

# The TV Agenda-Setting Influence on Campaign 2000

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## **Abstract**

The argument of the agenda-setting hypothesis – that media influence what we think *about* rather than directly what we *think* – has been popular for a generation, both because of its promise of demonstrating important media effects and because it overcomes several methodological problems of integrating content analyses of media content with individual-level measures of media effects. In this project, we combine data from a year-long national study of voter involvement and an archive of TV news coverage of Campaign 2000. The data set is analyzed with a time-series technique to address the influence of TV news coverage on aspects of public involvement in the campaign. A small but important contribution of television news to public involvement is demonstrated.

# The TV Agenda-Setting Influence on Campaign 2000

## Introduction

A generation after it was formally introduced, „agenda-setting“ remains spectacularly popular, both as a specific middle-range social science theory of media influence on public opinion and as a general metaphor for the political influence of media. The idea that media coverage influences what we think *about* (if not directly what we think) has entered the standard lexicon of political science and politics as well as communication research. The phrase itself is at home in several languages and rarely requires translation.

Part of the appeal of agenda-setting was that it revived the idea that mass media were -- or could be -- powerful political influences. This was a refreshing change from several decades of "minimal effects" research, which argued that media, through a variety of selectivity mechanisms, mostly reinforced existing attitudes and behaviors. However, a second part of its appeal was methodological. Unlike traditional research designs, the original agenda-setting studies were able to link media content to behavior directly, to address the perennial chicken-or-egg problem of time order in media influence, and, finally, to measure media influence at an aggregate or social level rather than among individuals where evidence is hard to come by. In this study, we extend the study of mass media agenda-setting influence by combining (we believe) innovative data sources and (we hope) imaginative application of statistical procedures. The study uses (1) aggregate-level data (2) assembled from existing sources and (3) time-series techniques of analysis to assess the influence of TV coverage on public interest in the 2000 presidential campaign in the United States.

## Extending Agenda-Setting

The original agenda-setting studies were among the first to link media content and effects directly over time. It did this by aggregating the results of both the public opinion surveys and content analysis and incorporating them into a single data set (McCombs and Shaw 1972; Shaw and McCombs 1974).

Each of the "issues" considered salient at the time was assigned a rank based on relative frequency of coverage in the media and relative „importance“ attached to it by respondents in the surveys. Each issue became a separate unit of analysis and included only these variables. The result was a remarkably small data set: typically five to nine cases and four variables, the media agenda at  $T_1$  and  $T_2$  and the public agenda at  $T_1$  and  $T_2$ . Although various media were often assessed separately, the basic hypothesis was examined with a data set that looked like Graphic 1.

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Insert Figure 1 about here  
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McCombs and Shaw first calculated the strength of the correlation between the media agenda at  $T_1$  and the public agenda at  $T_2$ . This was compared with the alternative hypothesis that media reflect rather than influence the public agenda – public agenda at  $T_1 \rightarrow$  media agenda at  $T_2$  – and with an expected correlation calculated from the correlations at the periphery of the model. Their argument was that the hypothesis was supported if the agenda-setting cross-lagged correlation exceeded the other cross-lagged correlation and the expected correlation. In other words, media effects on public opinion ( $A \rightarrow B$ ) could be inferred if  $A \rightarrow B$  was greater than  $B \rightarrow A$  and greater than the expected correlation given all of the correlations among A and B at different times.

The high correlation of the agenda-setting cross-lag -- .51 in the Charlotte study -- and the astoundingly high synchronous correlation of .97 in the original Chapel Hill study attracted an

immediate following, although two cautions are in order. One is that with a small number of cases (issues) – five in the first study, seven in the Charlotte study – a near-perfect correlation is required for even statistical significance. Another is that the model can also be tested with a simple path analysis technique, which deals more adequately with strong intercorrelations among the variables. When it is – and the appropriate paths of media agenda at  $T_2$  to public agenda at  $T_2$  and public agenda at  $T_1$  to public agenda at  $T_2$  are controlled -- the key agenda-setting path drops dramatically, often to non-significance. The measurement model is shown in Graphic 2.

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Insert Figure 2 about here  
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The basic ideas behind agenda-setting – aggregate-level measurement, integration of survey and content analysis data, repeated measures over time – were incorporated into a number of key studies that allowed researchers to address questions of media influence in new ways. One of the first was a major study at the University of Mainz of the influence of the tone of media coverage on public perceptions of Helmut Kohl (Kepplinger et al. 1989). In the United States, studies adopted the Mainz technique to assess coverage of AIDS (Rogers et al 1991), President Reagan’s war on drugs (Gonzenbach 1995), and charges of a media-induced economic recession (Wu et al. 2002). All of these studies extended the original agenda-setting model by making repeated measures of media content and public opinion over time, and many of the American studies incorporated some kind of computer-assisted content analysis to avoid the drudgery of traditional content analysis.

