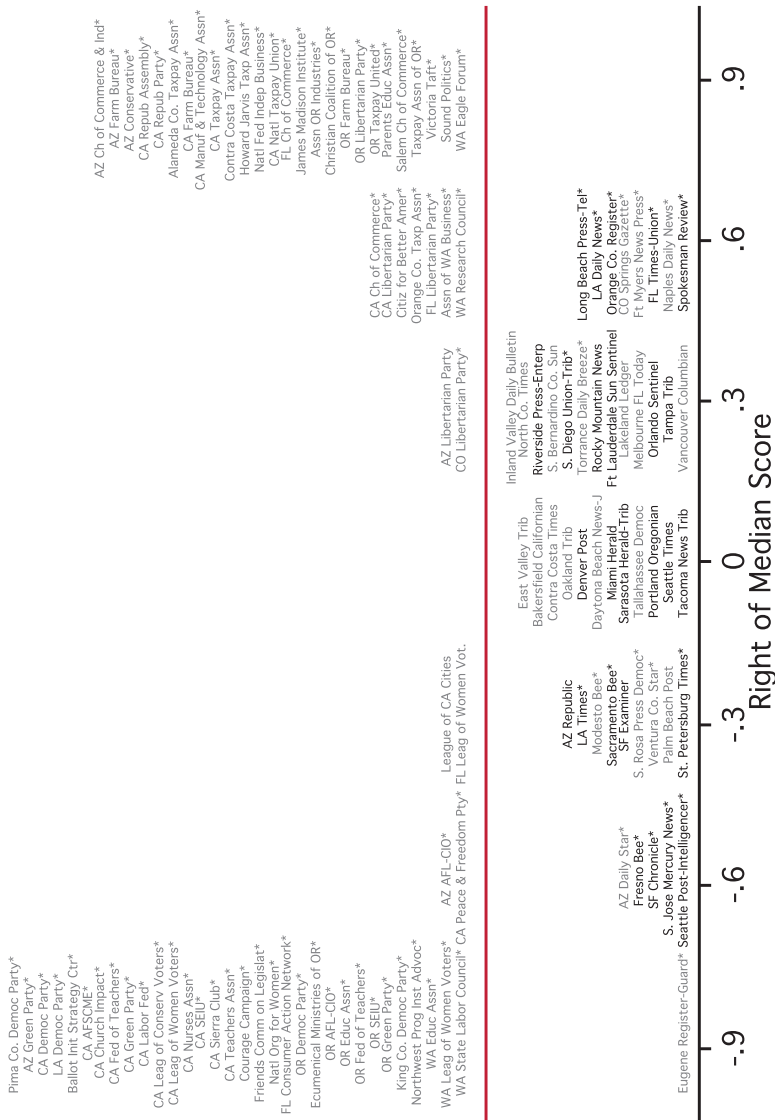
Right of Median Score

FIGURE 3. Main newspapers and interest groups in six states. The figure displays the political position of the main interest groups and newspapers in Arizona, California, Colorado, Florida, Oregon, and Washington. The layout is the same as that of Figure 2.

31 newspapers to the right of the median voter and 25 to the left (Table C.1).[21] If anything, newspapers are, on average, located slightly to the right of the California median voter.[22] Tables C.2–C.6 show the estimates for the other states: Arizona, Colorado, Florida, Oregon, and Washington. Overall, the patterns are similar to those for California—in particular, most of the newspapers are more moderate than most of the interest groups. There is some variation in the overall orientation of the press across states. In Oregon newspapers exhibit a tilt toward the left (although six newspapers have *Right of Median* scores below zero and five have a score above zero, the left-leaning newspapers are further from the center than the right-leaning newspapers); in Arizona and Colorado the situation seems relatively balanced, while in Florida and Washington the newspapers exhibit a conservative bias.

5. Variation in Bias Across Issues

In this section we consider how the degree of bias varies across a number of salient issues. On some issues newspapers appear clearly to the left of the median voter. Gay rights, especially gay marriage, is a conspicuous example in recent years. Between 1996 and 2012 there were a number of propositions clearly dealing with gay rights. A majority of voters supported the conservative, anti-gay rights alternative on 68% of these. Newspapers, however, endorsed this alternative only 3% of the time. Yet on other issues, newspaper endorsements appear to be to the right of the median voter. For example, a majority of voters supported the conservative, anti-minimum wage position on only 14% of the propositions, while newspapers endorsed the conservative alternative almost 78% of the time.

