CHAPTER 15

Empirical Studies of Media Bias

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Abstract

In this chapter we survey the empirical literature on media bias, with a focus on partisan and ideological biases. First, we discuss the methods used to measure the relative positions of media outlets. We divide bias into two categories, explicit and implicit bias. We group existing measures of implicit bias into three categories: measures based on comparing media outlets with other actors, measures based on the intensity of media coverage, and measures based on tone. In the second part of the chapter we discuss the main factors that are found to be correlated with media bias, dividing these into demand-side and supply-side factors. We also discuss the role of competition across media outlets. In the third part of the chapter we discuss some of the attempts to measure the persuasive impact of media bias on citizens' attitudes and behavior.

Keywords

Agenda setting, Competition, Mass media, Media bias, Ideological bias, Newspapers, Press, Persuasion

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15.1. INTRODUCTION

A clear majority of Americans believe that mass media outlets are biased.[1] Media biases can take a variety of forms: in favor of the incumbent government, in favor of a particular political party, ideologically liberal or conservative, in favor of industries or companies that advertise heavily in the outlet or that own the outlet, or in favor of audiences that are more valuable to advertisers.

Although the belief in some sort of bias is widespread, measuring bias in a relatively objective, replicable, and affordable manner is a difficult task. Even defining bias requires considerable care. Perhaps the most difficult question is: Bias relative to what? Relative to what a "neutral" or "fair" or "balanced" outlet would do? Relative to the average or median preference that citizens have—or would have, if fully informed? Relative to the average preference of voters (sometimes a small and unrepresentative subset of citizens), or the outlet's audience (an even smaller and probably more unrepresentative subset of citizens)? In many cases, the most straightforward quantity to measure—and therefore the quantity most commonly measured—is bias relative to other media outlets.

Measuring media outlets relative to one another, it seems clear that there is variation in bias across media outlets. For example, in many countries some outlets are relatively liberal or supportive of left-leaning parties, while others are relatively conservative or supportive of right-leaning parties. This is true not only in the United States, but also in other countries where bias has been measured, such as the United Kingdom, Australia, and Italy. It is less clear whether there is any overall bias relative to citizens, voters, or consumers.

It is also not clear what factors produce the observed biases. Are the biases mainly due to supply-side factors—owners, editors, or journalists expressing their views, or trying to influence political opinions and behavior? Or are they due to demand-side factors—media outlets catering to the tastes of their readers or viewers? If the demand side dominates, what does the audience want? Do viewers and readers want "neutral" information, or confirmation of their prior beliefs and attitudes? How does competition affect the amount and direction of bias? Finally, it is not clear whether media bias has a large influence on citizens' beliefs, or on citizens' behavior, such as turnout and vote choice, although several studies have found modest effects.

In this survey, we focus on partisan and ideological biases. We begin by discussing the methods used to measure the relative positions of media outlets. We divide bias into two categories, explicit and implicit bias. Researchers define and measure implicit bias in a

[1] For example, in a 2011 Pew Research Center poll, 66% of respondents said that news stories are "often inaccurate" and 77% said that news organizations "tend to favor one side" (http://www.people-press.org/2011/09/22/press-widely-criticized-but-trusted-more-than-other-institutions/). Similarly, in a 2011 Gallup poll, 60% said either that the media are "too liberal" or "too conservative," while only 36% said they are "about right" (http://www.gallup.com/poll/149624/Majority-Continue-Distrust-Media-Perceive-Bias.aspx).

variety of ways, and we group these into three categories: measures that compare media outlets with other actors, measures based on the intensity of media coverage, and measures of tone. In the second part of the chapter, we discuss the main factors found to be correlated with media bias, dividing these into demand-side and supply-side factors. We also discuss the role of competition across media outlets. In the third part of the chapter, we discuss some of the attempts to measure the persuasive impact of media bias on citizens' attitudes and behavior.[2]

15.2. ESTIMATING BIAS

A substantial and growing empirical literature seeks to identify replicable and intuitive measures of the partisan or ideological position of media outlets. Underlying most of this research is a simple left–right, liberal–conservative view of politics, in which political actors have preferences over a one-dimensional ideological space. It seems natural to use this framework for two reasons. First, it is how journalists, pundits, politicians, and many voters talk about politics much of the time. Second, at least since Downs (1957), it has served as the foundation for most theoretical models of politics, as illustrated by the discussion in Chapter 14 in this volume.

Regarding the informational content of bias, Gentzkow et al. (2015) distinguish between two categories of bias, "distortion" and "filtering." Distortion arises when news reports are direct statements about raw facts, and the statements have the same "dimensionality" as the facts. Omission of facts is also included within this notion of bias as a special case. In these cases, the notion of "objective reporting" is relatively easy to define—a media outlet that ignores the event or reports a number other than the official figure (as if it was the official figure) engages in distortion.[3] On the other hand, filtering arises when news reports are necessarily of a lower dimensionality *vis a vis* the raw facts so that media outlets can offer only a summary of events. The notion of objective reporting does not apply to filtering. However, one can still slant news to the left or the right through a proper filtering strategy. Here, we discuss such partisan filtering. Chapter 13 discusses filtering across policy issues and in total.

[2] We do not have space for detailed treatment of other types of bias. See, e.g., Qian and Yanagizawa-Drott (2015) for evidence of a pro government bias, especially in coverage of foreign policy. See, e.g., Larcinese (2007) for evidence that some outlets in the UK "over-provide" news that is of interest to audiences that are more valuable to advertisers. See, e.g., Reuter and Zitzewitz (2006) and Gambaro and Puglisi (2015) for evidence that media outlets exhibit bias in favor of firms that buy advertising space on them.

