



## Information, Values, and Opinion

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# INFORMATION, VALUES, AND OPINION

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*P*ast research has modeled mass opinion change as a two-step process involving reception of political communication and acceptance or rejection of that communication. I propose a two-message version of the reception-acceptance model, in which citizens are exposed to two opposing communication flows, either or both of which may affect their opinions. Variation over time in the relative intensity of the opposing communications, along with citizen differences in attention to politics and in political values, interact in the model to explain both cross-sectional patterns of mass opinion and opinion change across surveys. The model, which is applied to data on the Vietnam War, illuminates two research problems: how complex information flows diffuse through a mass audience and how this information shapes mass belief systems.

**E**very opinion is a marriage of information and values—information to generate a mental picture of what is at stake and values to make a judgment about it. I propose a model of how this union occurs. The model specifies how variations over time in the amount and directional thrust of information carried in the mass media, people's differential attention to this information, and people's political values jointly determine the changing contours of public opinion on major issues. Although the model is fully tested on data from only one case, public opinion toward the Vietnam War between 1964 and 1970, other data are examined in order to indicate the model's broad significance.

## Theoretical Background

### Information, the Mass Media and Opinion Change

*Information*, as I use the term, refers exclusively to the flow of political infor-

mation in the media, including news reports, commentaries, and elite leadership cues. Thus, my examination of the effects of information on opinion is, in effect, an examination of the effects of the media on opinion.

One can distinguish two approaches to media studies. One demonstrates media effects by matching aggregate-level changes in public opinion with changes in the content of the mass media (e.g., Brody 1991; Fan 1988; Page and Shapiro n.d.). When, as is often the case, the media carry countervailing information (some messages pushing opinion one way, some the other), it is possible to show that each of the opposing information flows has a definite impact on opinion.

A second approach, focusing on the individual-level dynamics of change, shows that mass communications do not affect all citizens equally or in a straightforward way. Effects, rather, depend on a two-step process involving (1) exposure to, and reception of, communications carried in the mass media and (2) acceptance

of the contents of the communication, where a person's level of political awareness affects probabilities of both reception and acceptance (Converse 1962; McGuire 1969; MacKuen 1984; Zaller 1987). Thus, Converse (1962) has shown that the persons most susceptible to influence in a political campaign may be those at middle levels of political awareness. The most aware are most heavily exposed to the campaign but are also most able to defend their existing beliefs; hence, their attitudes are little influenced. The least aware pay so little attention to politics that they are insulated from efforts to change their opinions; hence, they, too, tend to be stable. This leaves persons in the middle levels of awareness (people who are attentive enough to encounter new information but not sophisticated enough to be able to resist) most susceptible to influence. In this paper, I refer to this two-step process as the reception-acceptance model of media effects.

This classification of media studies, although not exhaustive, highlights characteristic limitations of many studies. The first type of study, in relying on aggregate data, reveals little about the individual-level dynamics of persuasion. The second type, using data from one or two cross-sectional surveys at a time, cannot link opinion change to graduated changes in the content of the media. Finally, neither type of study has been able to link a two-sided information flow (i.e., one carrying both pro and con messages on a given issue) to an individual-level model of the dynamics of persuasion.

The model to be developed in this paper combines the strengths and avoids the limitations of the two approaches. The model accommodates opinion change over multiple time periods. It captures individual-level differences in both reception of, and resistance to, persuasive information. Finally, it takes central account of the effects of two-sided and differentially intense information flows.

### Values As Predispositions To Resist Persuasion

*Values*, as I use the term, refers to any relatively stable, individual-level predisposition to accept or reject particular types of arguments. Values may be rooted in personality, philosophy, ideology, gender, experience, religion, ethnicity, occupation, or interest (among other things). Party attachments, which are often the basis on which people accept or reject political arguments (e.g., Belknap and Campbell 1951; Mueller 1973) also qualify as values under this definition. This usage of values is broader than is customary, but it is consistent with standard definitions<sup>1</sup> and has the advantage of permitting my argument to be pitched at a high level of generality.

A critical question about values is how, exactly, they predispose acceptance or rejection of persuasive messages. Do individuals personally analyze arguments to determine which are consistent with their values? Or do they instead rely on external cues, especially the positions of trusted groups or leaders?

Philip Converse, the leading theorist of mass opinion, maintains that few people reason for themselves about how political ideas are related to one another. Rather, to the extent that individuals respond critically to the political ideas they encounter, they rely on "contextual information" from elites about how different ideas "go together" and thereby "constrain" one another (Converse 1964).

The implication of this argument, for a situation involving mass response to persuasive communications is that people react to new information on the basis of cues concerning what types of political groups favor or oppose a given idea. However, as Converse also stresses, knowledge of these cues is likely to depend on general levels of political awareness. Hence, only people attaining fairly high levels of awareness are likely

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to respond to communications in a manner that is "constrained" by their values.

The psychological literature on opinion change lends support to the view that individuals typically fail to reason for themselves about the persuasive communications they encounter. A persistent finding of this literature has been that cues about the "source" of a message greatly affect how individuals judge the message. Reviewing this evidence in an influential 1969 article, McGuire wrote that the "message receiver" "can be regarded as a lazy organism who tries to master the message contents only when it is absolutely necessary to make a decision. When the purported source is clearly positively or negatively valenced, he uses this information as a cue to accept or reject the message's conclusions without really absorbing the arguments used" (p. 198).<sup>2</sup>

Within political science, there is an important group of studies that also maintains that citizens respond to political arguments on the basis of partisan assessments of the trustworthiness of sources (Belknap and Campbell 1951; Campbell et al. 1960; Gerber and Jackson 1990; Key 1965; Mueller 1973; Page and Shapiro n.d.; Pollock, Lilie, and Vittes 1989; Price 1989).

