

## Viewer Characteristics and Agenda Setting by Television News

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DURING the recent past a fragile consensus has emerged among researchers which holds that television news programs can influence the relative salience of political issues in the minds of the American public—that is, that they are capable of setting the public agenda (Erbring, et al., 1980; Graber, 1980: 132ff; Iyengar, et al., 1982; MacKuen, 1981: 19-29; and McCombs, 1981). Generally, however, there have been few efforts to redress a problem noted by Iyengar (1979: 398), that "most previous agenda-setting studies . . . document the congruence between media content and issue salience without attempting to identify variables which strengthen or weaken the relationship . . . ." The research reported in this article responds directly to this criticism by examining the impact of viewer characteristics and modes of news exposure on the agenda-setting effects of television news.

Studies of television news recall and comprehension point to several factors that may influence the agenda-setting process. According to this

**Abstract** Most previous studies of agenda setting by television news have failed to consider factors that might strengthen or weaken agenda-setting effects. Drawing on the findings of news recall and comprehension research, this investigation of survey data gathered from 1204 national news viewers identifies several characteristics of viewers and viewing traits that increase the agenda-setting influence of news programs. The analysis suggests that effects are greater when viewers have prior awareness of news topics through print media exposure or have some college education. Watching news programs in color and attentively also contributes to increases in agenda setting.

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body of research, the recall and comprehension of television news is affected by (1) factors controlled by broadcasters, and (2) behavioral traits of the television news audience. Research into broadcaster-controlled factors has produced a plethora of contradictory findings regarding the efficacy of different methods of news presentation designed to foster viewer recall and learning. There seems to be agreement only that recall is enhanced whenever television viewers are more attentive to newscasts, but there is almost no consensus on how broadcasters can use various audio and video techniques to promote attentiveness (Stauffer, et al., 1983: 29-30; Woodall, et al., 1983).

Research into audience behavior and its bearing on news recall has produced significantly more promising results. There appears to be substantial evidence that the ability to recall news items is influenced by, among other factors: (1) viewers' motivations for viewing, whether for information gathering, diversion, or some combination of both; (2) viewers' prior levels of knowledge about the topic of a particular news item, or their interest in it; (3) viewers' attentiveness to the audio and video components of television news, especially when the two interact in some complementary fashion; and (4) the extent to which viewers plan in advance their exposure to news broadcasts (Graber, 1980: 134-44; Woodall, et al., 1983; Stauffer, et al., 1983; and Gantz, 1978).

Viewer characteristics and the manner of exposure to news programs should also influence agenda setting inasmuch as it is reasonable to assume that remembering and understanding the news precede the changes in attitudes that are inherent in conceptualizations of the agenda-setting process. If viewers' prior knowledge, motivations, and watching habits affect the recall of news items, then it seems plausible that these same factors should have some bearing on the process whereby viewers' issue agendas are established and modified.

### Data

The data analyzed here were gathered as part of a larger study of the public's use of television. The methodology of that study is described in substantial detail by the co-principal investigators in their own report of their findings (Frank and Greenberg, 1980).<sup>1</sup> Study participants were interviewed between late 1977 and early 1978 and asked to complete an extended recall diary of all television viewing, on a program-by-program basis, for the fortnight prior to the interview. Thus the data consist of self-reports of the number of times, if any, that respondents watched

<sup>1</sup> In addition to describing the sampling and interviewing procedures, this volume includes a complete copy of the various questionnaires used.

national news programs during a two-week period. Furthermore, for each program watched during that period, respondents were asked to report on several traits of their viewing (e.g., attentiveness), again on a program-by-program basis. Finally, separate from the viewing diary portion of the study, respondents were asked more general questions about their attitudes toward television and other matters, including a series of items assessing interest in various news and public affairs issues.

Data reported here are based on interviews with 1204 adult research subjects whose viewing diaries indicated that they had watched a national news program on at least one occasion during the two-week reporting period.

### Hypotheses

We hypothesize that the agenda-setting power of television news will be influenced by several viewer characteristics and viewing traits. The first of these is the presence of a color television in the household. Because most news programs utilize color pictures and graphics to illustrate the news, and because some aspects of video are thought to enhance the recall of news items (Woodall, et al., 1983), we expect agenda setting to be stronger when news is viewed in color.