By incorporating repeated measures of the key variables, the power of various time-series statistics can be called on to investigate the dynamics of media influence. Time-series, largely borrowed from business and economics, involves more a logic of data analysis than application of a simple statistical test. Our study of the agenda-setting effects of TV news coverage of

Campaign 2000 represents an application of the cumulative experience of agenda-setting studies and, we believe, an extension of both the basic hypothesis and methods of studying it.

### **"The Vanishing Voter"**

The „Vanishing Voter“ project was a year-long activity of the Joan Shorenstein Center on the Press, Politics and Public Policy at Harvard University. It derived from the low – and probably declining – level of voting in the United States and the associated assumption that this loss of individual engagement in all phases of elections – possibly a unique element of American politics although the trend is not limited to the United States – represents a threat to the future of the democracy. The project, funded by the Pew Charitable Trusts, included a weekly survey of about 1,000 Americans from mid-November, 1999, past the contested presidential election in November, 2000, to mid-December. The core of the survey included four questions that are combined to form a single index of voter involvement.

The four questions ask whether respondents are paying close attention to the campaign and whether they have thought, talked, or seen a news story about it in the past day. The composite measure is the simple average of the four items. Interviewing was carried out from Wednesday through Sunday of each week; results were posted weekly to the project website.

### **Vanderbilt TV Archive**

Since 1968, the Vanderbilt University TV News Archive has collected and cataloged videotapes of the early evening newscasts of the three commercial television networks in the United States. In later years, material from Cable News Network (CNN) and additional public affairs programming have been added to the archive. Our project focused on the three commercial network newscasts because the CNN archive was incomplete and inconsistent.

The archive includes an abstract of each evening newscast that is available in searchable form on the internet (<http://tvnews.vanderbilt.edu>). The abstract consists of timing information of each story with a brief summary of content and reporting details. Most stories related to the presidential campaign were tagged „Campaign 2000.“

## **Method**

We decided to merge these two sources of information about the year-long presidential campaign to investigate agenda-setting in a long-term, aggregate-level analysis of the links between coverage in a major – perhaps decisive – news medium and direct cognitive effects. The data set looks a lot like a complex extension of the original agenda-setting study but with key differences:

**Unit of analysis.** Each case is a week, starting with the week ending November 14, 1999. Eventually there were 58 cases, enough for most time-series statistics. Variables in the data set included the total number of seconds devoted to the campaign on each network during that week along with results of the Vanishing Voter poll for the same week.

**Content variables.** The content analysis of TV news was carried out originally simply<sup>1</sup> by searching the Vanderbilt archive for stories tagged with „Campaign 2000“ and adding together the total times in seconds for each network for each week. Eventually we replaced the automatic analysis with a manual search of the entire year's archive when we found enough errors in the automatic search to make the results suspect.

**Agenda-setting variables.** One problem of the kind of study described here is the necessity of using data that others have collected. The data may or may not fit the current project. In this case, the questions included in the Vanishing Voter project came very close to capturing the specific definition of agenda-setting – telling us what to think about – and related

behaviors. The specific variables also permit an examination of the complex cognitive processes associated with media studies – whether, for example, paying attention to the campaign leads to thinking about it and then to discussing it, or whether paying attention is a product of thinking and discussing. That kind of aggregate-level analysis of cognitive processes will be left for later analysis. Our interest here is to consider the influence of TV coverage on agenda-setting-like behaviors from the early stage of the presidential campaign to the final unprecedented outcome several weeks after the popular vote.

## **Results**

Table 1 shows the simple zero-order correlations among the components of the Voter Involvement Index, the summary index itself, and the coverage of the campaign on network television news. All are reassuringly high, well above the minimal correlations found in most individual-level studies and within the range of previous aggregate-level agenda-setting studies. The course of the campaign, shown in Graph 1, documents the fluctuations of campaign activity that are familiar to even a casual observer of American presidential politics.

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Insert Table 1 and Graph 1 about here  
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Both the Voter Involvement Index and the weekly sum of network coverage of Campaign 2000 show relatively little strength in November when potential candidates typically call press conferences to announce that they are thinking about running and then call more press conferences to announce that they may or may not have made up their minds. Journalists, meanwhile, tend to concentrate on the old game of handicapping various candidates and indulging in the old pastime of trying to predict the winner of the campaign a year before the election.



