

Television News, Real-World Cues, and Changes in the Public Agenda

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STUDENTS of public opinion have long sought to understand the dynamics of citizens' concerns for political issues. The public agenda is remarkably volatile—problems surge and decline in rapid succession as focal points of public attention and concern. Following the lead of Lippman (1922), researchers have argued that changes in the public agenda are caused by changes in the media agenda. According to this agenda-setting hypothesis, the amount of media attention devoted to particular issues determines the degree of public concern for these issues (for recent reviews of the vast literature on agenda-setting, see MacKuen and Coombs, 1982; Erbring, et al., 1980).

That media agendas determine citizens' political priorities has important political ramifications. By raising public concern for particular issues, the media may also alter the criteria citizens use to evaluate their leaders. As members of the Carter Administration have suggested (see Public Opinion Magazine, 1981), heavy television coverage of Iran im-

Abstract This paper examines the interrelationships between real-world cues, television news coverage, and public concern for the issues of energy, inflation, and unemployment. On the basis of longitudinal data, the authors show that media agenda setting is indeed unidirectional—television news influences public concern and not vice versa. Lead stories are significantly more powerful than ordinary stories in shaping the public's agenda. Prevailing conditions and events affect public opinion both directly and indirectly, by determining the degree of news coverage accorded issues.

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mediately before the election may have increased the importance voters assigned to foreign policy as a criterion for evaluating the presidential candidates. The election was thereby transformed into a referendum on the Carter Administration's foreign policy, with disastrous consequences for Carter's candidacy. Experimental studies tend to corroborate this argument; individuals exposed to more news about a particular issue come to assign greater weight to this issue when evaluating the incumbent president (see Iyengar, et al., 1984), and when formulating their voting choices (Iyengar and Kinder, 1984; Behr, 1984).

In this article we rely on longitudinal data spanning seven years to investigate the public's concern for inflation, unemployment, and energy. Our analysis extends agenda-setting research into two hitherto unexplored areas. First, we trace public concern to both television news coverage and to prevailing conditions or events. Second, we investigate the impact of television news on public concern as well as the reciprocal impact of public concern on levels of news coverage.

Limitations of Past Research

Given the political ramifications of agenda-setting and the preeminence of television as a credible and trustworthy source of political information (see Bower, 1983), it is not surprising that a good deal of research has been directed at the agenda-setting effects of television news programs. These studies report a kaleidoscope of findings. Some researchers claim that television news coverage has no impact on the audience's perceptions of issues (Patterson and McClure, 1976); others suggest that television lags behind newspapers as an agenda-setter (Ben-ton and Frazier, 1976) and that the effects of television on perceptions of issue importance are limited to the least educated and informed segments of the citizenry (McCombs, 1976).

Confusion over the agenda-setting power of television may simply be a product of methodological limitations. The cross-sectional sample survey favored by most researchers is hardly a powerful means of testing a dynamic process such as agenda-setting. A more appropriate strategy is to search for media effects over time, as news coverage and public concern evolve. Longitudinal studies of agenda-setting, though few in number, find that changes in the level of media attention do indeed produce changes in public concern for national issues (see MacKuen and Coombs, 1982). Similarly, experimental work demonstrates that network newscasts possess an uncanny capacity to shape viewers' political concerns (Iyengar, et al., 1982). In short, it is premature to dismiss television as a medium with little agenda-setting clout.

Most research on agenda-setting is not only methodologically weak, it

also suffers from conceptual limitations. Researchers ignore the effects of direct experience on individuals' political concerns (two exceptions are MacKuen and Coombs, 1982; Erbring, et al., 1980). While there can be no denying that citizens are highly dependent upon the media for public affairs information, personal experience too is a sufficiently credible source of information. Many national issues impinge on large numbers of individuals; some issues, including crime, civil rights, and unemployment have profound personal significance. Explanations of the "issue-attention" cycle must therefore include both mediated and direct experiences; ignoring the latter may lead to notably exaggerated estimates of the effects of media.

Prevailing circumstances and events can also affect individuals' political concerns indirectly by determining what the media pay attention to. As unemployment rises, the media may devote more time to unemployment and the public's concern for the issue rises. If this is the case, then agenda-setting represents the media alerting citizens to current realities. On the other hand, despite the claims of network executives that their newscasts are "mirror images" of current realities, news coverage of national issues may be quite indifferent to prevailing conditions. Media agendas may be determined instead by idiosyncratic editorial, organizational, or commercial imperatives (see Epstein, 1973; Altheide, 1976; Gans, 1980), thus diverting the public from the "real" problems facing the nation.

In either event, it is imperative that indicators of national conditions be brought to bear on the relationship between news coverage and issue salience. Real-world indicators serve two purposes: first, to assess the sensitivity of television news coverage to current conditions and events; second, to distinguish between the effects of news coverage and real-world conditions on public concern for issues.

Finally, agenda-setting researchers have generally ignored the critical question of causality. It is taken for granted that news coverage is the driving force and that agenda-setting is a unidirectional or recursive process. The possibility of a feedback effect, namely, that public concern itself spawns news coverage, is ignored. The networks may choose to broadcast stories that are of current interest to their viewers. Our analysis is sensitive to this possibility. We attempt to estimate the impact of news coverage on public concern as well as the impact of public concern on news coverage.