A second group of factors is related to how news watchers describe their own watching behavior. We predict greater agenda effects when: (1) viewers give the news their full attention without doing anything else at the same time; (2) viewers make a unilateral decision to watch the news (rather than watching after another member of the household chooses to watch the news); (3) viewers plan in advance to watch the news; and (4) viewers watch the news alone, not in the presence of others. Each of these expectations is consistent with notions that media effects are likely to be greatest when viewers actively seek out a program and watch it without distraction.

Other potentially important factors in news exposure are related to viewers' more general orientations toward television. We hypothesize that viewers who perceive television as informative are more likely to have their agendas affected by television news exposure. When television viewing is associated with relaxation or escapist motivations, we predict reduced agenda-setting effects. While recreational viewing of television news may stimulate agenda setting on occasion, we would generally expect such exposure to be ineffectual. Collectively, these hypotheses reflect the expectation that agenda setting is apt to occur most strongly among viewers who perceive television to be a credible source of desired information and who use television to fulfill information-seeking goals. Conversely, we expect reduced agenda-setting effects when television

viewing becomes a means of unwinding after work or is a vehicle for escaping from the cares of life.

Finally, prior research on learning from news exposure leads us to expect that prior awareness of news topics promotes agenda setting. While the present survey did not ascertain preexisting knowledge of specific news topics, it did measure formal educational attainment and exposure to print media news, including newspapers and the major weekly news magazines (*Newsweek*, *Time*, and *U.S. News and World Report*). Because exposure to college-level studies or to print news should have increased individuals' knowledge of the various topics discussed in news broadcasts, we hypothesize increased agenda-setting effects among respondents with some college education and those who reported reading the news sections of a daily newspaper or who subscribed to a major news magazine. Knowledge of news topics gained through education or reading is likely to promote a form of attentiveness and comprehension that enhances the agenda-setting influence of broadcasters.

### Analysis of Agenda Setting

The methodology used here to measure and evaluate agenda setting is similar to that reported in other cross-sectional studies of the phenomenon.<sup>2</sup> The content of news programming prior to the interviews was content analyzed, and news topics were rank-ordered to establish the media agenda. This media agenda was then compared with the rank-ordered personal issue agendas of news watchers. Unlike many other studies that have measured personal agendas only in the aggregate, the survey data utilized here make it possible to compare media agendas with individual-level as well as aggregate personal agendas.

The measurement of the media's agenda was constrained to some extent by the individual issue salience questions. The latter were fixed choice items that asked respondents to rank (on a four-point scale from "extremely interested" to "not interested at all") their interest in 59 political and social issue topics. The Vanderbilt Abstracts of the three national network news programs (ABC, CBS, and NBC) were consulted to determine the number of news stories that made mention of each issue topic during the two weeks prior to the first interview day and throughout the remainder of the interviewing time frame. Only 20 of the 59 issue topics received substantial and consistent coverage during the time pe-

<sup>2</sup> McCombs (1981) has written the most sophisticated review of various methodologies used to explore agenda setting.

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established using the four-point scale of interest in each social and political issue. The use of a four-point scale necessarily created numerous tied rankings of issue salience, a somewhat undesirable artifact of the fixed-choice question format as a means of assessing relative issue salience.<sup>5</sup> For example, if a respondent rated 2 of the 20 issues as ones in which he or she is "extremely interested," then those two issues would be assigned a tied ranking of 1.5 out of 20. Other ties were assigned numerical rank values by standard rank-ordering procedures (see Garson, 1976: 328-32). The media agenda for the 20 issues was then correlated with each individual-level personal agenda (and with the aggregate personal agenda where appropriate). The coefficients (values of Kendall's tau) resulting from these individual-level correlations will be referred to as the *agenda-setting score* for each respondent. The mean agenda-setting score for all news viewers was  $-.10$ , indicating a weakly negative relationship between the media and individual agendas. Thus, *among news viewers as a whole*, agenda setting is not confirmed by either the aggregate or individual analyses. It is possible, however, that agenda setting is more evident among news viewers with the characteristics and viewing habits described by the hypotheses stated previously.

