WHAT MOVES PUBLIC OPINION?

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Democratic theory must pay attention to what influences public opinion. In this study the content of network television news is shown to account for a high proportion of aggregate changes (from one survey to another) in U.S. citizens' policy preferences. Different news sources have different effects. News commentators (perhaps reflecting elite or national consensus or media biases) have a very strong positive impact, as do experts. Popular presidents tend to have positive effects, while unpopular presidents do not. In contrast, special interest groups tend to have a negative impact.

Public opinion is supposed by some to be the great engine of democracy, determining what governments do. Recent evidence has indicated that public opinion does in fact have substantial proximate effects upon policy-making in the United States (Erikson 1976; Monroe 1979; Page and Shapiro 1983a; Shapiro 1982; Weissberg 1976). The next question, however, is, What moves public opinion? What affects citizens' policy preferences?

The answer makes a great deal of difference. It would be premature to celebrate the triumph of democracy before knowing how and by whom the public is itself influenced. Does the public react directly to objective events, so that opinion is effectively autonomous? Do experts or enlightened political leaders educate the public with helpful new information? Or do demagogues or self-serving elites manipulate opinion with false or misleading propaganda? Which influences are most important: events, experts, politicians, interest groups? Do the mass media report relevant information accurately or inaccurately?

In this paper we make a start at answering such questions by investigating the impact upon public opinion of the statements and actions of certain actors as reported in the media.

Rational Citizens and the Mass Media

We consider citizens' preferences among alternative public policies to be primarily instrumental. That is, policies are judged in terms of expected costs and benefits for the individual and for his or her family, friends, favored groups, and the nation or world as a whole. But because there is great uncertainty about the effects of policies, the expected utility of a particular policy alternative depends critically upon beliefs about the state of nature, that is, beliefs about present and

future facts and causal relationships (see McCubbins and Page 1984).

Thus new information that modifies relevant beliefs can change the expected utility of policies for citizens. This should occur if five conditions are met: if the information is (1) actually received, (2) understood, (3) clearly relevant to evaluating policies, (4) discrepant with past beliefs, and (5) credible. (For related views of attitude change, see Jaccard 1981; Zaller 1985.)

When these conditions are met to a sufficient extent, new information should alter an individual's preferences and choices among policies. Further, if the conditions are met in the same way for many individuals, there may be a change in collective public opinion that shows up in opinion polls. For example, if many citizens' policy preferences depend critically on the same belief (e.g., "We must spend more on national defense because the Russians are overtaking us") and if highly credible, well publicized new information challenges that belief (e.g., U.S. military spending is reported to rise sharply and a CIA study concludes that Soviet spending has changed little since 1976), then enthusiasm for increased military spending may drop.

Since most people have little reason to invest time or effort learning the ins and outs of alternative policies (Downs 1957), we would not expect new information ordinarily to produce large or quick changes in public opinion. Indeed the evidence indicates that aggregate public opinion about policy is usually quite stable (Page and Shapiro 1982).

By the same token, however, for whatever they do learn about politics, most people must rely heavily upon the cheapest and most accessible sources: newspapers, radio, and television, especially network TV news. When news in the media reaches large audiences and meets our five conditions for many individuals, we would expect public opinion to change.

Television news often meets the exposure condition. Most U.S. families own television sets, and most tune in to network news broadcasts from time to time. Viewers may wander in and out; they may eat or talk or be distracted by children; but every day millions of U.S. citizens catch at least a glimpse of the major stories on TV news. Others see the same stories in newspaper headlines or get the gist of the news from family and friends. Over a period of weeks and months many bits and pieces of information accumulate.

The conditions of comprehension and relevance, too, are often met. The media work hard to ensure that their audiences can understand. They shorten, sharpen, and simplify stories, and present pictures with strong visual impact so that a reasonably alert grade-schooler can get the point. Often stories bear directly upon beliefs central to the evaluation of public policies.

Credibility is a more complicated matter. Rational citizens must sometimes delegate the analysis or evaluation of information to like-minded, trusted agents (Downs 1957, 203–34). The media report the policy-relevant statements and actions of a wide variety of actors, from popular presidents and respected commentators, to discredited politicians or self-serving interest groups. News from such different *sources* is likely to have quite a range of salience and credibility, and therefore quite a range of impact on the public (see Hovland and Weiss 1951–52). The analysis of effects on opinion should allow for such variation.

News may also vary greatly in the extent to which it is or is not discrepant with past beliefs. If it closely resembles what has been communicated for many months or years, if it simply reinforces prevalent beliefs and opinions, we would not expect it to produce change. If, on the other hand, credible new information

calls into question key beliefs and opinions held by many people, we would expect changes in public opinion. The extent of discrepancy with past news and past opinions must be taken into account.

We are, of course, aware of the curious notion that the contents of the mass media have only minimal effects (Chaffee 1975; Klapper 1960; Kraus and Davis 1976; McGuire 1985; but cf. Graber 1984; Noelle-Neumann 1973, 1980, 1984; Wagner 1983). This notion seems to have persisted despite findings of agenda-setting effects upon perceptions of what are important problems (Cook, Tyler, Goetz, Gordon, Protess, Leff, and Molotch 1983; Erbring, Goldenberg, and Miller 1980; Funkhauser 1973; Iyengar, Peters, and Kinder 1982; McCombs and Shaw 1972; MacKuen 1981, 1984).

We believe that the minimal effects idea is not correct with respect to policy preferences, either. It has probably escaped refutation because of the failure of researchers to examine collective opinion over substantial periods of time in natural settings and to distinguish among news sources. One-shot quasi-experimental studies (e.g., of presidential debates) understandably fail to find large, quick effects. Cross-sectional studies seek contrasts between media attenders and media "nonattenders" that hardly exist: nearly everyone is exposed either directly or indirectly to what the media broadcast (see Page, Shapiro, and Dempsey 1985a, 2–4). A more appropriate research design yields different results.

Data and Methods

Taking advantage of a unique data set in our possession, we have carried out a quasi-experimental study that overcomes several of the limitations of previous research. The design involved collecting data from many pairs of identically repeated policy preference questions that were asked of national survey samples of U.S. citizens; coding TV news content from broadcasts aired in between (and just before) each pair of surveys; and predicting or explaining variations in the extent and direction of opinion change by variations in media content.