[3] That is, distortion takes place when there are measurable facts, figures, or events that are so salient that they "must" be reported. Examples might be the number of troops killed in action in a war in which the country under consideration participates, a corruption scandal involving a prominent politician, or newly released figures on the official unemployment rate.

As Gentzkow et al. (2015) discuss in their chapter, filtering is more pervasive than distortion. This follows almost directly from the definition of what media outlets do. Since readers and viewers have limited time and attention, the business of the media is to select from the mass of raw facts produced by the events of each day, distill those selected into useful summaries, and then disseminate the resulting distillations. As a result, the various measures of media bias we discuss below fall mainly into the filtering bias category. To paraphrase Coase (1937), distortions are islands of conscious misreporting of salient facts in an ocean of more or less salient facts that go through filtering and selection.

15.2.1 Measures of Explicit Bias

Journalistic norms allow the free and open display of opinions in the editorial section, but not in news sections. As a result, it is typically easier to estimate the *explicit* ideological and partisan bias of newspapers, as it appears in their editorial sections. One straightforward way to do this is to investigate their endorsements in races for political offices or ballot propositions.[4]

Ansolabehere et al. (2006) analyze the political orientation of endorsements by US newspapers in statewide and congressional races, using a panel data design. They find a clear change in the average partisan slant of endorsements. In the 1940s and 1950s, Republican candidates enjoyed a strong advantage in newspaper endorsements—after controlling for incumbency status, Republican candidates were more than twice as likely to be endorsed as Democratic candidates. This advantage gradually eroded in subsequent decades so that by the 1990s there was a slight tendency for newspapers to endorse Democrats (even controlling for incumbency).[5]

Ho and Quinn (2008) code the editorials in 25 newspapers on about 495 Supreme Court cases during the period 1994–2004 to determine whether the newspaper favored the majority or minority position in each case.[6] Combining this information with the actual votes cast by the Supreme Court justices in those same cases, they estimate the relative positions of newspapers and justices. They find that the majority of newspapers in their sample are centrist relative to the distribution of positions estimated for justices—e.g., 50% are between Justice Kennedy and Justice Breyer (justices 4 and 6 on the estimated ideological scale).

Puglisi and Snyder (2015) study ballot propositions to measure bias. They exploit the fact that newspapers, parties, and interest groups take positions on propositions, and the fact that citizens ultimately vote on them. This allows them to place newspapers, parties,

[4] This is, of course, feasible only in a context where media outlets routinely endorse candidates in electoral races.

[5] They also find an upward trend in the average propensity to endorse one or the other major-party candidate, and a particularly large increase in the propensity to endorse incumbents.

[6] The period of study is the last natural Rehnquist Court.

interest groups, and voters within each state on the same scale. They study 305 newspapers over the period 1996–2012. They find that newspapers are distributed evenly around the median voter in their states and on average are located almost exactly at the median. Newspapers also tend to be centrist relative to interest groups. In California, for example, 16% of the newspapers in their sample (of 57) take a position to the right of the median more than twice as often as they take a position to the left of the median—exhibiting a substantial conservative bias—and 19% do the opposite. They also find differences across issue areas. In particular, newspapers appear to be more liberal than voters on many social and cultural issues such as gay marriage, but more conservative on many economic issues such as the minimum wage and environmental regulation.

Other aspects of explicit media bias include the choice of which syndicated columnists to publish, which letters to the editor to print, and, for television or radio, how much airtime to give to politicians from different parties. In the interest of space, we discuss only two examples of these. Butler and Schofield (2010) conduct a field experiment in which they randomly sent pro-Obama or pro-McCain letters to the editor to 116 newspapers around the United States in October 2008 of the presidential election campaign.[7] After controlling for newspaper circulation, they find that newspapers were significantly more likely to publish the letter or contact the authors for verification purposes if the letter supported McCain rather than Obama, suggesting an overall pro-Republican (or at least pro-McCain) bias.[8] Durante and Knight (2012) consider the last type of bias, for the case of Italian television news during the period 2001–2007. They find that the stations owned by Berlusconi (Mediaset) exhibit a bias in favor of the right—these stations allocate more speaking time to right-wing politicians than left-wing politicians, even when the left is in power. One of the public stations, Rai 2, also exhibits a clear bias in favor of the right, while Rai 3 exhibits a relatively pro-left bias.

15.2.2 Measures of Implicit Bias

Many observers are more concerned about the *implicit* political behavior of media outlets. One reason for the concern is that implicit bias can be more insidious, since readers and viewers might be less aware of it.

There are three broad approaches used to estimate the implicit ideological stances of media outlets. The first is the comparison approach. Media outlets are classified by comparing the text of news stories or broadcasts to the text (usually in speeches) of politicians of known ideological or partisan positions. Outlets that "talk like" Republican or conservative politicians are classified as Republican or conservative, and those that "talk like" Democratic or liberal politicians are classified as Democratic or liberal. The second is the issue emphasis approach. Media outlets are classified according to the amount of coverage

[7] Other than the name of the candidate supported, the text of the letters was the same.
[8] See Grey and Brown (1970), Renfro (1979), and Sigelman and Walkosz (1992) for other studies.

they give to different politically relevant topics. Outlets that emphasize topics that favor Republicans—e.g., dwelling on the economy when the president is a Democrat and the economy is performing poorly, or dwelling on issues that are "owned" by Republicans—are classified as Republicans, while outlets that emphasize topics that favor Democrats are classified as Democratic. In the third approach, media outlets are classified according to the "tone" of their coverage. Outlets that praise Republicans and criticize Democrats are classified as Republican, while outlets that do the opposite are classified as Democratic.