The first wave of relatively high voter interest and TV coverage peaks during a series of early state votes (the famous Iowa caucuses, New Hampshire primary, and "Super Tuesday") when most of the delegates to the nominating conventions are selected and outcomes are determined. Understandably, interest drops when most of the candidates are eliminated or drop out and doesn't pick up again until after the party conventions and the start of the real campaign between the two major parties. The conventions themselves, staged at middle of a traditionally news-poor summer, are more of a coronation of each party's candidate than the final stretch of a tight race. Some interest is aroused. We expect a big surge in both coverage and voter interest when the serious part of the campaign begins. This rises to its peak as the campaign reaches its climax on election day, surely spurred in 2000 by a close campaign with an uncertain outcome. The unusual element of the 2000 election was that speculation on its outcome did not end on election day, as shown by the data points after the early November election.

Clearly both measures rise and fall together, that is, they are highly correlated ( $r=+.89$ ), but high correlations can be deceptive. Whether one leads the other is the important question. The three possibilities are: (1) TV news coverage contributes to voter involvement over the course of the long campaign (making TV a molder of public opinion); (2) voter involvement leads to media attention (making television a mirror of public opinion); (3) both factors are driven by a third force outside the model, such as the campaign itself.

At this point, one must decide on a general strategy of sorting out the relationships between TV coverage and agenda-setting effects with the kind of data set we have assembled. A number of alternatives are available that incorporate different assumptions about the nature of long-term causal influence and require different kinds of data. We have chosen Granger Causality (Granger 1969, Sims 1972) ) because it is relatively simple and relies on assumptions that generally apply to media studies. It has been applied to international relations and trade

issues (Freeman 1983, Reuveny and Kang 1996) and in a very limited number of media studies. The main assumption of Granger Causality is that a variable over time is influenced by two factors: itself in immediately preceding time periods (auto-correlation) plus the causal factor at the same time periods. Since auto-correlation is always a major component of time-series analysis – the value of almost anything tomorrow is most closely related to its value today and yesterday – it must be a part of any analysis. Granger assumes that the effect of auto-correlation is immediate and direct and is usually measured over the two time periods preceding each time period. The influence of the causal or independent variable is measured at the same two preceding time periods after controlling for auto-correlation.

The formulas used to calculate Granger Causality look like this:

$$\text{Equation 1: } \hat{Y} = [Y_{t-1} + Y_{t-2}]$$

$$\text{Equation 2: } \hat{Y} = [Y_{t-1} + Y_{t-2}] + [X_{t-1} + X_{t-2}]$$

where  $\hat{Y}$  is the predicted value of each dependent variable (measure of voter involvement) at each time period given its value in the two preceding weeks and  $X$  is the value of the independent variable (TV coverage) in the same two preceding weeks. The percentage of variance explained in the dependent variable ( $R^2$ ) is calculated for both equations; the difference between Equation 1 and Equation 2 is considered the influence of  $X$  on  $Y^2$ .

The influence of network TV coverage of Campaign 2000 on *paying attention* to the campaign, on *thinking* about it, on *discussing* it, and on *remembering* news about it is shown in Table 3. The effect is, in fact, probably larger than is indicated by the differences between the two  $R^2$ 's because the multiple regression procedure corrects for both the number of cases and the number of variables in the equation. In these analyses, the number of cases is relatively small (58) and the number of variables in the second equation (4) relatively large. The estimate of TV influence is conservative.

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Table 2 about here  
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## **Discussion**

At this point, some relief from the concentration on data, statistics, and graphs is appropriate. What have we done, and what do the results tell us? First, it is important to remember that we have looked at two variables that clearly are correlated. Week by week over the long campaign season, voter attention to the campaign and TV news coverage rise and fall together. The variables are also strongly correlated with themselves over time, which is the key of time-series analysis. In this analysis, we have removed the influence of the autocorrelation -- the influence of the amount of voter involvement last week and this week on the level of involvement next week. Then we have estimated the influence of network television news coverage last week and this week on next week's level of voter involvement in Campaign 2000.

For each of the components of Harvard's scale of public involvement -- thinking about the campaign, discussing it, paying attention to it, and remembering news about it -- TV coverage one and two weeks earlier contributed substantially to explaining the variance in public involvement. On the whole, 3-6% of the variance in public involvement over the period from November, 1999, to about one month after the election a year later could be explained by the level of TV news coverage one and two weeks earlier. The specific components of the voter involvement measure are consistent at 3% variance explained except for remembering a news story. This is probably a product of two factors. One is that the link between news coverage and remembering the news is more direct than thinking about or discussing the campaign. The second is that the autocorrelation in the remembering variable is lower than in the others, leaving more variance to be explained by the second variable in the equation.