To describe the situation more comprehensively, consider all newspaper–proposition pairs for which newspaper n endorsed the losing position on proposition p, so *Right of Median*$_{np}$ is not missing. We classify propositions according to issue areas, and construct a set of indicator variables such that $I_{pj} = 1$ if proposition p belongs to issue area j and $I_{pj} = 0$ otherwise, for $j = 1, \ldots, J$ (some propositions are included

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21.   One newspaper (the *Palm Springs Desert Sun*) is located exactly at the state median voter—that is, with a *Right of Median* of zero.

22.   In addition, for California we include voters from the six largest counties, treating each county as a single "endorser". Interestingly, the estimates suggest that newspapers based in a given county tend to be more moderate than the median voter living in that county, at least for the largest counties. The Orange County median voter is to the right of the *Orange County Register* and the San Diego County median voter is to the right of the *San Diego Union-Tribune*, while the San Francisco County median voter is to the left of both the *San Francisco Chronicle* and *San Francisco Examiner*, and the Los Angeles median voter is to the left of the *Los Angeles Times*. Also, the Alameda County median voter is more extreme than the *Oakland Tribune* and *Alameda Times-Star*, although both newspapers are on the opposite side of the statewide median (the median voter in the county is to the left of the statewide median, while the two newspapers are to the right). Note that Santa Clara is missing from Table C.1, because the majority in this county always agreed with the majority in the state, so we cannot compute a *Right of Median* score.

TABLE 3. Right of median by issue.

Gay rights, marriage	−0.99	(0.01)
English language	−0.87	(0.13)
Term limits	−0.84	(0.11)
Crime	−0.72	(0.17)
Immigration	−0.86	(0.13)
Govt compensation	−0.71	(0.31)
Affirmative action	−0.70	(0.27)
Taxes	−0.60	(0.11)
Gambling	−0.54	(0.30)
Agriculture	−0.21	(0.33)
Gun rights, hunting	0.14	(0.47)
Energy	0.29	(0.35)
Tort reform	0.32	(0.35)
Abortion	0.37	(0.41)
Health care	0.57	(0.17)
Tobacco, smoking	0.58	(0.29)
Education	0.59	(0.17)
Marijuana	0.68	(0.17)
Environment, pollution	0.75	(0.17)
Labor	0.76	(0.13)
Minimum wage	1.00	(0.00)
Livestock, trapping	1.06	(0.19)
# Observations	2,713	

Notes: Rows present the estimated coefficients and standard errors (in parentheses) of equation (1). The dependent variable is the group-based *Right of Median* score, and each observation is a newspaper–proposition pair for which the *Right of Median* score is nonmissing. Standard errors are clustered both by newspaper and proposition. *Right of Median* has a range of –1 to 1 (100% liberal to 100% conservative).

in more than one issue category). We then estimate the following model:

$$Right\ of\ Median_{np} = \sum_{j=1}^{J} \beta_j I_{pj} + \epsilon_{np}. \tag{1}$$

Thus, the estimate of β_j measures the average bias exhibited by newspapers on issue j. As in Table 2, the standard errors are clustered both by newspaper and proposition.

Table 3 presents the estimates. On average, newspapers appear to be more liberal than the median voter on many social, cultural, populist, and anti-government issues, such as gay marriage, immigration, crime (especially propositions regarding "victims bill of rights"), propositions to make English the "official state language", term limits, compensation of elected government officials, and taxes.

However, newspapers appear to be more conservative than the median voter on issues dealing with economic regulations, such as increasing the minimum wage, labor regulations and relations, environmental issues, and issues dealing with livestock or animal trapping. Interestingly, on measures dealing with abortion, newspapers take the conservative position slightly more often than the median voter.

These patterns are broadly consistent with a world in which newspaper owners allow their editors and journalists—who tend to be liberal—to take a liberal stance on social/cultural issues, but not on economic issues, on which the owners themselves and advertisers may have a larger stake.[23] Of course, we cannot rule out that this differential stance on social/cultural versus economic issues is demand driven, as newspapers cater to the tastes of marginal readers, who happen to be liberal on the former and conservative on the latter (e.g., Canes-Wrone, Herron, and Shotts 2001; Hamilton 2004; Gentzkow and Shapiro 2010).

6. Editorial Sections versus News Sections

The previous estimates apply specifically to the editorial pages of newspapers, since endorsements only appear in the editorial section. What about the news pages? Here we show that, on average, *the news and editorial sections of newspapers have almost identical ideological/partisan positions*. Putting this together with the results from the previous section, we conclude that on average both the news sections and the editorial sections of the newspapers in each state are balanced around the state median voter. This is important because journalists appear to be more liberal than newspaper editors and owners, and critics complain that the journalists mainly influence what appears in the news section, not the editorial section, of newspapers.