First-order correlations between the individual level agenda-setting scores and viewer characteristics also produced values that are generally very small. The coefficients range from a null value (for watching alone) to .19 (for persons who are exposed to print news). The small magnitude of these correlations, along with the poor fit observed in the aggregate and individual level data, could be taken as evidence that agenda setting is not occurring, no matter what the nature of viewers' exposure to news programs. Such a conclusion would be unnecessarily pessimistic, however. In part, the small size of these correlations can probably be explained by research design constraints. A review of previous research suggests that cross-sectional studies such as this one reveal weaker effects than longitudinal studies. And by focusing on a set of 20 issues, rather than on a single issue (or two or three), the odds of achieving a mirror image relationship between media and personal agendas is significantly reduced. Furthermore, the measure of individual-level agendas is based on very elementary survey data which are likely to introduce a fair amount of "noise" into the analysis.<sup>6</sup> Therefore, we proceed with the

<sup>5</sup> Clearly, the many tied ranks of issue salience do not reflect respondents' real attitudes. For example, most respondents would be able to differentiate their levels of interest in each of the issue topics in which they were forced to report being "extremely interested." By assigning all such issues the same ranking, a substantial amount of measurement precision is lost.

<sup>6</sup> Each of these problems associated with cross-sectional survey approaches to agenda setting has been observed by others, including MacKuen (1981: 22), Erbring, et al. (1981: 17-21), and Bishop (1981: 649ff).

period investigated.<sup>3</sup> These 20 issues, shown in Table 1 with the number of news stories in which each topic was mentioned, were then rank-ordered from highest to lowest on the media agenda.

*Aggregate personal agendas* were determined by calculating the percentage of the sample that reported the highest level of interest ("extremely interested") in each social and political issue.<sup>4</sup> The issues were then rank-ordered according to those percentages to create the aggregate personal agenda. These rank orders are presented in Table 1. A comparison of the media agenda and personal agendas reveals only a weak relationship between the two. Of the 10 issues given most attention by the media, only three rank in the top half of the public's agenda. A similar pattern of weak correlation was observed in the individual-level analysis. *Individual-level personal agendas* and their rankings were

Table 1. National News Program and Aggregate Personal Agendas

	Number of Stories	Aggregate Personal Agenda Ranking
Conflict in the Middle East	729	(15)
National economy	696	(7)
National unemployment	330	(8)
Sources and uses of energy	309	(5)
The stock market	235	(18)
Air transportation (planes, jets, etc.)	202	(17)
Agriculture and farming	140	(13)
Foreign policy	127	(19)
Labor unions in the U.S.	125	(12)
Medical sciences (anatomy, physiology, etc.)	124	(10)
Education and schools	113	(1)
Arms race	101	(14)
Space travel	101	(16)
Balance of trade	65	(20)
Managing money (finances, taxes, etc.)	56	(2)
Women's rights/roles	49	(9)
Problems of drug abuse	42	(4)
Health and nutrition	29	(6)
Causes and prevention of crime	20	(3)
Rights of minority groups	7	(11)

<sup>3</sup> The issue content of the national news programs was analyzed within every two-week period between September 15, 1977 and January 7, 1978. Issues that received heavy coverage during some blocks of time, but little or no coverage during other times, were excluded from the analysis. This technique has the advantage of tapping longer-term issue agendas of the media.

<sup>4</sup> Personal agendas are often measured by items that assess the perceived importance of various issues rather than the interest generated by these issues. While in many instances we would expect respondents to attach importance to interesting issues and vice versa, these two dimensions of issue salience (perceived importance and interest) are not likely to coincide for all issues. Because this study focuses on the interest dimension alone, the results reported may not generalize to the importance dimension of issue salience.

analysis assuming that the actual extent of agenda setting is underestimated here. And because the *fundamental purpose of this research is to identify contingent conditions that affect agenda setting the most*, not to measure the precise dimensions of the phenomenon, the actual magnitude of agenda setting discovered here is relatively unimportant.

A comparison of the bivariate correlations between the agenda-setting scores and the independent variables indicates that the most important viewer characteristics are prior exposure to news topics, i.e., print media exposure ( $r = .19$ ), some college education (.16), the presence of a color television in the household (.12), giving undivided attention to news programs (.12), choosing unilaterally to watch the news (.11), and planning in advance to watch the news (.10). Two other factors proved to be of slightly less importance: viewers' belief that television is informative (.07), and the fact that viewers frequently watched television with the intent of relaxing or escaping from everyday cares (-.07). The latter variable, as hypothesized, was negatively related to agenda setting. Watching news programs alone was unrelated (-.00) to agenda setting.

The relative importance of educational attainment and print media exposure suggests strongly that general news awareness influences the agenda-setting process. News awareness doubtless stimulates an attentiveness and a sensitivity to news items that does not occur among the less informed.<sup>7</sup> In short, the news-rich become richer while the news-poor lag behind. News awareness also facilitates superior comprehension and understanding of the news which, in turn, may affect the process of agenda setting.