Our design facilitated causal inferences and permitted comparison across types of issues and historical periods. The use of natural settings meant that all real world processes could come into play, including major events and actions, the interpretation of news by commentators and others, and the dissemination of information through two-step or multiple-step flows and social networks (cf. Katz and Lazarsfeld 1965). The examination of moderately long time periods (several weeks or months) allowed enough time for these natural processes to work and for us to observe even slow cumulative opinion changes. In addition, our measurement scheme permitted us to distinguish among different sources of news and to take into account the extent of news story relevance to policy questions, the degree of discrepancy between current and previous media content, and the credibility of news sources.

As part of our ongoing research project on public opinion and democracy, we have assembled a comprehensive collection of survey data on U.S. citizens' policy preferences. It includes the marginal frequencies of responses to thousands of different policy questions asked by various survey organizations since 1935. Among these data we have identified several hundred questions that were asked two or more times with identical (verbatim) wordings, by the same survey organization. (For a partial description, see Page and Shapiro 1982, 1983a.)

For the present research we selected 80 pairs of policy questions from the last 15 years (for which TV news data are readily available) that were repeated within moderate time intervals averaging about three months.

These 80 cases are not, strictly speaking, a sample from the universe of policy issues or poll questions but (with a small number of exceptions) constitute either a random sample of the available eligible survey questions and time points for a given survey organization or *all* the available cases from an organization. They are very diverse, covering many different kinds of foreign and defense (n = 32) and domestic (n = 48) policies. In nearly half the cases public opinion changed significantly ($p < .05$; 6 percentage points or more), and in a little more than half, it did not—nearly the same proportion as in our full data set of several hundred repeated items. A list of cases and a more detailed methodological discussion is available in Page, Shapiro, and Dempsey (1985a, b).

The dependent variable for each case is simply the level of public opinion at the time of the second survey (T2), that is, the percentage of the survey sample, excluding "don't know" and "no opinion" responses, that endorsed the most prominent (generally the first) policy alternative mentioned in the survey question. As will be seen, our method of using T2 level of opinion as the dependent variable and including first survey (T1) opinion as a predictor yields nearly identical estimates of media effects as does using a difference score—the magnitude and direction of opinion *change*—as the dependent variable.

For each of the 80 cases, we and our research assistants coded the daily television network news from one randomly selected network (in a few low-salience cases, *all* networks) each day, using the summaries found in the *Television News Index and Abstracts* of the Vanderbilt Television News Archive. These summaries, while rather brief and not intended for such purposes, were generally satisfactory in providing the fairly straightforward information we sought, especially since they were aggregated over several weeks or months. We coded all news stories that were at least minimally relevant to the wording of each opinion item, beginning two months before the T1 survey—in order to allow for lagged effects and for discrepancies or changes in media content—and continuing with every day up to T1 and through to the date of the T2 survey.

Being interested in the effects of particular actors or *sources*—particular providers of information, or Downsian "agents" of analysis and evaluation—whose rhetoric and actions are reported in the media, we distinguished among the original sources found in each news story. We used 10 exhaustive and mutually exclusive categories: the president; fellow partisans and members of his administration; members of the opposing party; interest groups and individuals not fitting clearly into any of the other categories; experts; network commentators or reporters themselves; friendly (or neutral) foreign nations or individuals; unfriendly foreign states or individuals; courts and judges; and objective conditions or events without clearly identifiable human actors (e.g., unemployment statistics, natural disasters, unattributed terrorist acts).

Our independent variables characterize *reported statements or actions by a specified source*. Each such *source story*, or "message," constitutes a unit of analysis in measuring aggregate media content over the time interval of a particular case. For each reported statement or action by a particular source—each source story—we coded the following: 1) its degree of *relevance* to the policy question (indirectly relevant, relevant, or highly relevant); 2) its *salience* in the broadcast (its inclusion in the first story or not, its proximity to the beginning of the broadcast, its duration in seconds; 3) the pro-con *direction* of intended impact of the reported statement or action in relation to the most prominent policy alternative mentioned in the opinion item; 4) the president's pop-

ularity (measured by the standard Gallup question) as an indication of his *credibility* as news source at the time of his statement or action; and 5) some judgments—not used in this paper—concerning the quality of the information conveyed, including its logic, factuality, and degree of truth or falsehood.

The most important part of the coding effort concerned the directional thrust of reported statements and actions in relation to each opinion question. Proceeding a little differently from the method of our earlier work on newspapers (Page and Shapiro 1983b, 1984), we measured directional thrust in terms of the intentions or advocated positions of the speakers or actors themselves. We took considerable care in training and supervising coders and in checking the reliability of their work. We prepared detailed written instructions and held frequent group discussions of coding rules and the treatment of problematic cases. All pro-con coding decisions, and those on other variables central to our analysis, were validated by a second coder and also by one of the present authors, who made the final coding decisions.[1] We masked the public opinion data so that coders would not be affected in any way by knowledge of whether or how policy preferences changed; we gave them only the exact wording of each opinion item and the time periods to be examined, not the responses to the questions.

As a result of these efforts we are confident that very high quality data were produced. It proved rather easy to code reported statements and actions on a five-point directional scale with categories "clearly pro," "probably pro," "uncertain or neutral," "probably con," and "clearly con" in relation to the main policy alternative outlined in each opinion question.

For each type of news source in each opinion case, we summed and averaged all the numerical values of pro-con codes (ranging from +2 to −2, with 0 for neutral) in order to compute measures of total and average directional thrust of the news from each source. The sums and averages of directional codes for television news content prior to T1 and between T1 and T2—for all messages coming from all sources combined and for messages coming separately from each distinct source—constitute our main independent variables. Most of our analysis is based on measures restricted to "relevant" or "highly relevant" source stories because we found that inclusion of less relevant source stories weakened the observed relationships.

Our principal mode of analysis was ordinary least squares regression analysis, in which we estimated the impact of each news source (or all sources taken together) along with opinion levels at T1, upon the level of public opinion at T2. We analyzed all cases together and also each of our two independently selected subsets of 40 cases, as well as subsets of cases involving different kinds of issues (e.g., foreign versus domestic policies), different time periods, and different levels of source credibility (popular versus unpopular presidents).