We use two measures from previous work, one based on the relative propensity to use phrases used more by Democratic or Republican congressmen proposed by Gentzkow and Shapiro (2010), and one based on the relative propensity to cover scandals involving Democratic or Republican politicians proposed by Puglisi and Snyder (2011). We refer to these as the "GS" and "PS" measures, respectively. In both cases, we find that the mean and median positions of news sections are approximately the same as the mean and median positions of the editorial sections of the corresponding newspapers. If anything, the measures indicate that the news sections are slightly more conservative than the editorial sections.

For the measure based on Gentzkow and Shapiro (2010), we use the 300 two-word and three-word phrases (150 for each party) with the greatest power to discriminate between Democratic and Republican congressmen.[24] Since the phrases were found by analyzing the *Congressional Record* of 2005, we examine newspapers over the period 2004–2006. Let n index newspapers, and let $i \in \{News, Editorial\}$ index sections. Let $R_n^{GS}(i)$ be the total number of stories in section i of newspaper n containing one or more of the phrases used more by Republicans than Democrats, and let $D_n^{GS}(i)$ be the total number of stories in section i of newspaper n containing one or more of

the phrases used more by Democrats than Republicans.[25] Then the estimated pro-Republican biases of the sections in newspaper n are

$$News\ Section\ Bias_n^{GS} = \frac{R_n^{GS}(News) - D_n^{GS}(News)}{R_n^{GS}(News) + D_n^{GS}(News)}$$

and

$$Editorial\ Section\ Bias_n^{GS} = \frac{R_n^{GS}(Editorial) - D_n^{GS}(Editorial)}{R_n^{GS}(Editorial) + D_n^{GS}(Editorial)}$$

and the degree of pro-Republican bias of the news section relative to the editorial section is simply the difference, $News\ Section\ Bias_n^{GS} - Editorial\ Section\ Bias_n^{GS}$.

For the measure based on Puglisi and Snyder (2011), we use all scandals covered in their dataset—this consists of 13 scandals involving Democratic politicians and 19 involving Republican politicians over the period 1997–2007.[26] Let R_n^i be the total number of stories in section i of newspaper n that discuss scandals involving Republicans, and let D_n^i be the total number of stories in section i of newspaper n that discuss scandals involving Democrats. Then the estimated pro-Republican biases of the sections of newspaper n are

$$News\ Section\ Bias_n^{PS} = \frac{D_n^{PS}(News) - R_n^{PS}(News)}{D_n^{PS}(News) + R_n^{PS}(News)}$$

and

$$Editorial\ Section\ Bias_n^{PS} = \frac{D_n^{PS}(Editorial) - R_n^{PS}(Editorial)}{D_n^{PS}(Editorial) + R_n^{PS}(Editorial)}.$$

Note that a newspaper has more of a pro-Republican bias if it publishes relatively more stories about Democratic scandals. Again, degree of pro-Republican bias of the news section relative to the editorial section is the difference, $News\ Section\ Bias_n^{PS} - Editorial\ Section\ Bias_n^{PS}$.

For the PS measure, the sample of newspapers is the same as in Puglisi and Snyder (2011), except that we drop newspapers for which the total number of hits across all scandals on either the editorial or news page is less than 20. For the GS measure, the sample consists of all newspapers searchable online via Newslibrary.com.[27] We drop newspapers for which the total number of hits across all phrases on either the editorial or news page is less than 30.

We are primarily interested in the mean and median values of *News Section Bias − Editorial Section Bias* for each measure.[28] Table 4 presents the results. For each

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25.   We count each stories for each different phrase, so, for example, if a story includes k different Republican phrases it will be counted k times. We do not count multiple instances of the same phrase.

26.   See Puglisi and Snyder (2011) for a list of the scandals.

27.   We also added the *New York Times* using Factiva.com, the *Chicago Tribune*, and the *Los Angeles Times*, using ProQuest.com.

28.   Note that neither of these measures can be used to estimate the *absolute* bias of any section of any newspaper, because we have no way of knowing what value the measures would be for "neutral"

TABLE 4. News sections versus editorial sections.