While we hypothesized that viewing the news in color should enhance agenda setting, the relative strength of this variable, vis-a-vis the other independent variables, is surprising on account of the unpredictable effects of broadcaster-controlled factors in determining viewer recall of the news. Because a color presentation of the news involves some of the same variables manipulated by broadcasters (i.e., use of pictures versus "talking heads," spatial placement of image on the screen, use of film versus videotape, etc.) with inconsistent results, the impact of color television was not assured. This variable is also suspect in that the presence or absence of a color television in the household may simply reflect social status variations. This is particularly critical if the better educated are more likely to have color television, thus creating a spurious relationship between color viewing and agenda setting. The partial correlation between color viewing and individual agenda-setting scores, control-

<sup>7</sup> The most often cited research to this effect is by Tichenor, et al. (1971). Their research indicates that the better informed about public affairs are apt to be more attentive to the media and as a consequence are more likely to be affected by it.

ing for the effect of education, was .11, as compared with an uncontrolled coefficient of .14. Thus, the effect of color television is explained partially by the slightly greater incidence of color viewing by the college educated. Because the bivariate analyses show that no single characteristic of newsviewing can unilaterally explain substantial variation in agenda setting, it is desirable to develop a multivariate model which combines the effects of several viewer characteristics in order to evaluate their collective impact on agenda setting. Multiple regression analysis was performed in order to determine the effect on agenda setting of various combinations of contingent conditions. A measure of the quantity of exposure (the number of times respondents watched a national news program during the prior two weeks) also was introduced into the analysis in order to determine whether quantity of exposure is as important a contingent condition as viewer characteristics and viewing traits.

Regression of viewing frequency and viewer trait variables on individual agenda-setting scores was conducted by a stepwise technique known as "maximum  $R^2$  improvement." This method calculates all possible regressions of the independent variables on the dependent variable in order to find the strongest one-variable model, strongest two-variable model, and so forth, until a maximum solution is achieved.<sup>8</sup> Using this technique, we generated 10 different models of agenda setting. A "best" model was selected by taking the model with the fewest variables whose explanatory power ( $R^2$ ) was not appreciably increased by the addition of additional independent variables. The six-variable model was judged best by these criteria. The addition of the remaining variables made almost no further contribution to explaining agenda setting.

Results of the regression analysis for the best model and the full 10-variable model are presented in Table 2. The small values of the coefficients doubtless reflect the same difficulties discussed earlier regarding the cross-sectional nature of the analysis and the level at which the indicators are measured. As we observed above, however, our major concern here is the comparative magnitude of the coefficients, not the absolute values. The results of the multivariate analysis add little substantive explanation to that provided by the simple bivariate correlations. The best model of agenda setting includes the four variables that were strongest in the bivariate analysis.

The most important result of the multivariate analysis has to do with quantity of news exposure. The regression exercise suggests that the frequency of exposure by news viewers is much less important than the characteristics of viewers and their viewing habits. All nine viewer characteristic variables outrank quantity of exposure as a predictor of

<sup>8</sup> The analysis was performed with the Statistical Analysis System (SAS).

Table 2. Results of Multiple Regression on Individual Agenda Setting Scores

	Best 6 Variable Model		Full 10 Variable Model	
	b	Beta	b	Beta
Intercept	-.14		-.18	
Print media exposure	.07*	.15	.06*	
Full attention given to news programs	.06*	.14	.04*	
College education	.04*	.10	.03*	
Color TV in household	.02*	.08	.02*	
TV judged informative	.01*	.08	.01*	
Relaxation/escape motivation for viewing TV	-.01*	-.07	-.01*	
R chose news programs			.03*	
Plans viewing of news programs			.02	
Watches news programs alone			-.02	
Frequency of news viewing			.01	
				R <sup>2</sup> = .08

\* F significant at .01.

agenda setting. In order to evaluate this finding further, the six "best model" viewer characteristic variables and frequency of exposure were regressed together on the absolute level of interest in each of the 20 issues ranked highest on the agenda of television news, i.e., 20 separate regression analyses with 7 independent variables in each. In every single instance, frequency of exposure to national news programs failed to be a significant positive predictor of interest in the news topic. In 10 of the resulting equations, frequency of exposure was negatively related to interest in the topic. These were not significant, however. Results of 2 of the 20 regression analyses are presented in Table 3 for illustrative pur-

Table 3. Results of Regression on Interest in the Middle East and the National Economy