15.2.2.1 The Comparison Approach

The comparison approach adopts the basic idea of one of the pioneering subfields of automated text analysis, "author identification" (also known as "stylometry"). In stylometry, the goal is to identify who actually wrote an anonymous or disputed text, by comparing the frequency of various words or phrases in the target text with the corresponding frequencies in texts of known authorship. The first well-known example of this is Mosteller and Wallace (1963), who attribute to Madison, rather than Hamilton, the authorship of 12 disputed *Federalist Papers*.[9]

The most prominent papers that use the comparison approach to estimate media biases are Groseclose and Milyo (2005) and Gentzkow and Shapiro (2010).

Gentzkow and Shapiro (2010) measure media bias based on similarities between the language used by media outlets and congressmen. They first identify "partisan" words and phrases in the *Congressional Record*—those words and phrases that exhibit the largest difference in the frequency of use between Democratic and Republican representatives. They then measure how frequently these expressions appear in a sample of 433 newspapers in 2005. They find that the partisan bias of newspapers depends mainly on consumers' ideological leaning and far less on the identity of owners. Newspapers that adopt a more liberal (conservative) language tend to sell more copies in Zip codes that are more liberal (conservative), as proxied by the propensity of their inhabitants to donate to Republican or Democratic candidates. Overall, variation in consumer preferences accounts for about 20% of the variation in their measure of slant. On the other hand, after controlling for geographical factors, the ideological slant of a given newspaper is not significantly correlated with the average ideological slant of those belonging to the same chain. They conclude that, "Our data do not show evidence of an economically significant bias relative to the benchmark of profit maximization" (p. 60).

Groseclose and Milyo (2005) measure media bias based on similarities between the think-tanks cited by media outlets and the think-tanks cited by congressmen. They study

[9] According to Holmes (1998), the first published work in stylometry is Mendenhall (1887), who attempts to determine the authorship of certain plays to Bacon, Marlowe, or Shakespeare on the basis of average word length. Holmes argues that the work of Mosteller and Wallace (1963) is the most important early breakthrough. More recent examples applying this approach to the study of politics include Laver and Garry (2000) and Laver et al. (2003).

17 media outlets during the years 1990–2003.[10] They first estimate the political leaning of each think-tank by computing the average ideological position (ADA score) of the representatives who quote the think-tank in a non-negative way. They then measure the bias in media outlets based on how frequently these outlets cite the different think-tanks. They find that all the outlets in their sample—except *Fox News Special Report* and the *Washington Times*—are located to the left of the average Congress member. At the same time, media outlets are relatively centrist. All but one (the *Wall Street Journal*) are located between the average Democrat and the average Republican Congressmen. The exception is the *Wall Street Journal*—it is the most liberal outlet and also the most extreme, with an estimated "ADA score" of 85.1.[11]

Groseclose and Milyo (2005) make strong and provocative claims, so their study has been the subject of several critiques. For example, Gasper (2011) explores the robustness of their findings. He argues that their conclusions are robust to different measures of the ideological positions of senators and congressmen, but not to the time period studied. In particular, the average estimated position of the media shifts to the right if one uses more recent time periods. Nyhan (2012) discusses other potential weaknesses of their method.

One other paper that uses the comparison approach deserves mention. Gans and Leigh (2012) focus on Australia and measure media bias based on similarities between the public intellectuals mentioned by media outlets and the public intellectuals mentioned by federal members of parliament. They study 27 media outlets—newspapers, and radio and television stations—over the period 1999–2007. They first estimate the partisan leaning of each public intellectual in their sample by computing the degree to which members of the Coalition (conservative party), rather than the Labor Party, mention the intellectual (in a non-negative way), as recorded in the parliamentary record. They then measure the bias in media outlets based on how frequently these outlets mention the different public intellectuals. They find that in all but one of their media outlets, the pattern of mentions is statistically indistinguishable from the average pattern of mentions by members of parliament.[12]

[10] The total sample size is 20 since they include both the morning and evening news programs on the three major television networks. The time period covered varies for each outlet. For example, the period is 10 months long, 7/1/2001 to 5/1/2002, for the *New York Times*; only 4 months long, 1/2/2002 to 5/1/2002, for the *Wall Street Journal*, the *Washington Post*, and the *Washington Times*; almost 2 years long, 8/6/2001 to 6/26/2003 for *Time Magazine*; and 15 and a half years long, 1/1/1990 to 6/26/2003, for the *CBS Evening News*.

[11] The scores run from 0 to 100, 0 being the most conservative score and 100 being the most liberal.

[12] With respect to mentions of public intellectuals, for example, the authors find that all media outlets except one are located within two standard errors of the average pattern of mentions by members of parliament. See Adkins Covert and Wasburn (2007) for another study using the comparison approach.