I, then, will build on a solid foundation in assuming that citizens respond to new information on the basis of external cues concerning the implications of that information for their values—provided that (as Converse emphasizes) they are sufficiently attentive to politics to have learned the cues.

### A Two-Message Model of Mass Persuasion

Let us assume a political world in which, within every time period  $t$  and with respect to every political issue, citizens are presented with two information flows, or *messages*, one tending to

push mass opinion in a liberal direction and the other in a conservative direction. The two messages represent the sum of all directionally valenced communications relating to a given issue in the period.

The model to be developed in this section will explain how, in such a world, variations over time in the relative intensities of the liberal and conservative messages<sup>3</sup> can explain both the cross-sectional distribution of mass opinion at any one time and changes in opinion over time.

Three axioms may now define a *two-message model* as follows:

**AXIOM 1.** *An individual's probabilities of receiving the liberal and conservative messages within any given time period  $t$  are independent, increasing functions of general level of political awareness, where reception indicates that the person has actually taken in and comprehended the message.*

This axiom implies that within levels of awareness, exposure to one side of an argument is uncorrelated with exposure to the other—in other words, that selective exposure does not occur. This seems justified in view of research indicating that to the extent selective exposure occurs, it does so under special conditions that do not typically arise in situations of mass persuasion (Cotton 1985; McGuire 1969; Sears and Freedman 1967; Wicklund and Brehm 1976).<sup>4</sup>

The mathematical form of the reception function is given below by  $R_{ijt}$ , where the subscripts allow reception to vary by individual-level differences in attentiveness ( $i$ ), message ( $j$  = liberal or conservative), and time ( $t$ ).

**AXIOM 2.** *The probability that an individual will resist (i.e., refuse to accept) a message, given reception of it, increases with (1) distance between the values of the individual and the value coloration of the message and (2) the*

*likelihood that individuals will be aware of the elite-supplied "contextual information" that gives messages their colorations.*

This axiom embodies the notion that people do not automatically resist messages that are inconsistent with their values but must also possess sufficient political awareness to have learned the contextual information that conventionally determines what is consistent and what is not. A mathematical function capturing this specification,  $A_{ijt}$ , will be presented.

Before stating the third axiom, it is necessary to define *supporting messages* as those consistent with an existing opinion and *opposing messages* as those which are inconsistent. The final axiom can now be stated as follows:

**AXIOM 3.** *Two types of opinion change—conversion and decay—may occur: (a) when a person accepts an opposing message, having received it, and does not accept a supporting message (whether receiving it or not), the person converts to the opposing view; and (b) if a person accepts no messages in a given period or accepts both a supporting message and an opposing one, the person's initial opinion decays toward no opinion with a fixed probability of (d).*

Aside from the details of the reception and acceptance functions  $R_{ijt}$  and  $A_{ijt}$ , which are discussed below, these axioms fully specify a rather complex set of interactions, as will be shown.

### Deductions from the Two-Message Model

We can use these axioms to write out an expression for the probability that following some time period  $t$ , an individual who initially holds a liberal opinion or no opinion will change to a conservative

opinion. From axioms 1-3a, that probability must be

$$P_{i>>Ct+1} = [R_{iCt}(1 - R_{iLt})]A_{iCt} + R_{iCt}R_{iLt}[A_{iCt}(1 - A_{iLt})]. \quad (1)$$

The first term on the right-hand side is the probability that the individual will receive only a conservative message— $R_{iCt}(1 - R_{iLt})^5$ —times the probability that the person will accept it (once exposed),  $A_{iCt}$ . The second term is the probability that the individual will receive both messages— $R_{iCt}R_{iLt}$ —but accept only the conservative one,  $A_{iCt}(1 - A_{iLt})$ .  $P_{i>>Lt+1}$  can be similarly defined.

One can also write out an expression for the probability that an individual initially holding an opinion will decay to *no opinion*. That probability is  $d$  times the probability that the person either accepts no message or accepts both a supporting and opposing message, which is as follows:

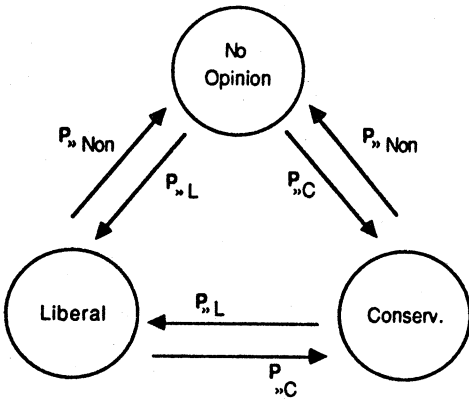
$$P_{i>>Non_{t+1}} = d[(1 - R_{iCt})(1 - R_{iLt}) + R_{iCt}(1 - R_{iLt})(1 - A_{iCt}) + R_{iLt}(1 - R_{iCt})(1 - A_{iLt}) + R_{iCt}R_{iLt}A_{iCt}A_{iLt}] = d(1 - P_{i>>Ct+1} - P_{i>>Lt+1}). \quad (2)$$

This expression is important because it permits estimation of rates of nonopinionation in different segments of the population, depending on the intensities of the two messages and the person's level of attention to politics. Thus, no opinion responses can be regarded as substantively interesting responses in this model rather than (as in most models of public opinion) as missing data.