Item	Full sample	Endorsement subsample
Gentzkow–Shapiro measure		
News Section Bias − Editorial Section Bias, mean	0.06	0.06
News Section Bias − Editorial Section Bias, median	0.06	0.06
News Section Bias − Editorial Section Bias, std dev.	0.19	0.13
News Section Bias versus *Editorial Section Bias*, correlation	0.52	0.52
# Observations	758	174
Puglisi–Snyder measure		
News Section Bias − Editorial Section Bias, mean	0.05	0.06
News Section Bias − Editorial Section Bias, median	0.02	0.02
News Section Bias − Editorial Section Bias, std dev.	0.19	0.18
News Section Bias versus *Editorial Section Bias*, correlation	0.77	0.85
# Observations	235	126

Notes: For each measure, the Full Sample column shows results for the sample of all available newspapers for each measure, and the Endorsement Subsample column shows results for the subsample of newspapers for which we also have five or more ballot proposition endorsements. The bottom row in each panel shows the correlation between *News Section Bias* and *Editorial Section Bias* for each measure.

measure, the first column show the results for the full sample of all available newspapers, and the second column shows results for the subsample of newspapers for which we also have eight or more endorsements on ballot propositions (the "Endorsement subsample"). For both measures, and for both subsamples, the mean and median values of *R Bias Diff* are small but positive. Thus, there is no evidence that the news sections of newspapers are noticeably more liberal or pro-Democratic than the editorial sections.

Interestingly, not only are the overall levels of bias in news and editorial sections similar, but they are also strongly and positively correlated across newspapers. In the full samples, the correlation between *News Section Bias*^{GS} and *Editorial Section Bias*^{GS} is 0.52, and the correlation between *News Section Bias*^{PS} and *Editorial Section Bias*^{PS} is 0.77. Thus, overall the news and editorial sections of newspapers track each other

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newspapers. Zero is *not* a "neutral" position. For example, since members of the majority party probably have more impact on public policy outcomes than members of the minority party—for example, proposals by majority members are more likely to become law than those proposed by minority members—and since Republicans were the majority party in congress during 2004–2006, we might expect that even a neutral newspaper would devote more coverage to Republican congressmen, quoting Republican speeches, discussing Republican proposals, and so on. Thus, it could easily be argued that the "neutral" value of *News Section Bias*^{GS} for the period 2004–2006 is positive rather than zero. Similarly, since there were more scandals involving Republicans—perhaps simply because there were more Republicans in congress than Democrats for most of the years under study—it is likely that the "neutral" value of *News Section Bias*^{PS} is negative. In fact, it is not clear how to define a "neutral" position.
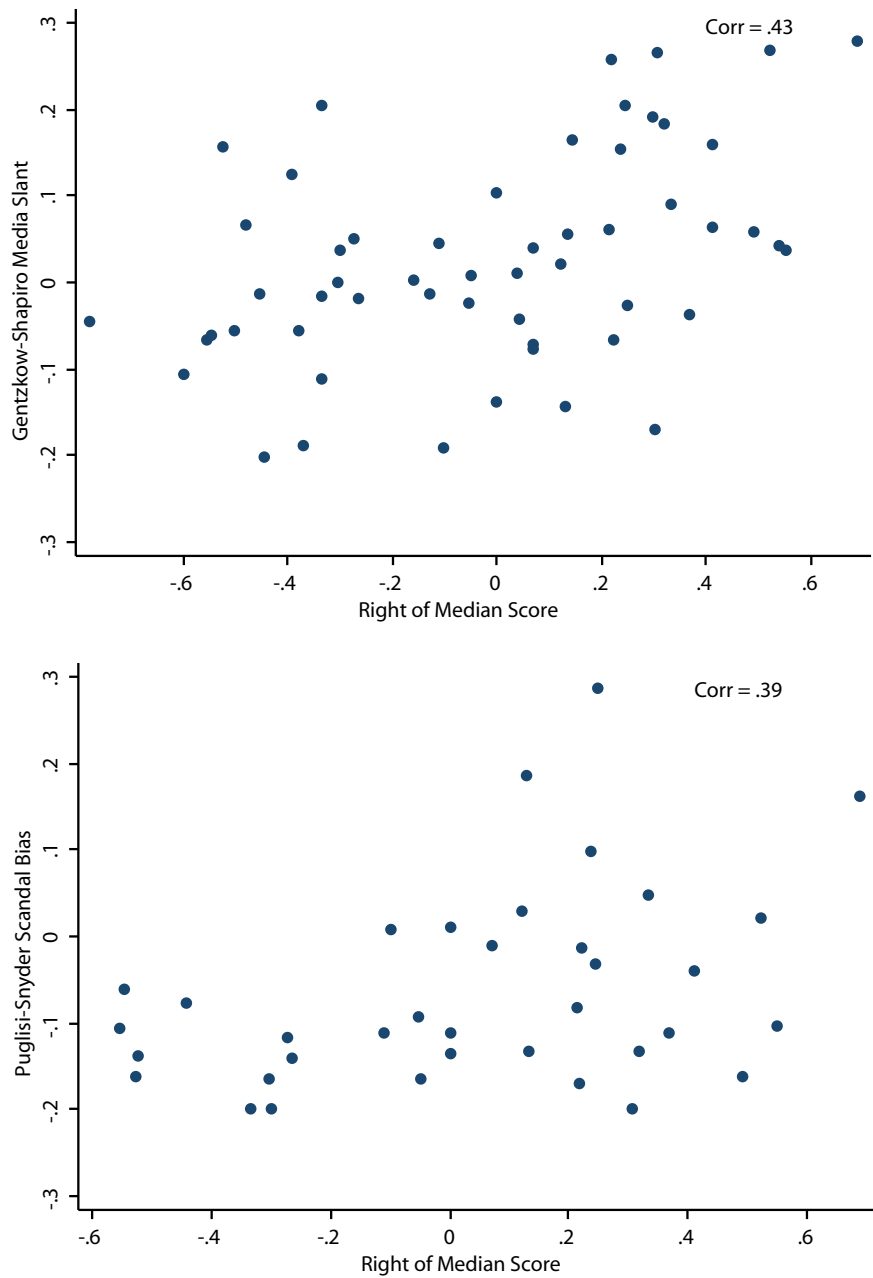
FIGURE 4. Comparison of the *Right of Median* scores with other measure of newspaper bias. The panel on the left displays a scatterplot of *Right of Median* scores against the Gentzkow–Shapiro measure of slanted language, for newspapers with at least 15 proposition endorsements. The panel on the right displays a scatterplot of *Right of Median* scores against the Puglisi–Snyder measure of biased scandal coverage, for newspapers with at least 15 proposition endorsements.