15.2.2.2 The Issue Intensity Approach

Like the comparison approach, the issue intensity approach draws heavily on earlier ideas, especially the literature on agenda-setting. The theory of agenda-setting effects posits that the amount of coverage devoted to an issue by the media can influence the importance readers and viewers attach to that issue. Media effects in the model of Strömberg (2004) are similarly driven by intensity of issue coverage. It suggests that rational voters evaluate politicians more on issues covered in the media, simply because they are better informed about these, and that this causes politicians to work more on those issues. Chapter 13 discusses evidence of this.

As Cohen (1963, p. 13) famously wrote, the press "may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about." The theory of agenda-setting effects was pioneered by Lippmann (1922) and explored empirically by McCombs and Shaw (1972) in a study of Chapel Hill voters during the 1968 presidential campaign. As noted by McCombs (2002), not only can mass media coverage highlight some topic as an object of attention, but the coverage can also emphasize particular attributes of the topic, making these attributes more salient.[13]

Puglisi (2011) provides an account of the agenda-setting behavior of the *New York Times* over the period 1946–1997. According to the issue ownership hypothesis, introduced by Petrocik (1996), an issue is said to be Democratic (or "owned" by the Democratic party) if the majority of citizens stably believe that Democratic politicians are better at handling the main problems related to that issue than Republican politicians. To measure the bias of the *New York Times*, Puglisi (2011) computes the relative frequency of stories on various issues as a function of which party controls the presidency and time period. He finds that the *Times* displays pro-Democratic bias, with some anti-incumbent aspects. More specifically, during presidential campaigns the *Times* systematically gives more coverage to Democratic issues (e.g., civil rights, health care, labor issues) when the incumbent president is a Republican.[14]

Larcinese et al. (2011) analyze the coverage of economic issues in a sample of 102 US newspapers over the period 1996–2005. The idea is straightforward. Suppose that the incumbent president is a Democrat. When the news on some economic issue is bad (e.g., unemployment is high or rising), then newspapers with a pro-Republican bias that

[13] This is closely related to "issue priming"—how readers and viewers, when assessing a given situation or individual, are pushed towards giving a higher weight to the aspect emphasized by the mass media. See Krosnick and Miller (1996) for a review of this literature. See, e.g., Iyengar et al. (1982) for experimental evidence regarding these hypotheses.

[14] The magnitude of the estimated effect is substantial. Under a Republican president, there are on average 26% more stories about Democratic topics during the presidential campaign than outside of it. On the other hand, under a Democratic president there is no significant difference in the amount of coverage of Democratic topics during and outside presidential campaigns.

wish to decrease the popularity of the president should devote more coverage to that issue, while newspapers with a pro-Democratic bias should devote less coverage to that issue. The opposite should occur when the economic news is good, and the patterns should be reversed if the incumbent president is a Republican.[15] The authors first estimate the bias in economic news coverage exhibited by each newspaper in their sample of newspapers and find considerable variation.[16] They then study whether there is a significant correlation between the explicit bias of newspapers—as exhibited by their endorsement policies—and the implicit partisan bias in their coverage of bad/good economic news as a function of the political affiliation of the incumbent president. They find a significant and robust correlation for unemployment. Newspapers with a pro-Democratic endorsement pattern systematically give more coverage to high unemployment when the incumbent president is a Republican than when the president is Democratic, compared to newspapers with a pro-Republican endorsement pattern. This result is robust to controlling for the partisanship of readers. They also find some evidence that newspapers cater to the partisan tastes of readers in the coverage of the budget deficit. Regarding the coverage of inflation or trade deficits, they find no robust evidence of a partisan bias that is correlated with either the endorsement or reader partisanship.[17]

Puglisi and Snyder (2011) focus on political scandals, which are inherently "bad news" for the politicians and parties implicated. They study the coverage of 32 scandals involving members of congress or statewide officers over the period 1997–2007 in a sample of 213 newspapers. They find that newspapers with an explicit pro-Democratic bias—again, measured as a higher propensity to endorse Democratic candidates in elections—give relatively more coverage to scandals involving Republican politicians than scandals involving Democratic politicians, while newspapers with an explicit pro-Republican bias tend to do the opposite.[18] This is true even after controlling for the average partisan leanings of readers. In contrast, newspapers appear to cater to the partisan tastes of readers only for local scandals.

[15] The extreme case in which a newspaper does not report at all about a highly salient economic news item would be a case of distortion (via omission) in the Gentzkow et al. (2015) sense.

[16] Consider news about unemployment. The *Fresno Bee* is at the liberal end of the spectrum. Given a one-percentage-point increase in the unemployment rate, it would publish almost 1% fewer stories on the topic under Clinton than under Bush. In relative terms, this difference is large, since on average there are just 1.35% stories on unemployment in the newspaper. The *Bismark Tribune* is at the conservative end of the spectrum. Given a one-percentage-point increase in the unemployment rate, it would print 0.5% more unemployment stories under Clinton than under Bush. The distribution is unimodal, so most newspapers are, in relative terms, centrist. This includes the largest ones, such as the *New York Times* and the *Los Angeles Times*.

[17] They also conduct a case study of the *Los Angeles Times* over the post-war period, documenting a sharp change in its coverage before and after Otis Chandler took over as editor of the newspaper.

[18] Again, the extreme case in which a newspaper does not report at all about a highly salient scandal would be a case of distortion (via omission) in the Gentzkow et al. (2015) sense.