	Middle East—Beta		National Economy—Beta	
	Beta	b	Beta	b
Print media exposure	.18*		.18*	
College education	.16*		.13*	
Full attention given to news programs	.10*		.09*	
Frequency of news viewing	.04		.00	
Color TV in household	.03		.01	
Relaxation/escape motivation for viewing TV	-.02		-.05	
TV judged informative	-.01		-.05	

\* F significant at .05.

poses. The standardized regression coefficients presented in the table indicate that print media exposure, college education, and paying full attention to news programs are the strongest and only significant predictors of interest in these news topics. While frequency of viewing is not the weakest predictor in both equations (it is, in fact, the fourth strongest predictor of interest in the Middle East), it is not a significant variable in any of these equations. Across the 20 equations, frequency of exposure was the weakest or next to the weakest independent variable in a majority of cases. Thus, after news viewers achieve a minimum threshold of quantitative exposure, their personal characteristics and viewing habits, particularly their news knowledge and attentiveness to news programs, are more important in establishing agendas than mere time spent in front of the TV set.

### Discussion

This study has substantiated some of the conclusions and speculations of previous studies of agenda setting. For example, the rather weak indications of agenda setting reported herein are consistent with the notion that it is more difficult to demonstrate the phenomenon in cross-sectional surveys, particularly when considering attitudes toward as many different issues as were considered here. Longitudinal experiments and quasi-experiments designed to probe the impact of television news on the salience of one particular issue or class of issues (e.g., foreign policy matters) probably reveal more robust effects.

This study has also confirmed the apparent importance of "news awareness" (indirectly indicated by print media exposure and educational attainment) in conditioning the effects of exposure to television news. While previously only MacKuen (1981) had formally scrutinized the effect of educational attainment on agenda setting, the role of news awareness as a contingent condition of news recall and comprehension has been fairly well established. In this context, perhaps the most significant aspect of this study has been to argue that education and other variables which affect news recall and comprehension may similarly affect agenda setting. In order for the two literatures to be properly reconciled, however, future research should directly ascertain the effects of news recall and comprehension on the process of agenda setting.

Another important finding of this study concerns the relative impotency of quantity of television news exposure as a factor in agenda setting. This result has implications not only for the study of agenda setting, but also for the study of other media effects. As studies by Levy (1978) and Hill (1983) seem to indicate, quantity and quality of news viewing are two independent concepts. And whereas prior research into almost all media

effects has focused on the quantity of exposure alone, it may be that researchers need to focus now on some of the relevant characteristics of viewers and their viewing traits other than frequency of exposure.

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## Finding Subgroups for Surveys

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IN 1982, the General Social Survey (GSS) participated in a methodological experiment to compare two samples of black respondents. One sample consisted of black respondents identified through a household sample designed as a cross-section of the general population; the other consisted of black respondents identified through a household sample in which areas were selected with selection probabilities proportional to the size of the black population. The study was funded by the National Science Foundation and conducted by NORC. Respondents in both samples were administered a face-to-face interview that lasted about 75 minutes

**Abstract** This article reports on an experiment comparing two methods for selecting national samples of blacks. The experiment was carried out as part of the 1982 General Social Survey (GSS). One sample was selected using area probability sampling with the selection probability for an area proportional to the size of its black population. The other sample was selected by sampling extra dwelling units in areas selected sharply in costs and Although comparable in other respects, the two methods differed sharply in experimental efficiency. The sample selected from the special black frame proved less expensive to interview and required fewer screening interviews in order to locate households with black members. The sample selected in the same areas as the regular GSS sample exhibited a smaller "design effect"—probably because fewer respondents were selected from each sample area. The decision to use one method or the other to sample rare subgroups would depend on several factors, including the degree to which the subgroup is segregated, the amount of savings possible through piggybacking, and the relationship between screening and interviewing costs.

Roger Tourangeau is Senior Methodologist, National Opinion Research Center. A. Wade Smith is Associate Professor, Arizona State University, and Research Associate, National Opinion Research Center. This research was supported by a grant from the National Science Foundation (SES-8023396) to the National Opinion Research Center. The authors especially thank Mary Kay Burch for providing the accounting data used in these analyses, and Martin Frankel, June Meitz, and two *POQ* reviewers for their insightful comments on earlier drafts. The authors take responsibility for all conclusions herein, as well as any remaining errors. Direct reprint requests to: Library, National Opinion Research Center, 6030 S. Ellis Avenue, Chicago, IL 60637.