Indicators

Researchers seeking to study the salience of national problems face a number of methodological difficulties. The most serious stems from the

fact that no survey organization regularly asks some version of the question "What do you think is the most important problem facing the nation today?" Longitudinal analyses of issue salience require frequent observations, for the public's issue concerns are notably volatile. For example, in November 1974, 9 percent of the responses expressed a concern with unemployment; two months later, the figure was 25 percent. In addition, estimation of the time span over which a given variable affects issue salience requires that observations be made at regular intervals.

Our study meets these requirements by relying on three different sources of data on problem salience—Gallup, Yankelovich, and University of Michigan surveys. Each of these surveys asks a similarly worded open-ended question on the importance of national problems. Our method for making the results of the three organizations compatible is described in Appendix A, along with a list of the surveys used. In essence we calculated the percentage of responses, rather than respondents citing each issue. Combining the three sets of polls, we obtained a measure of problem importance for every two-month period between 1974 and 1980, save three. Figures for those three periods were interpolated, resulting in a total of 42 bimonthly observations.

As our indicators of television news coverage, we counted the total number of stories as well as the number of lead stories aired on the weekday CBS national news for the same period—1974–80.¹ It is useful to distinguish between lead and other stories, because the networks carefully select the former as the most important news development of the day. Lead story coverage may be more sensitive to real-world conditions and may exert a stronger impact on viewers' perceptions of political issues.

Only stories dealing with energy, unemployment, or inflation were compiled. News items that were less than 20 seconds in length were ignored. The number of ordinary and lead stories was tallied for each month and averaged for each bimonthly observation.²

Within each issue area, we collected indicators of current conditions. These indicators reflect the economic health of the nation. For inflation they included the overall consumer price index (cpi), the cpi for food, and interest rates. The indicators of unemployment were the unemployment rate and the average duration of unemployment. Finally, in the case of

¹ We chose CBS for it has the largest audience. In fact, the network newscasts are so homogeneous that bias stemming from the choice of any particular network is minimal (see Meadow, 1973).

² Our source was the Vanderbilt Television Archive's *Abstracts* of the daily evening newscasts. News stories were coded on the basis of their principal subject matter. That is, a story that referred to two of the issues under investigation was classified according to its predominant issue content.

energy, we included the energy cpi, energy imports, energy stocks, home heating oil prices, and gasoline prices.

To supplement these indicators of current conditions, we also recorded instances of presidential addresses to the nation on each issue. It is common for presidents to signal their concern for an issue by speaking to the nation on the subject. Does presidential attention to an issue induce the media and the public to accord the issue greater importance?³

The networks are also likely to cover the activities of other visible political actors. In the case of energy, the OPEC oil ministers represent a group whose decisions have vital consequences for energy prices and supply in the U.S. We therefore recorded the dates of OPEC meetings.⁴

Analysis

With our indicators of issue salience, real-world conditions, and television news coverage in hand, we can attempt to specify a two-stage model of agenda-setting. The model estimates the effects of real-world conditions on news coverage and isolates the independent effects of television news and real-world conditions on issue salience. Finally, the model estimates the feedback effect of issue salience on news coverage. (A more detailed description of the model is provided in Appendix B.)

Prior to estimating the two-stage model, it is helpful to display the simple relationships between problem salience, news coverage, and real-world conditions. Figures 1-3 plot salience, total news coverage (lead and nonlead stories), and an indicator of current conditions for each issue. The indicators are percentage change in the energy cpi, the unemployment rate, and, for inflation, the percentage change in the cpi. The ranges of each variable are shown in the figures.

Unemployment is the least covered of the three issues. CBS broadcasts an average of 3.6 unemployment stories per month, as compared with 12.6 for energy and 16.6 for inflation. Inflation is the most salient issue

³ The subjects of presidential addresses were obtained from the journal *Vital Speeches*. Only addresses to the nation were coded. Dates of speeches on energy were: April 18, 1977; November 8, 1977; January 19, 1978; April 15, 1979; July 15, 1979; and March 14, 1980. Dates of speeches on unemployment were: January 15, 1974; January 19, 1976; January 12, 1977; February 2, 1977; and January 19, 1978. Dates of speeches on inflation were: July 25, 1974; August 12, 1974; October 24, 1978; January 23, 1979; and March 14, 1980.

⁴ Only meetings of OPEC ministers were coded. The dates of these meetings were: January 19, 1974; September 13, 1974; December 13, 1974; March 5, 1975; June 10, 1975; September 28, 1975; December 20, 1975; May 26, 1976; December 15, 1976; December 19, 1977; June 19, 1978; December 15, 1978; March 26, 1979; June 27, 1979; December 17, 1979; May 6, 1980; June 9, 1980; September 16, 1980; and December 15, 1980.