Fonseca-Galvis et al. (2013) conduct an analysis similar to Puglisi and Snyder (2011), but they study US newspapers from 1870 to 1910, an era when the press was much more explicitly partisan than today and many newspapers were closely affiliated with a political party. They study the coverage of 122 scandals in a sample of 166 newspapers. They find that Democratic (Republican) newspapers publish significantly more articles about scandals involving Republican (Democratic) politicians, and significantly fewer articles about scandals involving Democratic (Republican) politicians, relative to independent newspapers. For example, after controlling for geography (newspapers are much more likely to cover local scandals), on average partisan newspapers published about 30% more stories about a scandal if it involved a politician from the opposite party. They also find that as the level of competition faced by a newspaper increases, the bias exhibited—both against the opposition party and in favor of the newspaper's own party—decreases.

Finally, Brandenburg (2005) is interesting because it combines the issue emphasis approach with the comparison approach. He studies seven British newspapers during the 2005 election campaign. In one analysis, he compares the issue agenda of newspapers as measured by the percentage of coverage devoted to different policy issues with the issue agendas of the political parties as measured by the percentage of attention devoted to these issues in press releases. This type of analysis could be applied relatively easily to other countries and time periods.

15.2.2.3 The Third Approach—Measuring Tone

The third approach—measuring bias in the "tone" or "sentiment" of coverage—also has a long history. The idea is simple: a media outlet is biased in favor of a political party or position if it systematically portrays this party or position in a favorable manner, and/or it portrays the opposing party or position in a negative manner. Pioneering studies include Berelson and Salter (1946) on the portrayal of minority groups in US magazine fiction, and Lasswell et al. (1952) on the portrayal of political symbols in "prestige" newspapers in several countries. Relative to the first two approaches, this approach has traditionally been much more labor intensive, since researchers in this area have tended to emphasize the need for careful, human-based coding of content. Innovations using semantic dictionaries (e.g., the General Inquirer dictionary) or supervised machine learning promise to sharply reduce the costs, and this is likely a fruitful area for research.[19] The decision to use human- or machine-based coding always involves a tradeoff. Compared to human-based coding, automated coding is less accurate in detecting the tone of each specific text analyzed but allows the researcher to quickly code large numbers of texts.[20]

[19] See, e.g., Young and Soroka (2012) for an overview.

[20] As Antweiler and Frank (2005) note, other factors to consider in assessing the relative merits of human-based and automated coding include the researcher "degrees of freedom" bias and publication bias.

Lott and Hassett (2014) analyze newspaper coverage when official data about various economic indicators are released. They focus on how newspapers cover the release of official economic data, coding the tone—positive or negative—of newspaper headlines, and relate this to the partisanship of the sitting president and congressional majority. They study a panel of 389 US newspapers from 1991 to 2004.[21] A newspaper exhibits a pro-Democratic bias if it provides a more positive account of the same economic news (e.g., the same unemployment rate) when the sitting president is Democrat. Controlling for underlying economic variables, they find that, on average, the newspapers in their sample publish significantly fewer positive stories when the incumbent president is a Republican. They argue that this indicates an overall liberal bias in the US press.[22] Since their main goal is to measure the "absolute" degree of bias exhibited by US newspapers, they do not present estimates of different positions for different newspapers.

Gentzkow et al. (2006) study how US newspapers covered the Crédit Mobilier scandal during the early 1870s and the Teapot Dome scandal in the 1920s. They measure newspaper bias by counting the relative occurrence of words such as "honest" and "slander" in articles covering the scandals. They find that the coverage of the Crédit Mobilier scandal (which occurred in a period dominated by partisan newspapers) was more biased than the coverage of Teapot Dome (which occurred at a time when fewer dailies were directly linked to political parties). They also find some evidence that the coverage of the Crédit Mobilier scandal was less biased for newspapers with higher circulation.[23] They argue that during the years between these scandals, technological progress in the printing industry, together with increases in population and income in US cities, greatly expanded the potential size of newspapers' markets. In the competition for market shares and advertising revenues, newspapers faced strong incentives to cut the ties with political parties and become more independent and less biased.

A number of other studies measure bias in terms of tone, including Lowry and Shidler (1995), Kahn and Kenney (2002), Niven (2003), Schiffer (2006), Entman (2010), Eshbaugh-Soha (2010), Gans and Leigh (2012), and Soroka (2012). Soroka (2012) studies the tone of news stories on unemployment and inflation in the the *New York Times* over the period 1980–2008. This is the only paper that employs automated content analysis methods to code tone; the rest all rely on human coding.[24]

[21] They also study a smaller panel of 31 newspapers from 1985 to 2004.

[22] Since their main analysis only involves a comparison of one Democratic president (Clinton) to two Republican presidents (George Bush and George W. Bush), and since there were many differences in the economic and political situations facing these presidents, it is difficult to make strong claims about a generic, absolute, ideological or partisan bias.

[23] The relationship is not statistically significant except when they exclude the *New York Herald*.

[24] D'Alessio and Allen (2000) conduct a meta-analysis of 59 quantitative studies containing data concerned with partisan media bias in presidential election campaigns since 1948. They find no significant biases for newspapers or news magazines, but a small degree of "coverage" and "statement" bias in television network news.

Finally, a number of studies measure bias in the tone of visual images—whether candidates are portrayed favorably or unfavorably in photographs and television news clips. For example, Barrett and Barrington (2005) study 435 newspaper photographs of candidates in 22 races in seven newspapers during the 1998 and 2002 general election campaign seasons. They find that if a newspaper endorsed a candidate, or exhibited a prior pattern of endorsements and editorials favoring the party of the candidate, then that newspaper also tended to publish more favorable photographs of the candidate than his or her opponent. Other studies of this type of bias include Kepplinger (1982), Moriarty and Garramone (1986), Moriarty and Popvich (1991), Waldman and Devitt (1998), Banning and Coleman (2009), Grabe and Bucy (2009), and Hehman et al. (2012).