After testing hypotheses and exploring the aggregate data, we closely examined individual cases of public opinion change, scrutinizing media-reported statements and actions and the precise sequence of events. This served two purposes. First, it helped us with causal inference, shedding light on possibilities of spuriousness or reciprocal influence. Second, it enabled us to generate some new hypotheses about effects on opinion by certain sets of actors not clearly differentiated in our aggregate data.

Findings

We have argued that it is not appropriate to lump all media content together as if it came from a single source with a single level of credibility. It will be useful,

Table 1. Total TV News Content and Opinion Change

Variables	Coefficient
Opinion at T1	0.95[a] (23.25)
TV news content for two months pre-T1	-0.30[a] (-3.82)
TV news content between T1 and T2	0.11 (1.96)
Constant	0.34 (0.14)
R^2 = .88	
adjusted R^2 = .88	
n = 80	

Note: Entries are unstandardized (b) coefficients from a regression of the percentage level of opinion at the time of the second (T2) survey on the level of opinion at T1 and the total media content variables (sums of pro–con scores from relevant stories) for all 80 cases. T values for b's are given in parentheses.

[a]Significant at the .05 level or better by a two-tailed test.

however, to disregard our own advice for a moment and consider the effects upon public opinion of all TV news messages from all sources added together. In this way we can make clear the form of the relationship and especially the roles of pre-T1 news and of opinion at T1 in affecting the level of opinion at T2.

We regressed the level of opinion at T2 (that is, the percentage of respondents at T2 supporting the most prominent alternative offered in the survey question) upon (1) the level of opinion at T1, (2) the total sum of pro–con scores based on all relevant or highly relevant news stories from all sources combined in the two months before T1, and (3) the total pro–con sum in the T1–T2 period.[2] The results are displayed in Table 1.

The level of opinion at T1 is a very strong predictor of the level at T2; in fact by itself, it accounted for more than 85% of the variance in T2 opinion. That is to say, on the whole public opinion is quite stable over these periods of up to a few months. The average magnitude of opinion change is about 5 percentage points. There is a simple first-order autoregressive structure in levels of public opinion (b = .95). Thus regressions using the extent of opinion *change* rather than the level of T2 opinion as the dependent variable produce virtually the same coefficients for all the media content independent variables. Our results based on the level of opinion can equally well be interpreted as effects on opinion change.

Of more interest in Table 1 is the substantial negative effect that pre-T1 news had upon opinion at T2. A net sum of one "probably pro" story before T1 is associated with a drop of nearly one third (.30) of a percentage point in opinion at T2. This might seem puzzling at first, but it follows directly from our point that opinion change should depend upon a discrepancy or change in media content, given that opinion change is partly temporary.

If, for example, the TV news for several months before T1 was full of stories favorable toward a particular policy, so that opinion moved strongly in a pro direction before T1, and if the media were then utterly silent about the policy between T1 and T2, we would expect support for the policy to drop off as people forgot about or discounted the past news.

Thus opinion at T2 would be negatively related to media content before T1. If the discrepancy process worked in a particularly simple fashion (e.g., if all opinion changes were temporary and lasted exactly one period), we would find identical coefficients of opposite sign on corresponding pre-T1 and T1–T2 media variables, and we could use media content change scores to predict opinion change.

But things are not so simple. Part of the effect of media content is no doubt temporary, but part may last a long time, and some effects may be lagged or delayed. With our two-point time series we cannot precisely estimate lags or decay rates.[3] The problem is further complicated by the need to distinguish among news sources, some of which (e.g., commentaries, reports by experts) may have delayed effects and/or unusually slow decays. And the necessity of using T1–T2 periods of varying lengths, not always corresponding to the two-month pre-T1 period, unavoidably reduces the precision of estimating T1–T2 effects. Under these circumstances, our method of entering both pre-T1 and T1–T2 variables separately into regressions allows the maximum information to be extracted from the data.

We have elsewhere noted an interesting "falling off" effect in the polls that is closely related to the negative coefficient for pre-T1 news (Page and Shapiro 1983b; Page, Shapiro, and Dempsey 1984). It appears that pollsters frequently decide to ask survey questions about a particular policy alternative (often phrased as the first or "pro" alternative in the question) when that alternative is a lively topic in the media and public discussion. Thus an initial poll at T1 may reveal high public support for a newly publicized policy idea. Then those initial effects fade, and news coverage may tend to become more mixed, with doubts and opposition beginning to be heard. By the time of a second survey at T2, public support tends to drop a bit. We find a small negative opinion change (2.7 percentage points) on the average in our data set.

Another finding in Table 1 is the weak effect of T1–T2 news content. The estimated coefficient is positive but very small and not quite significant at the .05 level.[4] The logic of our analysis would seem to indicate that T1–T2 variables should have effects of opposite sign and roughly the same magnitude as corresponding pre-T1 variables. But we would not take this nonfinding very seriously. The effects of pre-T1 and T1–T2 media content variables are both estimated to be very small in Table 1 because of the failure to distinguish among different sources of news. If some sources have negative effects and some have positive effects and some have no effects at all, it is not surprising that a measure combining all of them together has little relation to opinion change.[5]

The importance of distinguishing among news sources becomes clearly apparent when we regress opinion at T2 on pre-T1 and T1–T2 news variables from the 10 distinct types of sources (separate sums of pro–con scores for relevant stories from each source). The results are reported in the first column of Table 2.

Taken as a whole, this regression accounts for the great preponderance—more than 90%—of the variance in opinion at T2. Of course much of this is attributable to the effects of opinion at T1, but a comparable analysis with opinion change as the dependent variable still accounts for a very substantial portion of the variance, about half of it (R^2 = .57; adjusted R^2 = .41). This is quite striking, given the inevitable presence of sampling error in the original surveys and the presumably imperfect media summaries and coding procedures.

Again pre-T1 news tends to have negative effects, that is, opposite to those of corresponding T1–T2 variables (see the top half of the first column of Table 2).