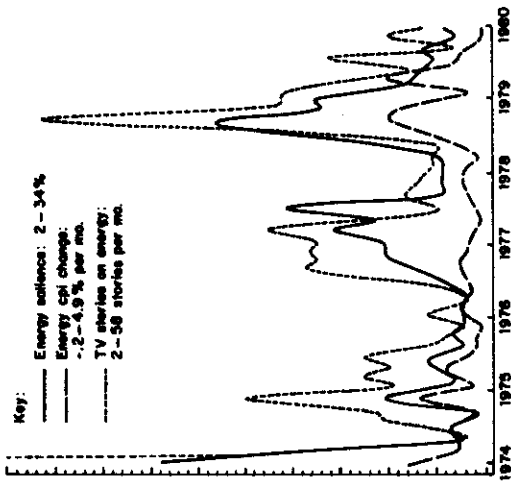


Figure 1. Energy: Percent of public naming energy as most important problem, number of TV stories on energy, percent change in energy CPI, 1974-1980

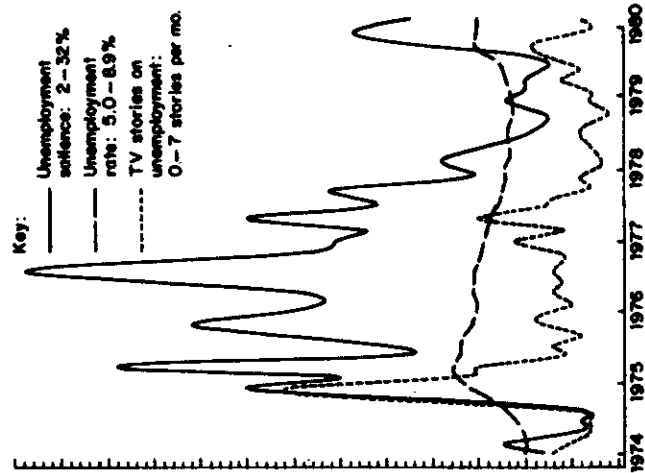


Figure 2. Unemployment: Percent of public naming unemployment as most important problem, number of TV stories on unemployment, unemployment rate, 1974-1980

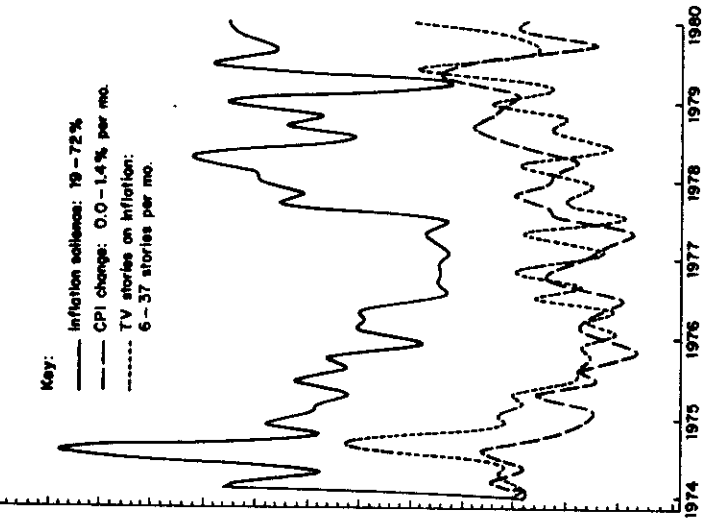


Figure 3. Inflation: Percent of public naming inflation as most important problem, number of TV stories on inflation, percent change in CPI, 1974-1980

over the seven-year span and receives an average of 41.6 percent of the responses to the "most important national problem" question. Energy and unemployment are considerably less salient, with means of 8.5 percent and 12.2 percent, respectively.

Within all three issue areas there is substantial congruence between news coverage and public concern. The simple correlation (r) between the number of news stories and the level of concern is .73 for energy, .37 for unemployment, and .53 for inflation. The correlations between the level of public concern and the economic indicators are also substantial—.52 in the case of energy, .74 for unemployment, and .43 for inflation.

Having seen that public concern, news coverage, and real-world conditions are intertwined within each area to differing degrees, we now proceed to identify the causal links between these factors. For purposes of organizational simplicity we present the results in two sections—determinants of news coverage and determinants of the public agenda.

Determinants of News Coverage

In this section we assess the impact of economic conditions, presidential speeches, OPEC meetings (in the case of energy), and the level of public concern on network news coverage of inflation, unemployment, and energy. We shall examine total and lead story coverage separately so as to investigate whether the two types of coverage respond to the same forces. The estimated coefficients for the total number of stories and the number of lead stories are presented in Tables 1 and 2, respectively.

In all three areas, both total coverage and lead story coverage are affected significantly by national economic conditions. Energy coverage responds to changes in the energy cpi, coverage of unemployment is spurred by both the rate of unemployment and changes in the rate, while stories about inflation follow unusually large increases in the cpi.

These effects are substantial. A large increase in the cost of energy, for instance (6 percent in two months), produces an average of 21 stories in that two-month period. Approximately four of these will be lead stories. A shift of .25 percent in either direction in the level of unemployment

Table 1. Determinants of Total News Coverage

Variable	Energy ^a	Unemployment ^b	Inflation ^c
% Change in energy cpi	3.50 (.87)		
Unemployment rate		1.83 (.70)	
Change in unemployment rate		17.02 (2.79)	
% Change in cpi (above mean only)			3.99 (2.28)
Presidential speech	9.99 (4.39)		
OPEC meeting	7.38 (2.74)		
Public concern for issue			.67 (.36)
Constant	8.85 (4.43)	-9.96 (4.77)	1.21 (14.94)
Rho	.52 (.14)		.47
Adjusted R ²	.37	(.14)	.24
S. E. of regression	10.99	.58	10.76
Durbin-Watson statistic	1.85	4.27	1.90

^a Maximum likelihood estimates.