15.2.3 Is There One Dimension?

As noted above, almost all of the work on media bias assumes a one-dimensional issue space. This simplification might be realistic enough in the "polarized" political environment of the US today. Partisanship affiliations and ideology are more highly correlated than in the past, and roll-call voting and political debate appear quite partisan and one-dimensional.[25] In previous decades, however, this was not the case. For example, during the period 1940–1970, racial issues cut across the main dimension of partisan conflict. This produced a configuration in which many southern Democrats were moderately liberal on the "economic dimension" but extremely conservative on the "race dimension." In addition, a large literature on party politics outside the US finds that the political landscape is multidimensional—i.e., a multidimensional space is required to adequately describe the relative positions of parties and voters.[26]

This leads naturally to the question: When political conflict is multidimensional, are the political biases exhibited by media outlets multidimensional as well? There is no work yet focusing on this question, but some existing studies provide suggestive evidence. For example, Gans and Leigh (2012) and Puglisi and Snyder (2015) show that, although the correlations between different measures of media bias are positive, they are not huge. The correlations between the three main measures in Gans and Leigh are 0.41, 0.50, and 0.72. The correlation between the proposition-based measure in Puglisi and Snyder and a replication of Gentzkow and Shapiro's measure based on politically slanted language is just 0.43. Of course, these low correlations might be due to measurement error. But, since it is also likely that the measures weigh different issues differently, the low correlations might indicate that the underlying space is truly multidimensional.

[25] See, e.g., Abramowitz and Saunders (1998), Fiorina et al. (2005), Carsey and Layman (2006), and Poole and Rosenthal (1997, 2012).

[26] See, e.g., Benoit and Laver (2006), Hix et al. (2006), De La O and Rodden (2008), and Bakker et al. (2012).

15.3. FACTORS CORRELATED WITH BIAS

Having constructed an intuitive and replicable measure of media bias, it is natural to explore the determinants of this bias, or at least to identify variables that are significantly correlated with bias. The ideological stances of media outlets should be viewed as equilibrium phenomena, i.e., as outcomes of the interaction of demand-side and supply-side factors. Thus, our discussion is closely connected with Chapter 14, which focuses on the theoretical aspects of media bias.

15.3.1 Demand-Side Factors

Gentzkow and Shapiro (2010) show that their index of politically slanted language is positively and significantly correlated with the partisan leanings of the Zip codes where each newspaper is sold. To measure the partisan disposition of each Zip code, they use the relative amount of campaign donations given to Democratic and Republican candidates by the area's residents. They also find that the ideological positions of newspaper owners—measured using newspaper chains and political donations—matter much less than the ideological positions of readers. In particular, they show that after controlling for geographic factors and the Republican vote share in each newspaper's market area, there is "no evidence that two jointly owned newspapers have a more similar slant than two randomly chosen newspapers."[27]

Puglisi and Snyder (2011) show that newspapers circulating in Democratic areas give significantly more coverage to scandals involving local politicians that are Republican, relative to newspapers circulating in Republican areas. This result holds even after controlling for the ideological position of the supply side, as proxied by the average propensity to endorse Democratic or Republican politicians on the editorial page. In a similar vein, Larcinese et al. (2011) find that partisan coverage of the budget deficit is significantly correlated with the ideology of readers, with the expected sign: newspapers read by Democratic readers give more coverage to the deficit when it is high and the incumbent President is George W. Bush, than when the president is Bill Clinton, and vice versa in the case of low deficit.

15.3.2 Supply-Side Factors

The ideological positions of owners, editors, and journalists might also affect media bias. For example, Demsetz and Lehn (1985) argue that firms in the media sector offer an "amenity potential" to owners—owners might accept lower profits because they obtain personal gratification from owning the firms and can also impose their personal

[27] Gentzkow and Shapiro (2010, p. 58).

ideological views on the outlet's content.[28] Another argument is that media bias can emerge even in the case of profit-maximizing owners if politically biased journalists are willing to be paid less in exchange for the possibility of slanting content accordingly (Baron, 2006).

Larcinese et al. (2011) show that the partisan coverage of unemployment by US newspapers is significantly correlated with the average propensity to endorse Democratic vs. Republican candidates on editorial pages, even after controlling for the Democratic vote share in newspapers' market areas. They also provide an interesting case study of the *Los Angeles Times* and show that at least for this newspaper a change in the ideology of the publisher led to a rapid change in newspaper content. Until the early 1960s, the *LA Times* exhibited a strongly conservative and Republican stance that reflected the ideology of the owners (the Chandler family). In 1960, Otis Chandler became the publisher. He was much more liberal than his predecessors and this quickly affected the editorial pages—e.g., the distribution of endorsements in the newspaper shifted sharply away from Republicans and towards Democrats. Perhaps more surprisingly, Larcinese et al. (2011) also find an effect on news coverage. More specifically, they find that the prior pro-Republican agenda bias in the coverage of unemployment and inflation disappeared after Otis Chandler became publisher.[29]