Table 2. Effects of TV News from Different Sources

Variables	Full Regression	Some Variables Deleted
Opinion at T1	0.97[a]	0.97[a]
	(23.82)	(25.95)
Pre-T1 news		
President	-0.47[a]	-0.42[a]
	(-2.43)	(-2.48)
Members of president's party	-0.07	
	(-0.32)	
Opposition party	-0.51[a]	-0.53[a]
	(-2.51)	(-2.75)
Interest groups	-0.29	-0.23
	(-1.34)	(-1.17)
Events	-0.53	-0.44
	(-0.99)	(-0.90)
Commentary	2.16	1.87
	(1.79)	(1.66)
Experts	-0.16	0.00
	(-0.11)	(0.00)
Foreign—friendly, neutral	0.22	
	(0.34)	
Foreign—unfriendly	-0.19	
	(-0.37)	
Courts	1.37	1.77
	(0.72)	(1.01)
News between T1 and T2		
President	0.30	0.23
	(1.34)	(1.61)
Members of president's party	-0.09	
	(-0.73)	
Opposition party	0.44	0.46[a]
	(2.00)	(2.39)
Interest groups	-0.38	-0.33[a]
	(-1.93)	(-2.00)
Events	0.54	0.55
	(1.27)	(1.52)
Commentary	4.34[a]	4.17[a]
	(4.25)	(4.57)
Experts	3.37[a]	2.85[a]
	(2.32)	(2.64)
Foreign—friendly, neutral	0.08	
	(0.14)	
Foreign—unfriendly	0.48	
	(0.99)	
Courts	-2.02[a]	-2.08[a]
	(-2.22)	(-2.40)

Table 2 (continued)

Variables	Full Regression	Some Variables Deleted
Constant	-1.34	-1.11
	(-0.56)	(-0.49)
R^2 =	.94	.94
adjusted R^2 =	.91	.92
N =	80	80

Note: Entries are unstandardized (*b*) coefficients from regressions of opinion at T2 on opinion at T1 and the sums of the relevant pro-con news story scores from various sources, for all 80 cases. T values for *b*'s are given in parentheses.

[a]Significant at the .05 level or better by a two-tailed test.

Most important, however, news from different sources tends to have effects of different magnitudes and sometimes different directions. Source differences are apparent both among the pre-T1 variables and among the more readily interpretable T1–T2 variables, displayed in the bottom half of Table 2. We will focus on the latter,[6] treating pre-T1 variables as controls.

News commentary (from the anchorperson, reporters in the field, or special commentators) between the T1 and T2 surveys is estimated to have the most dramatic impact. A single "probably pro" commentary is associated with more than four percentage points of opinion change! This is a startling finding, one that we would hesitate to believe except that something similar has now appeared in three separate sets of cases we have analyzed. It was true of editorial columns in our earlier analysis of 56 two-point opinion series using the *New York Times* as our media source (Page and Shapiro 1983b), in the first 40 TV news cases we collected (Page, Shapiro, and Dempsey 1984), and in the 40 new TV cases, which we analyzed separately before doing all 80 cases together.

We are not convinced that commentators' remarks in and of themselves have such great potency, however. They may serve as indicators of elite or public consensus (Hallin 1984; McClosky and Zaller 1984; Noelle-Neumann 1973, 1980). Or the commentaries may—if in basic agreement with official network sentiment or the attitudes of reporters (perhaps providing cues for reporters)[7]—indicate slants or biases in media coverage that are transmitted to citizens in ways that supplement the statements of the commentators. These could include the selection of news sources and quotes, the choice of visual footage, the questions asked in interviews, camera angles, and so forth.

Certain other estimated effects on opinion are probably important even though some do not reach the .05 level of statistical significance according to a conservative two-tailed test.[8] Most notably—and clearly significantly—a single "probably pro" story about experts or research studies is estimated to produce about three percentage points of opinion change, a very substantial amount. Presidents are estimated to have a more modest impact of about three-tenths of a percentage point per "probably pro" story, and stories about opposition party statements and actions may also have a positive effect.

There are indications, on the other hand, that interest groups and perhaps the courts (in recent years) actually have negative effects. That is, when their statements and actions push in one direction (e.g., when corporations demand sub-

sidies or a federal court orders school integration through busing) public opinion tends to move in the opposite direction. We are not certain about the negative effect of courts, however, because of the instability of coefficients across data sets.

Certain kinds of news appear on the average to have no direct effect at all upon opinion, or less impact than might be expected. The president's fellow partisans, when acting independently of the president himself, do not appreciably affect opinion. Events may move public opinion indirectly, but they do not speak strongly for themselves. They presumably have their effects mainly through the interpretations and reactions of other news sources. The same applies to statements and actions from foreign countries or individuals, whether friends or foes. U.S. citizens apparently do not listen to foreigners directly but only through interpretations by U.S. opinion leaders.

The marked distinctions among types of news fits well with our idea that information from different sources has different degrees of credibility. It is quite plausible, for example, that the public tends to place considerable trust in the positions taken by network commentators and (ostensibly) nonpartisan experts. Some other sources may be considered irrelevant. Still others, like certain interest groups that presumably pursue narrowly selfish aims, may serve as negative reference points on public issues (see Schattschneider 1960, 52–53). Similarly, the federal courts may have served as negative referents in the 1970s and the early 1980s because of their unpopular actions on such issues as busing and capital punishment. In any case, it is clearly important to distinguish among sources of news.[9]

In the second column of Table 2, we report the results of a modified regression analysis in which we dropped some variables (party of the president, foreign friends and foes) that had small and unreliably estimated coefficients in the previous regression. The results are much the same except that most of the coefficients are more stable and the effects of interest groups and opposition party appear statistically significant even by the conservative two-tailed test. News commentary and experts remain the most powerful sources of opinion change.

An interesting finding is that while most of the news variables have pre-T1 coefficients opposite in sign to those for T1–T2—consistently with the discrepancy and temporary effect hypothesis—commentary does not. Commentaries may in fact have lagged positive effects that take time to operate as the commentators' views (or the consensuses or biases they reflect) diffuse through the political system. By the same token, part of the negative effect of interest groups may be a lagged one as well.

For one news source, namely presidents of the United States, we were able to explore the credibility issue directly. We consider a president's popularity—that is, the percentage of U.S. citizens who approve his "handling of his job" according to the Gallup poll—to be a good indicator of the general level of trust and confidence in a particular president. When a president is popular we would expect people to put more faith in what he says and does and to be more prone to change their opinions accordingly. In order to test this hypothesis we partitioned our data into two subsets of cases: one in which, at the time of the T1 survey, the president had an approval rating of 50% or higher (n = 35); and the other in which approval was less than 50% (a larger n = 45 in the unhappy period studied). We performed the analysis of TV news impact separately for each of these subsets of cases, with the results displayed in Table 3.