^b OLS estimates.

^c Two-stage, maximum likelihood estimates.

Table 2. Determinants of Lead Story Coverage

Variable	Energy ^a	Unemployment ^b	Inflation ^b
% Change in energy cpi	.67 (.18)		
Unemployment rate		.55 (.11)	
Change in unemployment rate (absolute value)		1.87 (.43)	
% Change in cpi (above mean only)			.72 (.40) 1.92
Presidential speech		.67 (.27)	(1.36)
Constant	1.27 (.82)	-3.25 (.73)	2.65 (.56)
Rho	.46 (.14)		
Adjusted R ²	.23	.66	.10
S.E. of Regression	2.46	.65	2.52
Durbin-Watson statistic	1.83	1.92	1.66

^a Maximum likelihood estimates.

^b OLS estimates.

brings forth four additional stories on that subject, while a change of slightly over .5 percent warrants a lead story.

We used the absolute value of the change in unemployment because we suspect that news coverage is driven by changes in economic conditions in either direction. The coefficient suggests that news coverage is indeed not limited to "bad news;" decreases in unemployment are as newsworthy as increases. We were unable to test for similar patterns in the areas of energy and inflation because there were no periods of deflation during the seven years we examined.

Inflation coverage, too, is driven by changing (worsening) national conditions, though here the changes must be unusually severe to warrant additional news attention. The percentage increase in the cpi must surpass the seven-year average (1.5 percent in two months) in order for it to affect news coverage. A one percent increase in the cpi, for example, generates no new stories. A two percent increase, however, produces between one and two lead stories and a total of about eight stories over the two-month period.⁵

⁵ Other indicators of inflation had no effect. For total stories, changes in the food cpi, $b = .84$, standard error = 1.94; for lead stories, changes in the food cpi, $b = .47$, standard error = .43; for total stories, changes in interest rates, $b = 1.12$, standard error = .98; for lead stories, changes in interest rates, $b = .38$, standard error = 2.06.

It is not surprising that television news responds only to unusual surges in the inflation rate. The period under investigation was marked by continually high inflation (the average annual cpi was 8.9 percent). The networks thus may have taken inflation for granted, deeming the issue newsworthy only when it was unusually severe.

Presidential and other elite activity also affect news coverage. A presidential speech on energy generates nearly 10 stories, while OPEC meetings are followed by an average of seven additional energy stories. Meanwhile, speeches on both unemployment and inflation elicit lead story coverage, though in the case of the former the standard error of the coefficient is too high to allow much certainty.⁶ Finally, both indicators of news coverage are as a rule immune to shifts in the level of public concern. In but one instance (total coverage of inflation) did we detect increased coverage following a rise in public concern. Even here, the effect is quite small—an increase of 3 percent in the level of public concern leads to but 2 stories in a two-month period.⁷

DISCUSSION

Our results demonstrate that in all three issue areas, television news coverage is at least partially determined by real-world conditions and events. We are impressed by this overlap between the real-world and news coverage, particularly in the case of unemployment, where nearly two-thirds of the variance in news coverage is explained by economic conditions. In general, our results suggest that television news coverage provides at least a partial reflection of the state of the nation.

News coverage is for the most part unaffected by public opinion and the assumption that agenda-setting is a recursive process is on solid ground.

⁶ The probability that the true coefficient is greater than zero is approximately .8. Presidential speeches on energy do not produce lead stories ($b = .52$, standard error = .98). The same is true of OPEC meetings: $b = .72$, standard error = .62. The dates of speeches used in this analysis are listed in Appendix A.

⁷ To calculate the effect of public concern, Fair's two-stage estimator was used. The level of public concern was treated as an endogenous variable, using as instruments presidential speeches on energy, the level of concern with unemployment, and the level of concern with inflation. These are the variables found in the second portion of the analysis to affect the level of concern for energy (see Table 3). The effect of concern for energy on the total number of stories was $-.61$, standard error = .80; the effect on the number of lead stories was .01, standard error = .08.

In the case of unemployment, the instruments used were the unemployment rate and the average duration of unemployment (see Table 3). The effect of public concern on total coverage was $-.14$, standard error = .17. The effect on the number of lead stories was .004, standard error = .03.

For inflation, presidential speeches, the importance of energy, and the importance of unemployment were used as instruments (see Table 3). The effect of concern for inflation on the number of lead stories = .03, standard error = .04.

Coverage of inflation provides the only instance of this "agenda-setting in reverse" effect. This effect may have resulted from the extraordinarily high level of public concern accorded inflation during the 1974-1980 period.

Not surprisingly, the president is a major contributor to the network agenda. Not only is a presidential address a newsworthy event in itself, it can also serve as a journalistic peg on which to hang a variety of feature stories (see Gans, 1980:168). That is, presidential activity causes a flurry of news coverage, not all of which concerns the original event. President Carter's 1979 televised address on energy, for instance, was followed by five separate stories that week on the Alaskan pipeline, problems facing the tourism industry, and the increase in reported thefts of gasoline.⁸

Determinants of the Public Agenda

We have found that real world conditions partially determine levels of media coverage. We now set out to investigate the impact of real world conditions and news coverage on the public agenda. This section of the analysis builds on our previous results. To correctly identify the two-stage model, we use as instruments those variables we earlier found to predict news coverage.