At some initial moment, everyone has a fixed probability of holding a liberal or conservative opinion or no opinion. Let us call these probabilities  $Lib_{(t)}$ ,  $Con_{(t)}$  and  $Non_{(t)}$ . Then, the probabilities for opinion change defined by equations 1 and 2 (i.e.,

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**Figure 1. Framework of the Two-Message Model**



$P_{>>C}$ ,  $P_{>>L}$ , and  $P_{>>Non}$ ) describe a simple Markov system, shown in Figure 1; the figure, in turn, enables us to specify the proportion of individuals that will still have a liberal opinion at time  $(t + 1)$ . Suppressing the  $i$  subscripts, this term is

$$\begin{aligned} \text{Lib}_{(t+1)} = & \text{Lib}_{(t)} - [P_{>>C} \text{Lib}_{(t)} \\ & - [P_{>>Non} \text{Lib}_{(t)} \\ & + [P_{>>L}(\text{Con}_{(t)} + \text{Non}_{(t)})]. \end{aligned} \quad (3)$$

A parallel expression can, of course, be written for conservative opinion at  $t + 1$ .

With some algebraic manipulation, equation 3 can be rewritten as a difference equation that gives the probability of having a liberal opinion after the passage of  $N$  time periods, as follows:

$$\begin{aligned} \text{Lib}_{(t+N)} = & \text{Lib}_{(t)} \chi^N \\ & + P_{>>L} \frac{1 - \chi^N}{1 - \chi}, \end{aligned} \quad (4)$$

where

$$\begin{aligned} \chi = & 1 - P_{>>C} - P_{>>L} - d \\ & + d(P_{>>C} + P_{>>L}). \end{aligned}$$

One may conceptualize time as consisting of an infinitude of arbitrarily tiny time

units. If so,  $N$  is infinity, in which case the term  $\chi^N$  in equation 4 (a proportion raised to an infinite power) goes to zero. This leaves

$$\begin{aligned} \text{Lib}_{(t+N)} = & P_{>>L} \frac{1 - \chi^N}{1 - \chi} \\ = & \frac{P_{>>L}}{P_{>>C} + P_{>>L} + d - d(P_{>>C} + P_{>>L})} \end{aligned}$$

Thus, opinion at any point in time represents an equilibrium outcome that is independent of starting values. This equilibrium depends, at the aggregate level, on the intensities of the competing information flows and, at the individual level, on people's attention to politics and their values. Opinion change in response to persuasive information—a central topic of my analysis—can be captured as an overtime difference between equilibrium points, where changing equilibria depend on change in the competing information flows.

### Form of the Reception and Acceptance Functions

The first axiom assumes that reception of information increases with political awareness. There are strong theoretical reasons for representing this relationship by the S-shaped logistic functional form rather than the more tractable linear form. First, the model deals in probabilities that vary between zero and one; the logistic function varies naturally between these limits, whereas the linear function does not. On these grounds alone, the logistic function is preferable. A second line of argument is that one can conceptualize reception of a particular idea as a "test" of political awareness that some people will "pass" (through successful reception of the message) and others will "fail." From this point it follows via standard test theory that the relationship between awareness and reception should be described by the normal ogive func-

tion, which is closely approximated by the logistic form (Lord and Novick 1968, chaps. 16, 17). Hence, I assume that the reception function  $R_{ijt}$  in axiom 2 can be represented as the following type of logistic function:

$$\text{Prob(Reception)}_{ijt} = (1 + \text{Exp}[-a_0jt - a_1 \text{Aware}_i])^{-1}. \quad (5)$$

According to equation 5, the reception probability of the  $i^{\text{th}}$  individual rises with political awareness from a floor of 0 to a maximum of 1.0. The steepness of the awareness-induced rise is determined by the  $a_1$  parameter.

The  $a_0$  coefficient captures the loudness of messages in the media. Since intensities of competing messages may differ and since their intensities may also change over time, the  $a_0$  coefficient is subscripted for the directional thrust of the message ( $j = L, C$ ) and time  $t$ . The time  $t$  subscript is especially critical. It enables  $a_0$  to capture changes in the intensities of the competing messages, which in turn generate opinion change.

I turn now to the acceptance function,  $A_{ijt}$ . As before, this function deals with probabilities, so I use a logistic function to represent the negative relationship between awareness and likelihood of accepting a message, as follows:

$$\begin{aligned} \text{Prob(Accept | Reception)}_{ijt} &= (1 + \text{Exp}[b_0 + b_1 \text{Aware}_i \\ &+ b_{2jt} \text{Values}_i \\ &+ b_3 \{\text{Time} \times \text{Values}\} \\ &+ b_4 \text{Time} + \dots b_n X])^{-1}. \end{aligned} \quad (6)$$

This equation requires some explication. Axiom 2 implies that the effect of values on resistance to persuasive communications is doubly contingent. It depends on the availability of elite cues to link values to the given messages and on the person's awareness of these cues.

Equation 6 captures both contingencies. The inclusion of measures of awareness and values within a logistic function makes the effect of each dependent on the level of the other. Thus, values may have little impact except at high levels of political awareness.<sup>6</sup> Meanwhile, the  $b_3$  and  $b_4$  terms permit the effect of values to vary over time in response to changes in the pattern of elite cues. Since elite ideological disagreement over Vietnam was minimal in the early phases of the war but intense at the end, the  $b_3$  term is expected to be positive, thus indicating that the effect of values on opinion increased over time. (The term  $b_4$  is a nuisance term included to allow an intercept shift in the event that  $b_3$  is nonzero; the  $j$  subscript on  $b_2$  is to allow the sign of the coefficient to vary with the directional thrust of the message.)