When presidents are popular, they tend (though the estimate falls short of statistical significance) to have a small positive effect on public opinion. Each "probably

Table 3. Presidential Popularity and TV News Effects on Opinion

Variables	When Presidents Were Popular	When Presidents Were Unpopular
Opinion at T1	0.89[a]	1.00[a]
	(10.78)	(16.77)
Pre-T1 news		
President	-0.64	-0.66
	(-0.97)	(-1.50)
Members of president's party	-0.19	-0.50
	(-0.32)	(-0.77)
Opposition party	-0.69	-0.71
	(-1.14)	(-1.22)
Interest groups	-1.19	-0.52
	(-1.54)	(-1.28)
Events	-3.07	0.63
	(-1.24)	(0.70)
Commentary	1.00	1.85
	(0.51)	(0.57)
Experts	-3.64	-4.44
	(-1.35)	(-1.09)
Foreign—friendly, neutral	0.91	1.86
	(0.75)	(1.10)
Foreign—unfriendly	-0.61	-15.55
	(-0.71)	(-0.96)
Courts	-2.52	2.19
	(-0.37)	(0.76)
News between T1 and T2		
President	0.58	0.05
	(1.55)	(0.05)
Members of president's party	-0.41	0.40
	(-1.79)	(0.82)
Opposition party	0.84[a]	0.23
	(2.18)	(0.50)
Interest groups	-0.15	-0.46
	(-0.44)	(-0.41)
Events	0.53	1.15
	(0.53)	(0.60)
Commentary	2.51	6.16
	(1.56)	(1.74)
Experts	7.86	6.89[a]
	(1.46)	(2.39)
Foreign—friendly, neutral	-2.57	-0.51
	(-1.94)	(-0.46)
Foreign—unfriendly	-1.04	3.78
	(-1.07)	(0.73)
Courts	0.52	-0.91
	(0.26)	(-0.56)

Table 3 (continued)

Variables	When Presidents Were Popular	When Presidents Were Unpopular
Intercept	4.82	-3.72
	(1.02)	(-1.01)
R^2 =	.97	.95
adjusted R^2 =	.93	.91
N =	35	45

Note: Entries are unstandardized (b) coefficients from regressions of opinion at T2 on opinion at T1 and the sums of relevant news story pro–con scores from various sources. "Popular" presidents had Gallup poll approval ratings of 50% or more at T1; unpopular presidents had ratings under 50%. T values for b's are given in parentheses.

[a]Significant at the .05 level or better by a two-tailed test.

pro" statement or action is estimated to produce more than half a percentage point of opinion change. Part of the effect is undoubtedly temporary and part reciprocal. The impact presumably could not be multiplied indefinitely by talkative presidents because of potential saturation and overexposure and the reporters' and editors' desires for fresh topics to cover. Still, this constitutes some evidence that a popular president does indeed stand at a "bully pulpit." On an issue of great importance to him he can hammer away with repeated speeches and statements and can reasonably expect to achieve a 5 or 10 percentage point change in public opinion over the course of several months (see Page and Shapiro 1984).

Unpopular presidents, in contrast, apparently have no positive effect on opinion at all. They may try—like Glendower in *Henry IV*—to call spirits from the vasty deep, but none will come.[10]

There are some indications that the effects of other news sources interact with presidential popularity. While the full set of possible first-order interactions is too complicated to model with confidence given the number of cases we have, these separate popular and unpopular president regressions indicate that commentaries may have their strongest effects when presidents are unpopular. Perhaps news commentators substitute for a respected leader, challenging the one that is out of favor. In addition, administration officials and the president's fellow partisans in Congress and elsewhere, when acting independently of a popular president, appear to have a slightly negative impact on opinion, whereas they may have positive effects when presidents are unpopular. The opposition party, rather strangely, seems especially potent when presidents are popular. In short, there may be some substantial differences in the dynamics of opinion change depending upon whether the president in office at a particular time is popular or not.

Discussion

Our examination of a number of specific cases of opinion change has bolstered our general confidence in the aggregate findings. It has also illuminated certain issues of causal inference and has generated some new hypotheses about further differentiations among different actors or sources of news. Because we have reported on the cases in detail elsewhere (Page, Shapiro, and Dempsey 1985a, b), we will mention only a few important points about particular news sources.

News Commentary

The most dramatic finding in Table 2 is the strong estimated impact of news commentary. Our examination of specific cases provides a number of instances in which the statements of news commentators and reporters clearly parallel opinion change. Examples include Howard K. Smith's praise for Nixon's policies and his criticism of calls for unilateral withdrawal from Vietnam in 1969; various newsmen's support for continued slow withdrawal from Vietnam during 1969-70; commentary favoring conservation and increased production rather than stopping military aid to Israel in order to get cheap oil during 1974-75; Smith's and others' support for more attention to the Arabs during 1974-75 and during 1977-78; Eric Severeid's, David Brinkley's, and Smith's advocacy of campaign contribution limits in 1973; Brinkley's and Smith's backing of stricter wage and price controls during 1972-73; John Chancellor's editorializing on the importance of fighting unemployment (versus inflation) in 1976; Smith's support for federal work projects in 1976; and commentaries in the spring of 1981 that Reagan's proposed tax cuts would benefit the wealthy.

Our regression estimate of very large commentary effects, controlling for all other news sources, indicates that something substantial was going on. We cannot entirely rule out reciprocal effects of public opinion upon audience-seeking reporters and media, but in many cases, the timing of news commentary shortly after T1 polls indicates some kind of genuine influence upon opinion at T2.

The exact nature of that influence is harder to judge, however. We would not claim that individual news commentators like Howard K. Smith—for all the esteem in which they are held—are, in themselves, the biggest sources of opinion change (but cf. Freeman, Weeks, and Wertheimer 1955). We do not believe that Walter Cronkite single-handedly ended the Vietnam War with his famous soul-searching broadcast in 1968.