In two of three areas (energy and inflation), levels of public concern are indeed driven by television coverage (see Table 3). However, it is the lead story that serves as the agenda-setting force. The effect is substantial—every lead story dealing with energy raises the level of concern by about 1.25 percent, and each story related to inflation has a similar effect.⁹ Only

⁸ In general, the number of news stories reporting the occurrence and content of these presidential addresses represented only a fraction of the number of stories generated by such a speech. For example, an average of three stories was devoted by CBS to covering each speech on energy. This is less than a third of the average of 10 energy stories we find to be prompted by each speech. Thus, we have good reason to believe that a presidential address can generate stories not directly related to the speech itself.

⁹ It is appropriate to treat the number of lead stories as an endogenous variable because the error terms of the equation used to predict its values are correlated with the error terms of the equation estimating its impact on the public's concern. However, because in the case of inflation we were unable to build a model accounting for much of the variance in the number of lead stories (see Table 2), the standard errors of the estimates for the effect of media on salience levels were quite large. The coefficients, themselves, however, were not significantly different from those estimated in the ordinary least squares regression. We therefore present the OLS estimates, with the caution that the coefficients for the media variables may be overestimated by 20 to 30 percent. This does not change our conclusion that these variables exert significant impact on the level of the public's concern with inflation.

Table 3. Determinants of Public Concern

Variable	Energy ^a	Unemployment ^b	Inflation ^c
Number of lead stories	1.25 (.22)	1.24	(.44)
Number of lead stories (<i>t</i> -1)			.82 (.47)
Unemployment rate		3.04 (1.36)	
Average duration of unemployment (weeks)		1.70 (.65)	
Presidential speech	5.77 (1.33)		6.07 (3.51)
Control variables			
Concern for energy			-.47 (.23)
Concern for unemployment	-.24 (.09)		-.62 (.24)
Concern for inflation	-.09 (.07)		
Constant	8.87 (4.17)	-30.34 (7.05)	44.84 (5.38)
Rho	.33 (.14)	.41 (.14)	
S.E. of regression	2.87	3.98	6.80
Adjusted R ²	.79	.46	.57
Durbin-Watson statistic		1.83	1.99

^a Two-stage, maximum likelihood estimates.

^b Maximum likelihood estimates.

^c OLS estimates.

in the case of unemployment do we find no agenda-setting by lead stories.¹⁰

The number of nonlead stories has no independent effect on public concern for any of the three issues.¹¹ One should not necessarily conclude, however, that nonlead stories do not affect the public agenda. A more plausible interpretation is that the audience's attention span dissi-

¹⁰ For the simultaneous equations, maximum likelihood estimates, with media variables treated as endogenous, the number of lead stories had a coefficient of .31, with standard error = 1.03. Presidential speeches on unemployment, and the change in the rate of unemployment were used as instruments to identify the equations.

¹¹ For energy, *b* = .10, standard error = .15. The number of nonlead stories was treated as an endogenous variable, with presidential speeches and OPEC meetings serving as instrumental variables. For unemployment, *b* = .09, standard error = .35. The unemployment rate and the percentage of change in the rate (absolute value) were used as instruments. For inflation, *b* = .03, standard error = .19. The percentage of change in the *opi* (above mean only) was used as the instrument.

pates rapidly and that the impact of news stories diminishes with their placement in the newscast.

Only in the case of inflation is there any lingering impact of television coverage. Here the number of stories during the previous time period as well as the number of stories in the current period determine the current level of concern.¹²

Public concern for issues responds not only to television coverage; real-world conditions and events have an independent impact in all three issue areas. For both energy and inflation, public concern is shaped directly by the president. For every presidential speech on the subject of energy, an additional 6 percent of the citizens' concerns relate to energy as a result. When the president speaks to the nation on inflation, the resulting rise is again about 6 percent. Only speeches on unemployment have no agenda-setting effect.

Unemployment is the only area where public concern is affected directly by economic conditions. Citizens' concern rises with the national level of unemployment and the average duration of unemployment. For every percentage point of the work force unemployed, the issue draws the attention of 3 percent of the public, while each week added to the average length of unemployment contributes 1.7 percent.¹³ Note, however, that the impact of economic conditions has no long-term component. That is, citizens are unaffected by previous levels of unemployment when deciding whether the issue is currently an important problem.¹⁴

Notable for their failure to affect the salience of energy directly are economic indicators. Higher energy costs, higher fuel oil costs, energy consumption, and OPEC imports all fail to heighten directly public concern over energy.¹⁵ Nor is public concern for inflation related to any

¹² For energy, $b = .05$, standard error = .18.

¹³ It is not surprising that public concern is related to the average duration of unemployment while news coverage of the issue is not. Duration is a relatively obscure statistic; the news media rarely cite it. On the other hand, the conditions that it represents are likely to be felt quite strongly by the people affected by unemployment. To them, the longer the period of unemployment, the more serious the problem.

¹⁴ For the level of unemployment in the previous period, $b = .31$, standard error = .37. For the average duration of unemployment, $b = .19$, standard error = .14.