The ellipses in equation 6 indicate that one could, in the usual multivariate fashion, add multiple indicators of people's values to the acceptance function. Yet in the analysis that follows, I use only two indicators of values at a time. The reason is that my aim is not to disentangle the separate effects of a series of collinear measures but to illuminate the *process* by which values, broadly understood, interact with other types of factors; and this purpose is best served by avoiding multiple indicators.

## The Data

The Center for Political Studies (CPS) surveys conducted during the Vietnam War constitute one of the finest data sets available for studying mass opinion change on a major issue. Among the attractive features of this data set are (1) four separate measurements of an opinion that was rapidly changing; (2) an opportunity to observe public opinion shift in opposing directions (toward greater support for the war from 1964 to 1966 and

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toward lesser support for it after that); and (3) the availability of items from which measures of political awareness and political values can be constructed.

The question available to measure opinions toward the war during the period 1964–1970 is, “Which of the following do you think we should do now in Vietnam?” (1) “Pull out of Vietnam entirely,” (2) “Keep our soldiers in Vietnam but try to end the fighting,” or (3) “Take a stronger stand even if it means invading North Vietnam.”

The second option, because it represents the official policy of both the Johnson and Nixon administrations (Gelb and Betts 1979), will be counted as war support in the analysis that follows, as will the third response option. The pull-out option will be counted as opposition to the war.<sup>7</sup>

The analysis also requires the construction of highly similar measures of awareness and political values in all four surveys, so that similar types of people can be located in each survey. With respect to awareness, this is fairly easy to do. Each survey contains a set of political knowledge items sufficient to build an awareness scale with an alpha reliability of .80 or better. Although the knowledge items vary from year to year, the variation may be assumed to be largely inconsequential.<sup>8</sup> (See Appendix A for a listing of the items.)

Building comparable measures of political values is more difficult. One possible measure of values is a person’s ideological position on the left–right continuum, which can be measured in the Center for Political Studies (CPS) surveys as the difference in feeling thermometer scores for liberals and conservatives. This measure, however, has a major difficulty. Although ideology must function in the model as an exogenous cause of opinion toward the war in Vietnam, it is possible that influence runs partly in the other direction. It is possible, that is, that peo-

ple form evaluations of liberals and conservatives partly on the basis of their opinion on the Vietnam issue rather than vice versa.<sup>9</sup>

Another possibility is to use people’s general feelings of hawkishness or dovishness as the measure of predispositions to support or oppose the war. The advantage of hawk–dove attitudes is that it is the dimension of left–right orientation most likely to affect opinions toward the Vietnam War. The problem is that the 1964–70 CPS surveys contain no direct measure of it.

It is possible, however, to use Franklin’s (1989) two-sample instrumental variables technique to construct a proxy measure of hawk–dove attitudes. This technique, which uses information from one data set to build instrumental variables in another data set, produces measures that are asymptotically unbiased and efficient.

In applying the method to the Vietnam case, I began with the 1988 National Election Study (NES) survey study, which contained items measuring general feelings of hawkishness, such as “Which do you think is the better way for us to keep the peace—by having a very strong military so that other countries won’t attack us, or by working out our disagreements at the bargaining table?”<sup>10</sup>

I next located a set of “auxiliary” predictor variables, that is, variables that were correlated with the hawk–dove items in 1988 *and* were carried in identical form in the 1964–70 CPS surveys. Examples of such variables are sex, religion, and racial attitudes. Finally, using coefficients from an ordinary least squares regression of hawk–dove scores on the auxiliary variables in 1988, I constructed an “instrument” for each person’s hawk–dove feelings. This instrumental variable was then built from the same auxiliary items in the 1964–70 data sets and used as a measure of hawk–dove feelings in those data sets.

With proper care in selecting auxiliary



variables, a predispositional variable constructed in this way avoids the worrisome endogeneity associated with the ideology thermometers. A weakness, however, is that the instrument is only as good as the auxiliary variables that are used to construct it—which in the present case is not very good, since the r-squared on the first stage regression is only .14. (See Appendix B for further details and discussion.)

We have, then, two measures of citizens' value predispositions: ratings of liberals and conservatives and an instrumental measure of hawk-dove feelings. Since neither is without blemish, I use each in parallel analyses. Happily, these analyses produce results that are the same in every important respect.

One final measurement issue needs to be addressed. Although CPS asked its basic Vietnam question in each of four surveys, there is a noteworthy discontinuity. In 1964 and 1966, all respondents were asked whether they were "paying attention to what [was] going on in Vietnam," and only those indicating interest were subsequently asked whether they supported or opposed U.S. involvement. In 1964, some 20% of the respondents failed this minimal test of interest and were not asked whether they supported or opposed the war; in 1966, persons failing to pass the initial interest screen fell to 7%. Then, in 1968 and 1970, the interest screen was dropped, so that only those volunteering a *no opinion* response are counted in that category.

This discontinuity makes it difficult to offer confident estimates of the changes in *no opinion* rates between 1966 and 1968. Yet the trajectory of decline from 1964 to 1966 in *no attention* responses (from 20% to 7%) suggests that the number of such respondents still having no interest in 1968 was small; and, of course, respondents could still volunteer a *no opinion* response to the Vietnam item itself. Some 7% did in 1968, which was down from 9% in 1966 and 13% in 1964. The fact

that volunteered *don't know* rates continued to fall in 1968 despite removal of the interest filter, as well as other published data (Pierce, Beatty, and Hagner 1982, 142), makes it clear that *no opinion* rates did continue falling between 1966 and 1968. But the CPS data may overestimate the amount by which they did so.