Instead, the commentary we have examined may reflect the positions of many journalists or other elites who communicate through additional channels besides TV news or even a widespread elite consensus in the country (see McClosky and Zaller 1984). Or commentators' positions may be indicators of network biases, including subtle influences of reporters and editors upon the selection of news sources and upon the ways in which stories are filmed and reported. Or, again, commentators and other sources with whom they agree may (correctly or not) be perceived by the public as reflecting a climate of opinion or an emerging national consensus on an issue, which may weigh heavily with citizens as they form their own opinions (see Lippmann 1922; Noelle-Neumann 1973). With our present data, we cannot distinguish among these possibilities. But news commentators either constitute or stand for major influences on public opinion.

Experts

According to our estimates in Table 2, those we have categorized as "experts" have quite a substantial impact on public opinion. Their credibility may be high because of their actual or portrayed experience and expertise and nonpartisan status. It is not unreasonable for members of the public to give great weight to experts' statements and positions, particularly when complex technical questions affect the merits of policy alternatives.

The existence of a reciprocal process, influence by public opinion upon experts, cannot be ruled out (particularly to the extent that the audience-seeking media decide who is an expert based on the popularity of his or her policy views), but it is probably limited in the short run because experts do not face immediate electoral

pressures—that is, public attitudes may ultimately influence who are considered experts and what their basic values are, but once established, experts are less likely than presidents or other elected officials to bend quickly with the winds of opinion.

One striking example of the influence of expert opinion as reported in the media concerns the Senate vote on the SALT II arms limitation treaty. Public support for the treaty dropped 5.5% from February to March 1979 and 19% from June to November. During both periods many retired generals and arms experts spoke out or testified against the treaty, citing difficulties of verification and an allegedly unequal balance of forces favoring the Soviets.

Experts seem also to have been important in building support for the 1981 AWACs sale to Saudi Arabia; in increasing skepticism about Reagan's tax cuts between May and June 1981; in cooling off enthusiasm for a tax on large cars in 1974; and in encouraging support for public financing of political campaigns (1973) and for banning handguns (1981).

We cannot tell from the present data how accurate or inaccurate expert testimony tends to be. There is reason to believe, for example, that the Russian scare of the late 1970s and early 1980s was greatly overblown (Halloran and Gelb 1983; Sanders 1983). Nor can we say much about the possibility that interest groups are important in funding and publicizing favorable expert studies (Saloma 1984) or that the media may be biased in choosing which experts to feature (perhaps favoring, for example, the political tides of the day). Such matters are quite important for any conclusive assessment of the role of the public in democracy, and we plan to pursue them further.

Presidents

As we have seen, public opinion tends to shift somewhat in the direction supported by a popular president. Our single equation regression analysis, however, cannot by itself exclude the possibility of reverse or reciprocal influence. Rather than leading the public, presidents may sometimes take positions (or make policy) in *response* to public preferences or in anticipation of future changes in public opinion (see Page and Shapiro 1983a). Popular presidents may be more apt than unpopular ones to try this and to succeed at it, hence, perhaps, their popularity in the first place (which is presumably augmented by taking popular stands).[11] Lacking continuous survey data between T1 and T2, we cannot be sure that unmeasured opinion did not change before some of the T1–T2 news reports that we have taken as causally prior. Nor, of course, can we be sure that presidents did not anticipate opinion changes.

In this situation our scrutiny of specific cases has been helpful. It has not ruled out causal complexities. On the contrary, we are convinced that the relationship between presidents and public opinion is reciprocal, with each influencing the other (Page and Petracca 1983). But numerous cases support the inference that popular presidents' actions and statements reported in the media do affect public opinion. These include President Nixon's persistent opposition to accelerating U.S. troop withdrawals from Vietnam during 1969, 1970, and 1971; Reagan's 1981 argument for AWACS airplane sales to Saudi Arabia; Carter's 1977–78 increased attention to Arab countries; Carter's early 1980 movement (during a temporary peak in popularity) toward toughness in the Iranian hostage crisis; Reagan's 1982 bellicose posturing toward the Soviet Union; Ford's 1974–75 defense of military spending; Ford's 1976 and Carter's 1980 advocacies of cuts in domestic spending; and, perhaps, Nixon's 1972–73 support for wage and price controls.

On the other hand, as our regression results showed, unpopular presidents do not have much success at opinion leader-

ship. In a number of cases unpopular presidents made serious efforts to advocate policies but failed to persuade the public. This was true of Ford's attempts to increase military spending in 1976 and his resistance to jobs programs and health and education spending in the same year. Jimmy Carter in early 1979, with his popularity at 43% approval and falling, failed to rally support for SALT II. Carter was also unsuccessful at gaining significant ground on gasoline rationing, the military draft, or the Equal Rights Amendment in 1979 and 1980. Even Ronald Reagan, when near a low point of popularity (44%) in mid-1982, failed to move opinion toward more approval of a school prayer amendment to the Constitution. Because this distinction between popular and unpopular presidents emerged clearly in our previous analysis of newspaper data (Page and Shapiro 1984), we are inclined to believe that it is real (though modest in magnitude) even though the popular president effect does not quite reach statistical significance in Table 3.

Interest Groups

Our regression analysis indicated that groups and individuals representing various special interests, taken together, tend to have a negative effect on public opinion. Our examination of the cases supports this point but also suggests that certain kinds of groups may have positive effects while others have negative impact.

We found many cases (more than 20) in which public opinion unequivocally moved *away* from positions advocated by groups and individuals representing special interests. In some cases the groups may have belatedly spoken up after public opinion had already started moving against their positions, producing a spurious negative relationship. But in many instances they seem actually to have antagonized the public and created a genuine adverse effect.

Such cases include Vietnam War protestors from 1969 to 1970, protestors against draft registration in 1980, and perhaps the nuclear freeze movement in 1982. U.S. citizens have a long history of opposition to demonstrators and protestors, even peaceful ones, and apparently tend not to accept them as credible or legitimate sources of opinion leadership.[12]

In general, the public apparently tends to be uninfluenced (or negatively influenced) by the positions of groups whose interests are perceived to be selfish or narrow, while it responds more favorably to groups and individuals thought to be concerned with broadly defined public interests. The best examples of the latter in our data are environmental groups and perhaps also general "public interest" groups like Common Cause.