fairly closely—newspapers with relatively conservative (liberal) editorial pages also tend to have relatively conservative (liberal) news.[29]

We introduced the GS and PS measures of bias to investigate the ideological closeness of the editorial and the news sections on each newspapers. As a by-product of this exercise, we can also check to what extent those existing measures of bias are correlated with the *Right of Median* scores. In Figure 4 we show the scatterplots of our propositions-based measure of bias against the GS and PS measures, respectively. We focus on the newspapers for which we have less noisy measures—at least 15 endorsements used in making the *Right of Median* scores. The correlations are of the expected sign, statistically significant at the 0.05 level, but far from perfect. The correlation with the PS measure is 0.39, while the correlation with the GS measure is 0.43.[30]

7. Concluding Remarks

In this paper we propose and apply a new method to locate voters, newspapers, interest groups, and parties in the same ideological space. This method exploits the fact that newspapers, interest groups, and parties routinely take positions on ballot propositions, and voters ultimately vote on them. By tracing out where newspapers are located with respect to political parties and state median voters on the various propositions, we can assess previous claims about the degree and direction of media bias in the United States. To complete the picture we locate the news section of each newspaper relative to its editorial section, using two existing methods, and find that on average the news and editorial sections of newspapers have very similar ideological positions.

The main findings are easily summarized. First, newspapers are *ideologically balanced* around the median voter in each state. This finding casts doubt on claims that US newspapers exhibit an overall leftward (or rightward) bias. On the contrary, newspapers appear to be distributed symmetrically around the median voter. Second, there is a significant amount of ideological heterogeneity across newspapers—some are significantly to the left of the median voter, some to the right, while some others are indistinguishable from him/her. Third, when we disaggregate propositions by issue area, we find a significant amount of *imbalance* on some issues. Broadly speaking, newspapers are to the left of the median voter on many social and populist/anti-government issues, and to the right on many economic issues.

One potential extension is to use our method to locate individual politicians on the same ideological space where we have placed interest groups and newspapers. This is feasible for the subset of politicians who take clear public positions on enough ballot

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29.   The correlation is noticeably higher for the PS measure. This is driven in part by the fact that newspapers print more stories of all types—news, editorial, and letters to the editor—about local and in-state scandals, and there is considerable variation across newspapers in the degree to which local scandals involve Democrats or Republicans.

30.   We thank the editor, Stefano DellaVigna, for this suggestion.

propositions. Another extension is to analyze the "dimensionality" of the underlying space in which newspapers, interest groups, politicians, and voters are located. Previous research suggests that groups and politicians are quite ideological and one-dimensional, while voters are not. If media outlets are highly demand driven, newspapers might be multidimensional as well.

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