This problem can be accommodated by adding a "floor parameter" to the reception function, as follows:

$$\text{Prob(Reception)}_{ijt} = 1 - (1 + f_t + \text{Exp}[a_{0jt} + a_i \text{Aware}_{i,j}]^{-1}, \quad (7)$$

where  $f_t$  changes to reflect the change in question format.

The modified reception function differs from the original equation 5 in only one respect: rather than rising from a minimum value of zero to a maximum of one, it rises from a nonzero floor determined by  $f_t$ . This permits the model to attribute opinions to people whose awareness levels are so low that they are unlikely to have been exposed to any argument but who might nonetheless have responded to the Vietnam question when the *no opinion* filter was removed in 1968. (Alternatively, the additional parameter can be thought of as creating a more flexible, three-parameter reception function.)

### Empirical Results

The model makes multinomial predictions to three categories: support for the war, opposition, and no opinion. These predictions are made across four data sets having 5,002 respondents. Initial estimation of the model indicated that patterns of opinion change were different among ethnic whites than among other groups. A separate analysis was therefore undertaken for blacks and is reported; however, Hispanic and Asian-American respondents have been omitted because there are too few cases for separate analysis.

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**Table 1. Coefficient Estimates for Two-Message Model**

Variables	Value Measure	
	Ideology Thermometers	Hawk-Dove Instrument
<b>Reception function (equation 7)<sup>a</sup></b>		
Awareness ( $a_1$ )	1.33*	1.14*
Floor 64-66 ( $f_t$ )	.00024	.00087
Floor 68-70 ( $f_t$ )	.0026*	.0092*
<b>Acceptance function (equation 6)</b>		
Liberal message intercept ( $b_{0L}$ )	-4.75*	-5.03*
Conservative message intercept ( $b_{0C}$ )	.08	.65
Awareness ( $b_1$ )	.91*	.85*
Values ( $b_2$ ) <sup>b</sup>	.17	.26
Values $\times$ Year ( $b_3$ )	.77*	.71*
Year ( $b_4$ )	-2.15	-1.34
Gender (male = 1)	-.61*	-.84*
Decay parameter ( $d$ in equation 2)	.0025*	.0081*

Source: 1964, 1966, 1968, and 1970 CPS studies.

Note:  $N = 5,002$ . Dependent variable is a multinomial item on Vietnam policy. The awareness and values variables have been standardized. Coefficient descriptions are keyed to equations 2, 6, and 7 in text.

<sup>a</sup>Intercepts for reception function ( $a_{0jt}$ ) are shown in Figure 2 and n. 13.

<sup>b</sup>Coefficient is negative in  $A_{iLt}$ , indicating less resistance to a liberal message, and positive in  $A_{iCt}$ . Liberal poles of these variables are scored high. The gender coefficient also changes signs, depending on message coloration.

\* $p < .05$ , two-tailed test.

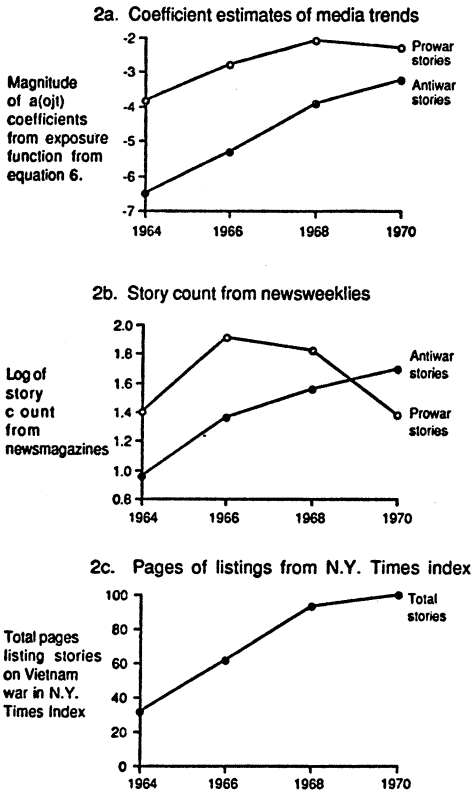
Maximum likelihood coefficient estimates for whites are shown in Table 1.<sup>11</sup> Owing to high collinearity in the estimates of some coefficients, the  $f$ -test is the most appropriate test of the statistical significance of the estimates.<sup>12</sup> When this test is performed, most coefficients in the model—all of the substantively important ones—achieve statistical significance, as indicated in Table 1.

The coefficients specifying the influence of values on the acceptance of war information require comment. As noted earlier, the impacts of ideology and hawk-dove feelings were expected to increase over the course of the war as elite ideological disagreement became more intense. The timing of that increase, however, was left open. The increased impact of values might have occurred either gradually, as elite ideological disagree-

ments intensified; or suddenly, at the point when, owing to elite position taking in Congress and elsewhere, liberalism and conservatism first became associated with different stands on the war (i.e., about the time of the Fulbright hearings in early 1966). Since there was no basis in theory for deciding between these alternative possibilities, it was necessary to investigate them empirically.

When a model was specified to allow ideology (or hawkishness) to take a different coefficient in each year (and hence to increase its impact gradually over time), the impact of ideology (or hawkishness) on opinion tended to rise over time; but almost all of the rise came in 1966. Meanwhile, a model that specified a one-step increase in 1966 fit the data essentially as well as the model that permitted year-by-year increases. Parsimony there-

Figure 2. Three Estimates of Trends in Media Content



fore indicated that the simple, one-step model be used. As Table 1 shows, the impact of the ideology measure in this model increased by a factor of about 3.5 in 1966.