Additional evidence in Ansolabehere et al. (2006) and Stanley and Niemi (2013) suggests that the *Los Angeles Times* is not a unique case. As noted above, Ansolabehere et al. (2006) find a large pro-Republican bias in the political endorsements made by many big-city newspapers during the 1940s and 1950s. On average, the newspapers in their sample were about twice as likely to endorse Republican candidates than Democratic candidates during this period, even though the voters living in these newspapers' market areas tended to favor Democratic candidates by about 56% to 44%.[30] In a similar vein, Stanley and Niemi (2013) report that in presidential elections over the period 1940–1988 the number of newspapers endorsing the Republican candidate was about five times the number that endorsed the Democratic candidate.[31] Voters, on the other hand, cast 53% of their votes for the Democratic candidates during this period, on

[28] The evidence they provide for this is indirect—they find that ownership concentration is significantly higher in media firms. They provide similar evidence for firms in the sports sector.

[29] To rule out demand-side shifts, the authors show that there was no significant increase in the Democratic vote in California during the period, i.e., the 1960s.

[30] The figure on Democratic voting is computed by taking the average of the two-party vote share in all races for president, governor, US Senate, and US House of Representatives in the counties where the newspapers in the Ansolabehere et al. (2006) study are located. It is possible that the newspapers studied were targeting the Republican consumers in these cities, but data from the *American National Election Studies* suggest otherwise. Pooling the 1956 and 1960 surveys, 154 respondents claimed to read one of the newspapers in the Ansolabehere et al. (2006) sample and also self-identified either as Democrats or Republicans. Just over 56% of these respondents identified as Democrats.

[31] Weighting the endorsements by circulation increases the pro-Republican bias.

average. These patterns suggest that many newspapers do not pander to their audience, at least on their editorial pages.[32]

15.3.3 The Role of Competition

The type and amount of competition in the relevant media markets might be systematically related to the size and direction of media bias.

If media bias is driven mainly by the ideological leaning of journalists and editors, then a more competitive media market is likely to mitigate the degree of media bias. A partisan newspaper enjoying a local monopoly (disregarding imperfect substitutes like TV news, radio news, and the Internet) can unabashedly disregard negative news involving politicians from its preferred party, e.g., political scandals. On the other hand, in the presence of competitors, each newspaper might decide to cover news that is bad to both sides. One reason is simply profits—if a newspaper does not cover attention-grabbing bad news then it risks losing readers, and revenue, to other newspapers that do. A newspaper may also cover bad news involving its preferred party for ideological motives. If it does not cover a potentially bad story, then it leaves the field wide open for newspapers with opposing political views to cover the story and frame it in the most negative way possible. So, the newspaper may prefer to cover the story, with a less negative frame, as part of a defensive strategy.[33]

In the model of confirmation-seeking readers by Mullainathan and Shleifer (2005), a monopolistic newspaper will position itself in the middle of the ideological spectrum of its market area.[34] On the other hand, in a duopoly situation the newspapers would locate on opposite sides of the middle, each carving out a part of the readership for itself. So, this model predicts that competition may increase the amount of "bias" (ideological differentiation) in media coverage.

The model of Bayesian news consumers by Gentzkow and Shapiro (2006) predicts the opposite.[35] In their model, increased competition tends to reduce the bias (increase the accuracy) of each newspaper. The reason is that with a larger number of media outlets

[32] Durante and Knight (2012) provide another case study that shows a "supply-side" effect of publicly owned media. They show that when the television news director of the largest government-owned station (TG1) was replaced with a director more ideologically close to the newly elected conservative prime minister (Silvio Berlusconi), the station's news content shifted significantly to the right. More specifically, compared to other private and public TV news programs, TG1 gave significantly more time to conservative politicians than it had before.

[33] See Gentzkow et al. (2006). Anderson and McLaren (2012) note how those mitigating effects might disappear if mergers dilute the effective amount of competition on the market.

[34] Gentzkow et al. (2015) classify this model of demand-driven bias within the category of "psychological utility" models.

[35] This is a "reputation" model of demand-driven bias, again according to the Gentzkow et al. (2015) classification.

readers will typically have access to follow-up stories that investigate the accuracy of prior stories (scoops). So newspapers *ex ante* face stronger incentives to report in an unbiased fashion.

To summarize, the simple supply-side model of Gentzkow et al. (2006) and the model of Gentzkow and Shapiro (2006) predict a negative relationship between competition and the degree of media bias, while Mullainathan and Shleifer (2005) predict a positive relationship.

Compared to the empirical literature on demand-driven and supply-led media bias, there are few econometric contributions about the effects of competition on equilibrium media bias. Puglisi and Snyder (2011) find a negative but statistically insignificant effect of competition on biased coverage of scandals. On the other hand (as noted above), in their historical analysis of scandal coverage Fonseca-Galvis et al. (2013) find that bias is significantly decreasing in the level of competition a newspaper faces. Finally, Gentzkow et al. (2011) deal with a different but related topic, i.e., the effects of competition in US local newspaper markets on electoral turnout, and provide robust evidence of positive but decreasing effects.[36]

15.4. BIAS AND VOTER BEHAVIOR

Does media bias affect voter behavior?[37] A number of studies attempt to determine whether media bias affects the political attitudes and decisions of the mass public. Since DellaVigna and Gentzkow (2010) provide a recent and thorough survey of this topic, we will be brief here.