The control variables—concern for energy and inflation—have no effect in this equation. For energy salience: $b = .08$, standard error = .17; for inflation salience: $b = .17$, standard error = .13. Keeping the latter in the equation did not alter fit of the model significantly.

¹⁵ Our results here are at odds with MacKuen's analysis, in which the price of home heating oil is found to directly affect the level of concern with energy (MacKuen and Coombs, 1981:94). In our analysis, for change in energy prices, $b = .13$, standard error = .27; for changes in heating oil prices, $b = -.04$, standard error = .42; for OPEC imports, $b = .0001$, standard error = .001.

indicator of economic conditions. Changes in the cpi, the cpi for food, and interest rates have no impact.¹⁶

While economic conditions exert no direct effect on citizens' concern for energy and inflation, there are mediated effects. Rising prices stimulate additional news coverage which, in turn, boosts public concern. A 6 percent increase in energy prices over two months, for example, is followed by four lead stories, which raise the level of public concern by just over 4 percent. The effect is similar in the case of inflation.

DISCUSSION

A summary of our results is presented in Figure 4. In two of the three issue areas we detect unambiguous evidence that television news sets the public agenda. Unemployment is the deviant case; here public concern is directed entirely by economic conditions. The distinctiveness of unemployment may stem from the low level of news coverage accorded the issue. CBS broadcast on average only one lead story on the issue every two months, compared to three leads for energy and four for inflation. This level of coverage may be insufficient to boost viewers' perceptions of the importance of the issue.¹⁷

The low level of coverage accorded unemployment by the networks suggests that information about unemployment is acquired from other sources. Given the severe personal consequences of unemployment, individuals may seek out information about unemployment in their own communities or occupations, information that is more apt to be conveyed interpersonally or by local media rather than network newscasts. In short, the sensitivity of public concern to national conditions may be mediated by local media or by a two-step flow of information.

Not only do we detect evidence of agenda-setting by television news, our results also indicate that the effect is in fact unidirectional. News coverage boosts public concern but public concern does not, for the most part, alter the level of coverage. The only instance of such a feedback effect involves coverage of inflation, a result that can be attributed to the extraordinarily widespread public concern for this issue during the time period under investigation, or similarly widespread concern among news executives.

¹⁶ For percentage of change in cpi, $b = .51$, standard error = 1.76; for percentage of change in food cpi, $b = .06$, standard error = 1.18; for percentage of change in interest rates, $b = -.37$, standard error = .62.

¹⁷ We should emphasize here that our data precede the dramatic increases in unemployment which occurred in 1981 and 1982. For the period under study, the rate of unemployment ranged from 5.0 to 8.9 percent. It is possible that, as in the case of inflation, a threshold effect governs coverage of unemployment. Thus when unemployment reaches an unusually high level, news coverage may rise substantially, possibly triggering an agenda-setting effect.

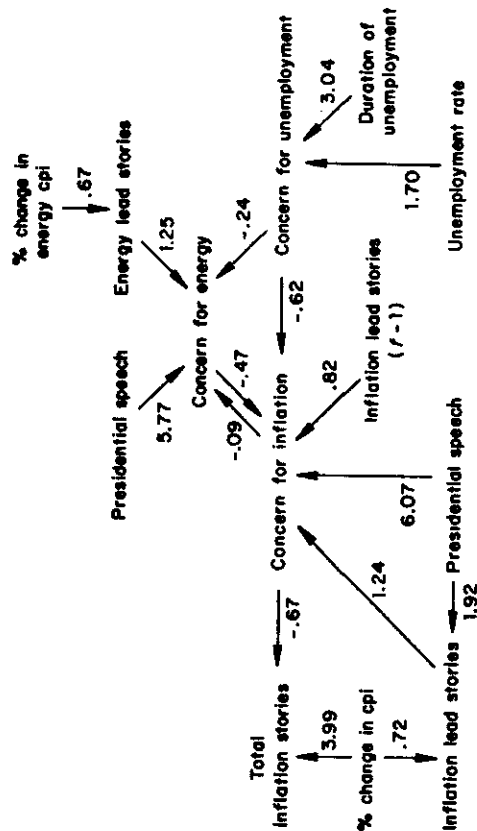


Figure 4. Summary of results

past two months. The short-term duration of these effects does *not* detract from their strength or reliability. Instead, these results suggest a public with a limited memory for past conditions and news stories, a public whose political concerns are heavily dependent on present conditions and news coverage.

Conclusion

The public agenda is indeed affected by what television journalists and editors choose to broadcast as news. However, news coverage is not the sole source of citizens' issue concerns. As real-world conditions worsen and the president turns his attention to particular issues, public concern for these issues increases. Real-world conditions and events provide an independent impetus to the perceived importance of issues. Moreover, since news coverage of issues is to a significant extent determined by actual conditions, analyses of media agenda-setting that ignore real-world conditions will arrive at severely inflated estimates of media influence.

It is true that the three issues examined here are relatively obtuse—issues with tangible consequences for individuals. As such, our results may not be generalizable to issues that are more remote and symbolic. Public concern for symbolic issues may be a good deal more susceptible to media coverage than we found it to be for energy, unemployment, or inflation.