This injection of left-right values into the war debate was a critical element in the evolution of mass opinion on this issue, since the change in elite-supplied "contextual information" about "what goes with what" fueled development of ideological divisions among mass liberals and conservatives.

Let us now examine estimates of the eight  $a_{0jt}$  coefficients from the reception function, which are shown graphically in Figure 2a.<sup>13</sup> In this figure and in the re-

mainder of my analysis, I rely on results from the ideology measure because it enabled the model to fit the data slightly better than did the hawk-dove measure; both sets of results, however, generate the same substantive conclusions.

The  $a_{0jt}$  coefficients in Figure 2 are the model's estimate of the intensities of the pro- and antiwar information flows that were necessary to produce the observed patterns of opinion toward the war. The absolute magnitudes of these coefficients have little meaning, but changes over time in relative magnitudes are important. In particular, the initial rise and subsequent slight decline in the magnitudes of the prowar coefficients indicate that prowar messages became more intense from 1964 through 1968 and then perhaps declined slightly. The antiwar message, for its part, appears to have been always less intense than the prowar message but to have gained steadily after 1964.

To check the plausibility of these implied claims about information flow during the war, I examined Hallin's (1984) published analysis of prowar and antiwar statements in the television news. A central finding of his study was that "spokesmen for administration policy were heavily predominant during the early period [prior to spring 1968], while after Tet there was relative parity between the administration and its critics" (p. 9). Hallin also reports that the overall volume of war coverage increased through about 1965 and remained roughly steady until after 1970 (personal communication, 23 July 1991).

These estimates obviously agree with those of the model. Since, however, Hallin's data are based on a sample of convenience and since his analysis begins in 1965 and focuses on television coverage, I asked a research assistant to undertake an analysis of war reporting over a broader period, 1963-70, and to examine coverage in three news magazines, *Time*, *Newsweek*, and *Life*. The research assis-

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tant was unaware of my expectations as to what the analysis might show. His procedure was to examine each magazine issue in which the Vietnam War or related events (such as antiwar protests) were featured on the cover. He then read all Vietnam stories in that issue, rating each as predominantly prowar in its slant, predominantly antiwar, or offering support for both positions.

The results of the content analysis, as depicted in Figure 2b, bear a rough similarity to the estimates of the model in Figure 2a, as indicated by a Pearson correlation of .79 ( $p < .01$ ) between logged story counts and the exposure coefficients.<sup>14</sup> Substantively, both sets of estimates claim that the intensity of the antiwar message increased continuously from 1964 to 1970. Both also agree that the prowar message gained intensity in the early war years and lost intensity at the end. But there are important differences. The model sees no decline in the overall volume of war coverage and perhaps even a continuous increase, whereas the story count indicates a reduction in news coverage in both 1968 and 1970. Also, the story count indicates that antiwar information predominates by 1970, whereas the model implies that the prowar message remained the more intense message.

In view of the discrepancy between the magazine count on the one hand and Hallin's findings and the estimates of the model on the other, I examined news in a third medium, the *New York Times*. In particular, I did a simple count of pages in the *New York Times Index* devoted to stories about Vietnam. The results, displayed in Figure 2c, agree with the model and with Hallin in suggesting that the total volume of war coverage remained high in the later years of the war.<sup>15</sup>

Also, because of the divergence in estimates of the direction of war news in 1970, I rated the principal *New York Times* stories of 1970, as abstracted in the index.<sup>16</sup> In general agreement with

Hallin's and the model's estimates, I found the directional thrust of these stories evenly balanced.

Different indexes of media content thus give somewhat different results, especially for the period after 1968. It nonetheless appears that the model's indirect estimates of information flow (i.e., estimates derived from public opinion data alone) are both inherently plausible and within the range of the various direct estimates of media content, especially those of newspaper and television coverage of the war.

### Patterns of Support for the War

The coefficient estimates in Table 1 can be used to construct graphical estimates of trends in support of the war. This has been done in Figure 3, which depicts estimated patterns of support for the war among strong liberals and conservatives, as indicated by feeling thermometer scores, at different times and levels of awareness.<sup>17</sup>

It should be noted, first of all, that the patterns in Figure 3 agree with a similarly organized plot of the raw data (not shown), which shows subgroup means by awareness, values, and time. The correlation between the two plots is above .90, and there are no substantively significant differences between them.

In analyzing Figure 3, let us look first at liberals. The top left panel of the figure shows that in 1964, political awareness among liberals bore a positive relationship with support for the war. This exemplifies what has been called the "mainstream" or "follower" model of opinion formation (Gamson and Modigliani 1966; Mueller 1973). The central idea in this model is that when, as in 1964, elites are unified in support of a policy, higher levels of awareness are associated with greater exposure to the elite consensus in the media and hence greater support for it. That U.S. political elites really united in support of the Vietnam War in this