The range of variance explained -- probably conservative estimates -- is less than the amount reported in most agenda-setting studies but more than in most individual-level studies. Most individual-level surveys, as has been noted, produce minimal associations that are seldom convincing evidence of media influence on public opinion. And the clever methodology of the classic agenda-setting studies, while producing breathtakingly high correlations, relies on a handful of cases that produce unstable results. Here there is solid evidence from the real world over a reasonably long period of time of some influence of TV coverage on the way the public responds to a familiar ritual (but crucial element) of self-government.

Is the estimate of TV influence big or small? It should be noted that small real-world changes can have big impacts. A shift of a few percent of voters can transform the distribution of national political power, and even the smallest changes in the economy can produce profound aggregate effects around the world. If the outcome of an election is a product of many factors -- candidates, campaign strategies, the state of the economy and the world -- then a tiny nudge in one direction or the other from media coverage could tip the balance in favor of one candidate or the other.

The study does not tell us whether TV coverage was good or bad, fair or biased, helpful or irrelevant to the public. Nor does it tell us directly whether the public's competence to select, first, party candidates, then the President himself, is adequate or inadequate, enhanced or dulled by the day-to-day attention paid to the campaign by *an* important -- perhaps *the* most important -- source of information. But then, the agenda-setting hypothesis did not address these issues either, and at least by implication, the hypothesis argues that the media may not be powerful in changing opinions about who should be the parties' nominees and even who should be elected. It is enough to show, as we believe we have done here that television contributes in an important way to the political process.

A final caution. An important assumption of time-series analysis is that error (unmeasured) variances are uncorrelated. That means we assume that nothing outside the model -- "reality," for example -- is driving both the independent and dependent variables. If some measure of the real world can be included in the model -- the rate of unemployment or economic growth, number of AIDS cases, amount of illegal drugs seized, for example -- we can address the possibility that both media attention and public response are reactions to events outside the control of both. In election campaigns, there is no measurable "reality," but it is a perfectly good argument that the campaign itself -- however the reality of it could be measured -- rises and falls with an independent force that drives both news coverage and public response. The main reason for increases and decreases of both news coverage and voter involvement is the sequence of events in the campaign itself, which drives both factors. The part of the picture of American democracy in action we can observe here is important, but it is only part of the picture. And the most important part -- the part played by political parties and candidates independently of the media and of public opinion -- remains outside the model.

## **Conclusions**

This study is a report on new ways of assessing the agenda-setting influence of television on public opinion. To say that we have found evidence of agenda-setting is to repeat what hundreds of previous studies have proved, claimed, or hypothesized. We have, we believe, found evidence to support the basic hypothesis with new data and new techniques of analysis. And we have found plausible levels of correlations that are comfortably between the weak, nearly undetectable correlations of individual-level cross-sectional surveys and the suspiciously large correlations of the original agenda-setting model that relies on a handful of cases measured over a very limited period of time.

The limitations of the study -- and of this approach to agenda-setting -- are mostly in the data. We have to rely on archives that were often established for other purposes, but the libraries of social indicator data are growing rapidly and a number of key measures -- public perceptions of the economy, leaders' job performance, important social problems, among them -- are now available in many countries for long enough periods that time-series analysis is possible.

Computer-assisted content analysis of electronic media archives spares us most of the drudgery of traditional content analysis, although searchable archives of TV news are still rare, and any automated analysis is likely to be superficial and possibly misleading.

The potential for insights into the role of the media is expanded, however, and the clever use of new resources and new methods of analysis open up a new way of looking at the influence of a powerful medium in one of the world's great exercises in self-government.

## **Biographical notes**

Stevenson is Kenan Professor of Journalism and Mass Communication at the University of North Carolina at Chapel Hill. Böhme and Nickel are students in the Institut für Kommunikationswissenschaft, Technische Universität Dresden where Stevenson was DAAD visiting professor during the 1999-2000 academic year. The study began as a seminar project in Dresden in the summer of 2000. An early version was presented to a regional conference of the World Association for Public Opinion Research (WAPOR), meeting in Pamplona, Spain, November 2000.

Figure 1. The agenda-setting data matrix.

	Media $T-1$	Media $T-2$	Public $T-1$	Public $T-2$
Issue $_1$				
Issue $_2$				
Issue $_3$				
Issue $_n$				

Figure 2. The agenda-setting measurement model.