Not only do real-world conditions complement media as determinants of issue salience, but as Erbring and his colleagues have pointed out (1980), they may also govern individuals' sensitivity to the media agenda. Under conditions of rising unemployment, for example, citizens may become alert to the issue and thus monitor the media more vigilantly for news about unemployment. To the extent that an issue has personal significance, news about the problem can boost one's concern to even higher levels. In short, personal experience and media agendas may interactively shape citizens' political concerns (for some evidence of such an interaction effect, see Erbring, et al., 1980).

We searched unsuccessfully for interactions between real-world conditions and television news coverage. However, aggregate data such as ours are hardly appropriate for discerning interaction between *personal* experience and media coverage. Without the benefit of individual-level analysis, it is impossible to test the interaction hypothesis.

While our results suggest that real-world conditions trigger agenda-setting by television, we can only speculate over the processes by which real-world conditions affect public opinion. Three possibilities may be considered. First, public concern for issues may vary directly in response

A major implication of our results is that news stories are not equally effective in molding the public agenda: the lead story in the newscast has the strongest impact on citizens' perceptions of issue importance. We suggest three explanations. First, from the networks' perspective, the lead story is the day's most important news (Gans, 1980). It is possible that the audience recognizes this distinction and therefore attaches greater weight to information conveyed in the form of lead stories. As noted earlier, the greater impact of lead stories over nonlead stories may also stem from a higher level of viewer attentiveness during the first few minutes of the newscast. Finally, research on attitude change suggests that the order in which persuasive messages are presented can affect the probability of message acceptance; arguments tend to be more persuasive when presented earlier rather than later (for a discussion of order-of-presentation effects, see Petty and Cacioppo, 1981). A similar "primacy" effect may underlie agenda-setting by television newscasts.

Our results also point to the president as an important contributor to the public's political agenda. When the president speaks, the public listens. And not only does the president exercise direct influence over citizens' concerns, but since presidential addresses are prominently positioned in the news, he has a mediated effect as well.

Finally, our results make clear that citizens' issue concerns are indeed volatile. Media and real-world effects are quickly supplanted. In but one instance were we able to detect an agenda-setting effect that persisted

to national conditions. As energy shortages worsen, more drivers spend time in gas lines; as food prices rise, more shoppers notice the decline in their purchasing power. Second, worsening national conditions spawn news coverage on the basis of which people form judgments about national problems. As inflation increases and the networks run more stories on inflation, more people conclude that inflation is an important national problem. Finally, people may respond to information about local conditions in their neighborhoods or communities, information acquired through interpersonal communication, direct experience, or local media. Local information may be generalized to form judgments about national conditions. Monitoring these intervening processes is vital if we are to understand the dynamics of the public agenda.

Appendix A

SOURCES AND CALCULATION OF MOST IMPORTANT NATIONAL PROBLEM FIGURES

In order to estimate the extent to which determinants of the public agenda have a lasting effect, it is necessary to have observations taken at equal intervals. No single survey organization asks the question "what do you think is the most important national problem facing the nation?" with any regularity, however. By using the results of three polls—AIPO, Yankelovich, and University of Michigan—we were able to obtain a reading for every two-month period between 1974 and 1980, save three. In their original state, however, results from different organizations were not compatible. Both AIPO and Yankelovich accept multiple answers, while Michigan does not. Additionally, Yankelovich consistently records a higher average number of answers—sometimes over two per respondent. Gallup generally averages under 1.5 mentions per person. Thus, if one compares readings of two or more organizations in any of the months where their polls are conducted simultaneously, as a rule, Yankelovich will record higher percentages of respondents citing any given issue. Michigan polls record the lowest figures.

To make the three sets of results compatible, the percentage of responses concerning each issue was calculated. This transformation yielded essentially equal readings for the several months in which more than one organization asked the question. For example, in August 1979, both AIPO and Yankelovich asked about the most important national problem. Of AIPO respondents, 19.7 percent said energy, 7.5 percent cited unemployment, and 50.3 percent mentioned inflation. In contrast, of Yankelovich respondents, 35.4 percent listed energy, 10.1 percent named unemployment, and 81.0 percent said inflation. Clearly these figures are incompatible. However, when the percentage of responses was calculated, AIPO had 15.4 percent for energy, 5.8 percent for unemployment, and 39.3 percent for inflation. Of Yankelovich's responses, 18.3 percent dealt with energy, 5.2 percent with unemployment, and 43.8 percent with inflation. Here, the differences are statistically insignificant. On the basis of several such comparisons, we concluded that calculating the percentage of responses allowed us to use three different polls interchangeably.

In the several two-month periods when the "most important national problem" question was asked more than once, either by the same or by different organizations, the respondents were pooled, and then the percentage of responses expressing concern with each issue area was calculated. In the three cases where no observations were available, levels were estimated by interpolation.

The following surveys were used: AIPO 886, 906, 913, 915, 916, 924, 932, 938, 943, 950, 960, 961, 970, 980, 986, 993, 999, 1106, 1111, 1123, 1128, 1136, 1141, 1151, 1157, 1159, 1162; Yankelovich 8400, 8422, 8430, 8440, 8460, 8510, 8520, 8530, 8550, 8105, 8117, 8125, 8149, 8156, 8161, 8181, 8182, 8184, 8260; University of Michigan 1974, 1976, 1978.