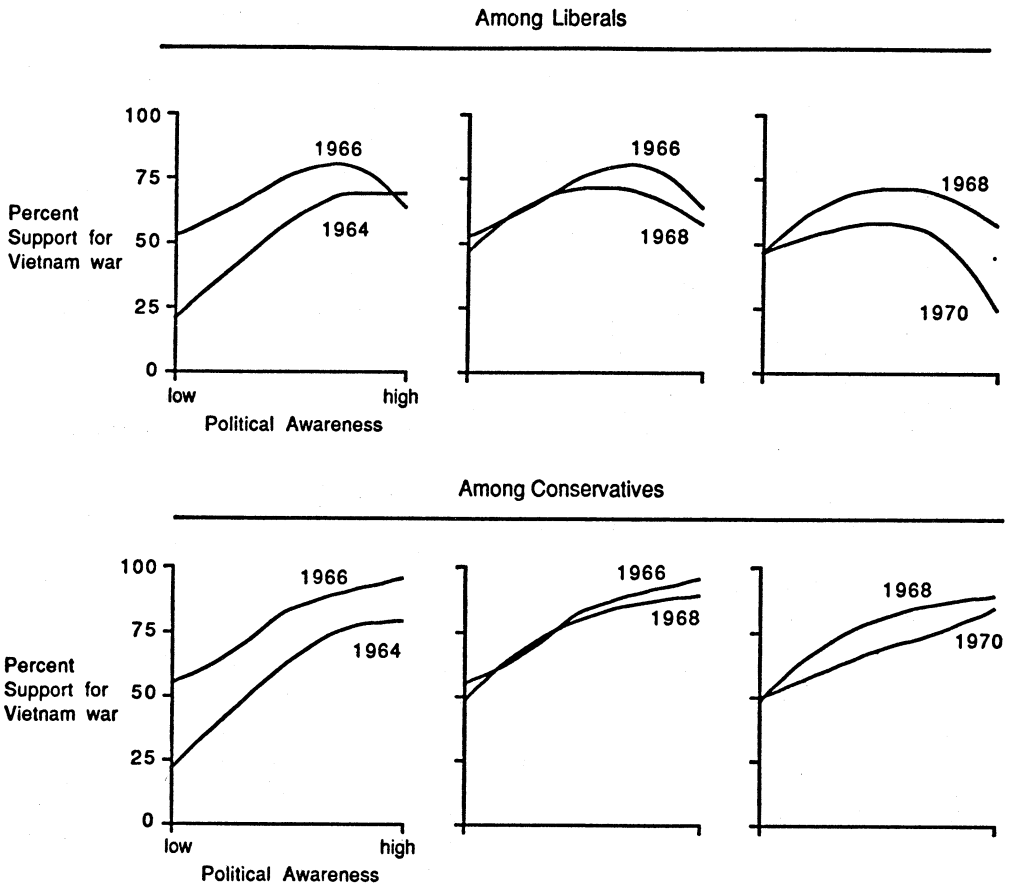
period is clear from the congressional vote on the Gulf of Tonkin resolution, which authorized an open-ended U.S. involvement in Vietnam. This resolution passed without opposition in the House and by a vote of 88 to 2 in the Senate.

By 1966, however, the mainstream consensus was unraveling. Administration policies were being increasingly criticized in Congress, and the media was increasing its antiwar coverage. In reaction, Presi-

dent Johnson mounted a series of "peace offensives," condemnations of "communist aggression," and other publicity actions in an effort to mobilize greater support for the war. Thus, as Figure 2 shows, both the antiwar and prowar messages became "louder" between 1964 and 1966.

These changes in the flow of communications had clear (though, as would be expected, partially offsetting) effects on

Figure 3. Trends in Support for Vietnam War, 1964-1970



Note: Estimates based on coefficients in Table 1.

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the opinions of liberals. Focusing still on the top left panel of Figure 3, we see that the intensified prowar message registered mainly among liberals in the middle-to-low range of awareness. People in this range had previously been only lightly exposed to the prowar message and were readily mobilized when the intensified prowar message reached them. Meanwhile, the nascent antiwar message, though still inaudible to most of the public, began to reach the most politically aware liberals, who, in consequence, became less supportive of the war between 1964 and 1966.

This two-directional opinion change (less aware liberals moving to greater support for the war at the same time that the most aware liberals are moving away from it) makes a critical point, namely, that neither citizen values, nor relative intensity of political information flows, nor citizen attention to political information can alone explain opinion; rather, it is a complex (and highly nonlinear) interaction among them that determines both static patterns of opinion and overtime changes in these patterns.

Figure 2 indicates that between 1966 and 1968, the antiwar message continued to intensify, with effects on liberals that are shown in the top middle panel of Figure 3. Moderately attentive liberals now join their more attentive fellows in beginning to move strongly in an antiwar direction. Finally, as shown at the top right of Figure 3, liberals at all levels of awareness were turning antiwar in 1970. Thus, the antiwar message had achieved sufficient intensity to reach even the less attentive strata of society.

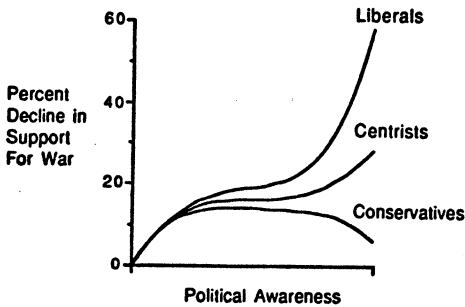
It is worth stressing how exactly the model accounts for the curvilinear patterns of war support evident among liberals from 1966 onward. The most informed liberals are heavily exposed to both messages but are more likely to accept antiwar news because it is more congenial to their values. Moderately

informed liberals may also be exposed to both messages; but if they are exposed to only one, it is likely to be the louder, prowar one. Also, since moderately aware people are, by axiom 2, less able to discriminate between messages on ideological grounds, they often end up simply internalizing the louder message. Together, these points explain the bulge in support for the war among liberals in the middle range of political awareness. Finally, the least informed liberals are, like everyone else, more likely to be exposed to the prowar message if they are exposed to any message at all. But they are often exposed to no message, with the result that they lapse into *no opinion* more frequently than any other segment of the public, thereby exhibiting low levels of war support. In this way, the nonmonotonic pattern of war support among liberals represents an equilibrium outcome in which the effects of pro- and antiwar messages cross-cut one another, but do so to different degrees in different segments of the public.