Gerber et al. (2009) use an experimental approach to examine not whether media outlets are biased, but whether they influence political decisions and attitudes. They conduct a randomized controlled trial just prior to the November 2005 gubernatorial election in Virginia and randomly assign individuals in Northern Virginia to (a) a treatment group that receives a free subscription to the *Washington Post* (a relatively liberal newspaper), (b) a treatment group that receives a free subscription to the *Washington Times* (a relatively conservative newspaper), or (c) a control group. They find that individuals who were assigned to the *Washington Post* treatment group were 8 percentage

[36] The analysis of the effects of competition among information providers on "bias" is not confined to the study of mass media. For example, Hong and Kacperczyk (2010) test whether competition reduces reporting bias in the market for security analyst earnings forecasts. They show mergers of brokerage houses are positively correlated with optimism bias in reporting, which is consistent with the hypothesis that competition reduces bias.

[37] Media bias might also affect the behavior of politicians and other actors such as interest groups. We do not discuss this here.

points more likely to vote for the Democrat in the 2005 election, while those who were assigned the *Washington Times* were only 4 percentage points more likely to vote for the Democrat.[38]

DellaVigna and Kaplan (2007) use a natural experiment, exploiting the gradual introduction of Fox News in cable markets in order to estimate its impact on the vote share in presidential elections, between 1996 and 2000. They find that Republicans gained 0.4–0.7 percentage points in the towns which started to broadcast Fox News before 2000.

Knight and Chiang (2011) investigate the relationship between media bias and the influence of the media on voting in the context of newspaper endorsements. They study the largest 20 newspapers during the 2000 US presidential elections. They find that "surprising" endorsements—i.e., endorsements of the Republican candidate by Democratic-leaning newspapers and endorsements of the Democratic candidate by Republican-leaning newspapers—influence voters, but "predictable" endorsements do not. Other studies of endorsements include Robinson (1972, 1974), Erikson (1976), St. Dizier (1985), Kahn and Kenney (2002), and Ladd and Lenz (2009). To take one example, Ladd and Lenz (2009) study the effects of newspaper endorsements on voting in the United Kingdom, exploiting the fact that four newspapers changed their editorial stance between 1992 and 1997. The switch by the Murdoch-owned *Sun*, from strongly supporting the Conservative party in 1992 to explicitly endorsing Labour in 1997, was an especially big "surprise." They find evidence of media persuasion.

Of course, these papers do not isolate the effect of newspaper endorsements *per se*, because endorsements may be accompanied by other changes in behavior. For example, Kahn and Kenney (2002) find that the newspapers tend to give significantly more favorable coverage (in terms of tone) to the incumbents they endorse. Ladd and Lenz (2009) note that, in addition to endorsing Labour, the *Sun*'s overall coverage was critical of the incumbent Conservative prime minister (John Major) and favorable toward the Labour leader (Tony Blair). They state the identification issue clearly: "In exploiting changes by these papers, we capture both the effects of the editorial endorsement and changed slant in news coverage" (p. 396).

A final group consists of laboratory experiments. One seminal contribution (Iyengar et al., 1982) provides the first experimental evidence of a significant agenda-setting effect of TV news broadcasts on viewers' issue salience. A host of subsequent experimental studies, mainly in the communications and political science literatures, has yielded empirical support for various media effects, from agenda-setting to priming and framing effects. Iyengar and Simon (2000) provide a review of this literature. See also Jerit et al. (2013) for a comparison between a laboratory and a field experiment on media effects that were administered to the same subjects.

[38] The latter effect is not statistically significant at the 5% level. In addition, one cannot reject at the 5% level the null hypothesis that the two treatments have the same effect on the probability of voting Democrat.

15.5. CONCLUSIONS

In this chapter, we have surveyed and classified the empirical methods to measure the ideological/partisan position of media outlets. We have also looked at the determinants of those positions, and at the persuasive effects on readers and viewers.

Regarding the link between theoretical models of media bias and their empirical counterpart, we share with Gentzkow et al. (2015) the view that bias due to filtering is more pervasive than bias due to distortion. Interestingly, this is consistent with the idea—and the common wisdom—that media owners, editors, and journalists have "power" because they enjoy considerable discretion in the choice of what stories to cover.[39] This agenda-setting power would be much narrower if we lived in a world where distortion bias is the norm rather than filtering and selection.[40]

We conclude by noting some potential avenues for future research. First, the third strategy for estimating bias, measuring the tone of articles and editorials, is relatively underutilized in economics. The explosion in "big data" in the form of text—including the text of media outlets—may change this, by providing greater incentives for researchers to design techniques to measure tone in a robust and replicable manner. Second, almost all empirical studies of media bias are about one specific country during one specific and relatively short time period (Ansolabehere et al., 2006; Gentzkow et al., 2006, are exceptions). Cross-country comparisons, or within-country studies over long periods, are necessary to put the various estimates of media bias in a comparative perspective. Among other things, this could lead to comparative measures of the "pluralism" of media systems based on actual media content rather than subjective expert opinions. Third, more work on the determinants of bias is clearly needed, particularly regarding the role of competition among media outlets. The structure of media markets has changed rapidly in recent years as more and more people get news online. Finally, exploiting the network aspects of social media such as Twitter and Facebook may yield new approaches to measuring the ideological positions of media outlets relative to politicians and various groups of citizens.

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[39] There is some sound empirical evidence on the effects of this agenda-setting power: Eisensee and Strömberg (2007) find that the choice of news stories affects government policy.

[40] See McCombs and Shaw (1972) for more discussion of agenda-setting.

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