Appendix B

The equations comprising the model can be written as follows:

$$\begin{aligned} \text{TV News} &= c + \text{Real World} + \text{Issue Importance} + \epsilon & [1] \\ \text{Issue Importance} &= C + \text{TV News} + \text{Real World} + E & [2] \end{aligned}$$

Equations 1 and 2 represent the "theoretical" model. Because of the transformations required to make the data from the three survey organizations compatible, responses citing one issue necessarily cause the percentage of responses referring to other issues to decrease (see Appendix A). Thus for example, the mentioning of energy as an important problem causes a decrease in the percentage of responses related to unemployment. To adjust for this statistical relationship, each equation must include the percentage of responses citing the two other issues. Thus the operational version of the model to be estimated for each issue is as shown in Figure 5.

It is appropriate to estimate the above simultaneous equations model with a two-stage procedure. Failure to use a two-stage estimator would produce inconsistent (upwardly biased, in this case) coefficients. This is because the determinants of the "dependent" variable omitted from the model may be correlated with omitted determinants of the "endogenous" variables (that is, the error terms of the equations may be correlated). In addition, a two-stage estimator makes it possible to investigate the direction of causality. One of our goals in this endeavor is to determine whether media agendas affect public agendas, and vice-versa (for illustrative applications of two-stage analysis, see Jackson, 1975; Jacobsen, 1975; Markus and Converse, 1979).

A key requirement of two-stage estimation is the specification of exogenous variables. In order to estimate the model pictured above, we must identify (1) causes of news coverage that exert no direct impact on public concern (this allows us to estimate the effect of media attention on problem importance), and (2) variables that directly influence public concern, but not news coverage (to allow us to estimate the feedback effect).

Ideally, the selection of instruments is guided by a priori theoretical considerations. But theories of "newsworthiness" are remarkably general. For example, newsworthy events are said to be those that are salient to the audience, reflect changing conditions, involve important decision makers or large numbers of people, or are current. By these criteria, few events are not newsworthy. We are thus forced to rely on intuitive expectations about which events and conditions warrant news coverage. Our strategy is to examine a series of

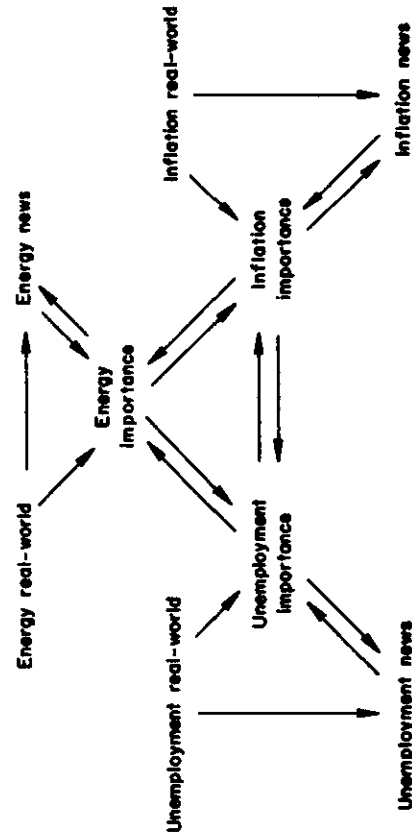


Figure 5. Model to be estimated

plausible determinants of news attention. Those which we find to be related to news attention we retain; the remainder we discard. We follow a similar course to find determinants of public concern.

We fully recognize the post-hoc nature of our instrument selection and model specification strategy. But, since there is so little hard evidence on the interplay between real-world conditions, news coverage, and public concern, we feel that it is preferable to estimate a two-stage simultaneous model in this manner than to fall back on the conventional assumptions of recursiveness and nonsimultaneity. Furthermore, there is good reason to believe that our instruments are indeed true causes of public concern and news coverage.

In order to estimate properly each of the k equations in the model ($k = 6$), there must be at least $k-1$ variables excluded from each equation. We meet this requirement; all our equations are sufficiently identified. In addition, the efficiency of the coefficients estimated at the second stage is in part a function of the success of the first stage estimates. Our ability to make these first stage estimates varies from one equation to another. So too, then, does the efficiency of our second stage estimates.

In addition to the difficulties of simultaneity, we must also address the possibility that the error terms in the equations may be autocorrelated across time. Positive autocorrelation causes one to underestimate the size of the standard errors and hence leads to overconfidence in the estimates.

When there is both simultaneity and autocorrelation, the simultaneous equations, maximum likelihood estimator developed by Fair (1970) is used. The estimator works in the following manner: first, values of the right-hand side endogenous variables (public concern in the first part of the analysis, television coverage in the second) are estimated, using as instruments (1) lagged values of the left-hand side endogenous variable, (2) lagged values of the right-hand side endogenous variables, (3) current and lagged values of the exogenous causes of the left-hand side endogenous variables (real-world conditions and events), and (4) current values of the exogenous causes of the right-hand side endogenous variables. Then the effects of the right-hand side endogenous and exogenous variables on the left-hand side endogenous variable are estimated using an iterative search procedure to determine, and correct for, rho, which measures the extent of the autocorrelation. (See Fair, 1970:518-9.)

When only autocorrelation is a problem, a simple maximum likelihood estimator is used (see Johnston, 1972). When only simultaneity exists, we use two-stage least squares.

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