From 1973 to 1974, for example, support for leasing federal land to oil companies declined as TV news reported conservationists challenging the positions of the profit-seeking and presumably less credible oil companies. During the same period, support for a freeze on gasoline, heating, and power prices increased a bit despite opposition by gas station owners and oil companies.

Not only business corporations, but also some mass membership groups representing blacks, women, the poor, Jews, and organized labor seem to have been held in disrepute[13] and to have had null or negative effects on opinion about issues of direct concern to them, including social welfare policies and some Middle East issues.

Events, Foreign Countries, and Other Sources

The fact that our regression analysis showed some types of news sources to have, on the average, no clearly positive or negative effects upon public opinion, does not mean that such sources never have effects. As the example of interest

groups suggests, a negligible net effect might conceal offsetting impacts by particular subclasses of sources under particular conditions. If it were feasible to subdivide our 10 source categories further, such effects would presumably be revealed by the statistical analysis.

Among the presidents' fellow partisans, for example, it might be useful to distinguish administration officials from congressional leaders, who may have more independence and a different impact upon public opinion. In the opposition party, too, key congressional leaders and media stars may be more influential than the rank and file.

For foreign actors it would perhaps be useful to distinguish statements (e.g., verbal threats) from actions or policies (e.g., military attacks). It is not easy to code either one so as to correspond to likely opinion change. Certain prominent foreign actors (e.g., Winston Churchill or the Pope) may merit special treatment, and our classification of foreign sources as friendly or unfriendly should perhaps be expanded to allow for finer distinctions.

We initially expected that objective events not attributable to particular actors—anonymous terrorist actions, changes in the rates of unemployment and inflation, natural disasters, and the like—might have substantial effects on public opinion. Contrary to this expectation, our aggregate analysis revealed little or no net direct effect of events. Examination of specific cases indicated that certain kinds of events probably do have appreciable impacts, especially changes in the consumer price index or unemployment rates, which can be felt directly by workers and consumers in their daily lives. Finer distinctions among types of events and allowance for variations in magnitude would permit quantitative estimates of such effects. We have come to believe, however, that much of the impact of objective events is indirect, mediated by U.S. political leaders and commentators and experts in ways that we have not yet fully untangled.[14] Events—like statements and actions from foreign countries—seldom speak directly and unambiguously to the public; rather they affect public opinion mostly through the interpretations and reactions of U.S. elites.

Conclusion

We believe we have identified the main influences on short-term and medium-term opinion change.

Our analysis does not offer a full account of certain glacial, long-term shifts in public opinion that reflect major social, technological, and demographic changes such as rising educational levels, cohort replacement, racial migration, or alterations in the family or the workplace. The decades-long transformations in public attitudes about civil liberties, civil rights, abortion, and other matters surely rest (at least in an ultimate causal sense) upon such social changes.[15] If news reports play a part in such major opinion shifts, they may do so mainly as transmitters of more fundamental forces.

Within the realm of short- and medium-term effects, however, we have had striking success at finding out what moves public opinion. Our TV news variables, together with opinion at the time of an initial survey, account for well over 90% of the variance in public opinion at the time of a second survey. The news variables alone account for nearly half the variance in opinion change.

This success is especially remarkable because of the many possible sources of error that might be expected to reduce our explanatory power: sampling and measurement error in the original opinion surveys; imprecision in the published news summaries and in our coding scheme; the varying lengths of T1–T2 periods and our inability precisely to model lagged effects or decay rates; and the lack of provision for differential audi-

ence receptivity or different population subgroup effects, not to mention our ignoring of possible opinion influences not reflected in TV news. Improvements in methodology would presumably reduce random error and strengthen the findings still further. But the present analysis already accounts for the bulk of observed change in public opinion concerning policy choices.

The processes of opinion change are not simple. In order to account for changes between two opinion surveys, for example, it is essential to examine media content before the first survey. *Discrepancies* between current news and prior news (or prior opinion) are important. Part of the media impact is temporary so that there is a tendency for opinion in the T1–T2 period to drift back, to move in a direction opposite to the thrust of the media content prior to T1.

Moreover, it is important to distinguish among news *sources* rather than aggregating all media content together. The effects of news from different sources vary widely.

Among the sources we examined, the estimated impact of news commentary is strongest of all, on a per-story basis, though such messages are aired less frequently than those from other sources. The causal status of this finding, however, is uncertain. Commentary may be an indicator of broader influences, such as media bias in the selection and presentation of other news, of consensus among the U.S. media or elites generally, or of a perceived public consensus.

Experts, those perceived as having experience and technical knowledge and nonpartisan credibility, also have very sizable effects. A policy alternative that experts testify is ineffective or unworkable tends to lose public favor; an alternative hailed as efficient or necessary tends to gain favor.

We found that messages communicated through the media from or about popular presidents tend to have positive effects on opinion. Presidents respond to public desires, but they can also lead public opinion (see Page and Shapiro 1984). Active presidential effort can be expected to yield a 5- or 10-percentage point change in opinion over the course of a few months.

News commentators, experts, and popular presidents have in common a high level of credibility, which we believe is crucial to their influence on the public. Rational citizens accept information and analysis only from those they trust. In contrast, news sources with low credibility, such as unpopular presidents or groups perceived to represent narrow interests, generally have no effect, or even a negative impact, on public opinion.

Some of these findings might be thought to be limited to the recent period we studied, in which the public has relied heavily on TV and is better educated and more attentive to politics than U.S. citizens in the past. Our confidence in the generality of the findings, however, is bolstered by their consistency with our previous analysis (using newspaper stories) of opinion change from 1935 onward (see Page and Shapiro 1983b, 1984). This similarity also reinforces the observation that the national news media in the U.S. are very much of a piece. They all tend to report the same kinds of messages concerning public policy, from the same sources. This can be attributed to the norms and incentives—and the organizational and market structure—of the news industry and especially to the pervasiveness of the wire services (see Epstein 1973; Gans 1980; Roshco 1975). In this respect the contents of one medium is a good indicator of the content of many media.

In terms of our concerns about democratic theory, it is interesting to observe that relatively neutral information providers like experts and news commentators apparently have more positive

effects (at least direct effects) than do self-serving interest groups. It is also interesting that popular presidents, who presumably tend to embody the values and goals of the public, are more able than unpopular ones to influence opinions about policy. These findings suggest that objective information may play a significant part in opinion formation and change and that certain of the more blatant efforts to manipulate opinion are not successful.