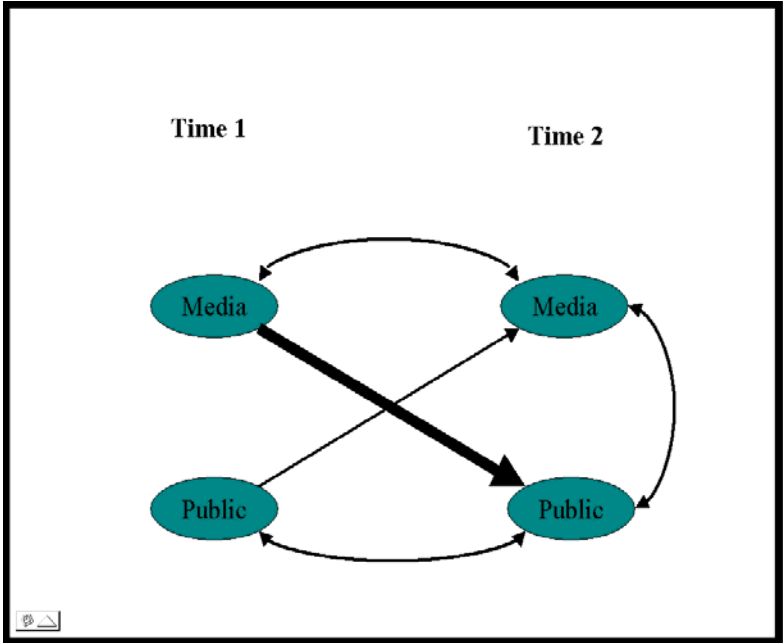




Table 1. Zero-order correlations of key variables.

	News	Talk	Think	Index	TVNews
Attention	.861	.945	.917	.965	.851
News		.902	.894	.931	.900
Talk			.923	.967	.890
Think				.968	.827
Index					.886

Graph 1. Influence of TV news on voter involvement in Campaign 2002.

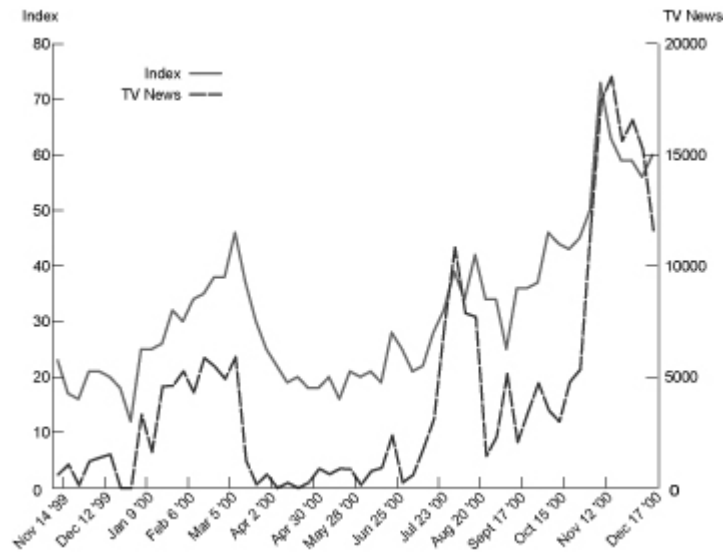


Table 2. TV agenda-setting influences on Campaign 2000.

TV influence composite index of voter involvement.

AUTOCORRELATION	$R^2=.81$	MEDIA EFFECT:
Autocorr + Television	$R^2=.84$	3%

TV influence on *thinking* about campaign.

AUTOCORRELATION	$R^2=.74$	MEDIA EFFECT:
Autocorr + Television	$R^2=.77$	3%

TV influence on *discussing* campaign.

AUTOCORRELATION	$R^2=.81$	MEDIA EFFECT:
Autocorr + Television	$R^2=.84$	3%

TV influence on *remembering* news about the campaign.

AUTOCORRELATION	$R^2=.66$	MEDIA EFFECT:
Autocorr + Television	$R^2=.72$	6%

TV influence on *paying attention* to campaign.

AUTOCORRELATION	$R^2=.78$	MEDIA EFFECT:
Autocorr + Television	$R^2=.82$	4%

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## Notes

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<sup>1</sup> In practice, this is not so simple. Credit for writing the program to accomplish and preparing the data set goes to Rainer Böhme.

<sup>2</sup> The calculations are simple. Most statistical programs have procedures to create lagged variables. One then computes a multiple regression equation with the dependent variable (here, voter involvement) as the dependent variable and its two immediate lags as the independent variable. For the second equation, the two lagged variables are entered as the first step of a hierarchical regression and the two lags of the true independent variable (here, television news coverage) as the second step.