On the other hand, unobtrusive indirect effects by special interests—through influences on experts and commentators, for example—may be more dangerous than would be a direct clash of interests in full public view. Clearly there is much more to be learned before we can be confident about the fundamental sources of influence on public opinion. The same is true of judging the quality of information received by the public.

In order to judge to what extent the public benefits from constructive political leadership and education and to what extent it suffers from deception and manipulation, we need to examine the truth or falsehood, the logic or illogic, of the statements and actions of those who succeed at gaining the public's trust (see Bennett 1983; Edelman 1964; Miliband 1969; Wise 1973; contrast Braestrup 1983; Robinson 1976; Rothman 1979). This applies to the sources whose messages are conveyed through the media and to the media themselves. There is much to learn about whether various sources lie or mislead or tell the truth; about how accurately or inaccurately the media report what the sources say and do; and about the causes of any systematic distortions or biases in the selection and reporting of policy-related news.

Notes

All three authors are associated with NORC (formerly National Opinion Research Center), Chicago. A longer version of this paper was presented at the 1985 annual meeting of the American Political Science Association, New Orleans. We have benefitted greatly from the suggestions and comments of Tom Ferguson, Alex Hicks, Henry Brady, Michael MacKuen, Robert Erikson, David Fan, John Zaller, Eleanor Singer, Herbert Gans, Phil Davison, Mathew McCubbins, John Ferejohn, Roger Noll, Barbara Geddes, Gavan Duffy, and especially Garth Taylor. Harpreet Mahajan assisted in preparing the manuscript. We thank the National Science Foundation for research support under Grant No. SES83-08767; the responsibility for analysis and interpretation is our own.

1. This was done by Dempsey for all cases and by Shapiro for some early cases. Shapiro also checked the coding and analyzed the written summaries for several detailed case studies. Any disagreements about coding were resolved through meetings and discussion. Some reliability analysis was done, with Dempsey and Shapiro coding cases independently. Their intercoder reliability coefficients for the variables coded were in the .7 and .8 range. For the all-important pro-con codes, the two authors never disagreed by more than one unit on the 5-point scale.

Coding, verifying, and keypunching the data for the 80 cases took an immense effort. More than 10,000 hours were spent preparing the case level, aggregated data file based on 10,950 source stories (messages or data lines). We are grateful to the following research assistants for their diligent work: Amy Richmond, Karl Mueller, Mandy Kwock, Sasha Heid, Joe Torres, Peter McCarthy, Marianne Eismann, Chris Hill, Dan Sakura, Susan Rosenberg, Kathy Szydagis, Francis Kwakwa, John Kendzior, Mennette Masser, Jim Martin, Lance Selfa, Bill Sullivan, Wayne Arney, Ion Motkin, and Ellen Seebacher.

2. We performed the analysis for *average* media content (mean pro-con codes) as well as for sums. Averages do not account nearly as well for opinion change, however; the volume as well as the directional thrust of news is important. Hence we report the results for sums only.

3. For sophisticated efforts to do so using longer time series see Erbring (1975) and MacKuen (1981, 1983) on agenda setting and Fan (1984, 1985a-c) on a few policy preference items.

4. Given our unusual sampling scheme, the reported significance levels may be taken as referring to a hypothetical universe of similar cases (weighted by survey organization) or as informal indicators of substantive significance. They also provide some protection against erroneous inferences due to random measurement errors in the survey data and media coding. As we will note below, however, the two-tailed t test is quite conservative—probably too conservative—given our past work with different data sets.

5. The T1-T2 coefficient is probably reduced

more than the pre-T1 because of measurement error due to the variation in T1–T2 period length.

6. The interpretation of pre-T1 coefficients is not entirely straightforward. By the logic of a partial adjustment model, they could be considered estimates (with reversed signs) of temporary effects: that is, effects that appear in the T1 opinion measurement but disappear by T2. This interpretation is complicated, however, by the apparent presence of some lagged positive effects of pre-T1 media content on opinion at T2. Because we cannot identify lags or decay rates with our short time series, we cannot sort out these complexities. We have, therefore, chosen to focus our interpretation on the T1–T2 variables (not attempting to distinguish what part of their effects lasts how long), treating pre-T1 factors as controls. We should once again note, however, that the uneven T1–T2 periods introduce measurement error that may depress T1–T2 estimates relative to pre-T1 estimates.

7. We are indebted to Tom Ferguson for this point.

8. Our previous data analyses gave us a priori expectations that would justify a more liberal one-tailed test. By the same token, a macrotest involving all three data sets would indicate that repeated estimates of small coefficients with the same sign were highly unlikely to arise by chance.

9. Fan (1985c) reports substantial media effects upon opinion about defense spending despite all news sources being combined. It is not clear whether special characteristics of the defense issue produce this result or whether it is applicable to other issues.

10. Our thanks to Jim Davis for improving our recollections of Shakespeare.

11. Mark Petracca and Jeffrey Tulis, among others, have emphasized this point.

12. This is not to deny that protestors may indirectly play a role in moving the public and policy makers, for example, against the Vietnam War (see Burstein 1979; Burstein and Freudenberg 1978). Protestors raised the domestic costs of the war and expanded its visibility, and, in the long run, many of their positions met the test of reality and were accepted as correct.

13. Ideally one would gather extensive survey data bearing directly upon the credibility and popularity of such groups at various times and use it explicitly in the analysis. The limited data available support our assessment of the relatively low level of public esteem in recent years for organized labor, special economic interests, and certain liberal groups, as well as the greater credibility of environmental and public interest groups (see Lipset and Schneider 1983).

14. Before we controlled for other sources, events (the T1–T2 pro–con sum) were significantly related to opinion change: a b coefficient of 1.11 ($t = 2.56$, $p < .05$), while controlling for pre-T1 events ($b = -0.80$, $t = -1.44$, n.s.). This suggests that exogenous events may have large indirect effects through other sources, effects that vanish when those sources are included in the regression as in Table 2.

15. See, for example, Davis (1975). Page and Shapiro are currently completing a monograph on changes in U.S. public opinion since 1935, which considers long-term social changes as well as media-reported influences.

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