I turn now to the opinions of conservatives, as shown in the lower half of Figure 3. Except for a step change in war support in 1966 in response to the intensified prowar message of that year, the dominant impression is one of stability. Awareness is strongly associated with support for the war in 1964, when war support was a mainstream norm; and it remained strongly associated in 1970, when Vietnam was merely a conservative norm. This equilibrium outcome is different than that for liberals because conservatives largely resisted the antiwar message to which they, as much as liberals, were increasingly exposed.

Some conservatives did, to be sure, respond to the strong antiwar message of the late 1960s. As Figure 4 indicates, these tended to be *moderately aware* conservatives—that is to say, conservatives who paid enough attention to be exposed to antiwar information but, in contrast to

Figure 4. Changes in Support for Vietnam War, 1968-1970



Note: Figure shows percent of each type of person who supported the Vietnam War in 1968 but switched to opposition by 1970. Estimates are derived from coefficients in Table 1.

highly aware conservatives, were not sufficiently sophisticated to be able to resist it. Among liberals (as Figure 4 also shows), the most sophisticated were most susceptible to change: As sophisticates, they were heavily exposed to liberal anti-war ideas; and as liberals, they were predisposed to accept them.

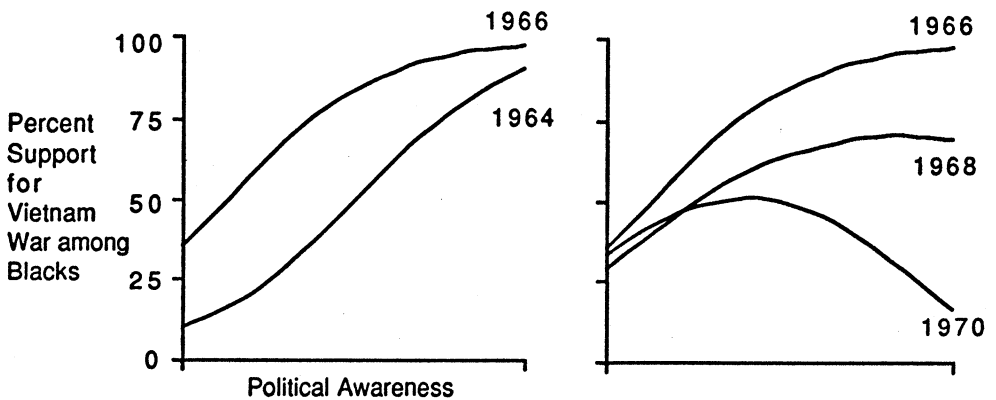
Black Support for the War

The small number of blacks available for analysis in the CPS data sets makes it difficult to achieve a confident assessment of their support for the war. Nonetheless, the available data reveal some highly suggestive patterns, as shown in Figure 5. The data in this figure have been constructed from the coefficients of simple polynomial regressions (one regression within each year) of war support on political awareness.

The data in the left panel of Figure 5 show patterns of war support among blacks in 1964 and 1966. In both years, blacks conform to the mainstream pattern: greater political awareness is associated with greater support for the mainstream policy. Support for the war among moderately and poorly informed blacks increased between 1964 and 1966, reflecting the intensification of prowar communications that also affected white opinion. Contrary to some analyses, these data give no indication that blacks were reluctant to support the war.<sup>18</sup>

As can be seen by a comparison with

Figure 5. Trends in Black Support for Vietnam War, 1964-1970



Note: Estimates are derived from coefficients of regression of war support on political awareness within each survey.

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Figure 3, black support patterns in the early phase of the war resemble those of white conservatives. After 1966, however, the opinions of blacks resemble those of white liberals; that is, war support significantly declined, especially among highly and moderately informed blacks—the result of the continued diffusion of the antiwar message to which blacks, as a heavily liberal group, now responded sympathetically.

Nothing in the survey data can, by itself, explain why black opinion toward the war should resemble that of white conservatives until 1966 and that of white liberals after that time. There is, however, a fairly obvious out-of-data explanation: the Vietnam War was led by Lyndon Johnson, who in 1964 and 1965 won congressional approval for two historic civil rights bills and also launched his ambitious War on Poverty. In light of this, blacks were apparently more likely than whites to accept Johnson's war leadership. By 1968, however, Johnson's civil rights achievements were well behind him; and many black civil rights leaders, including the recently assassinated Martin Luther King, had come out against the war. In this situation, blacks became more susceptible to the liberal antiwar message.

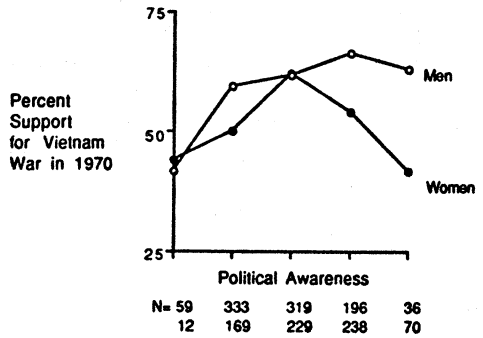
Thus, blacks appear to have been as responsive as whites to the flow of pro- and antiwar information on Vietnam; however, blacks apparently evaluated this information in light of somewhat different leadership cues.

### Gender and Support for the War

As indicated in Table 1, gender has a statistically significant effect on war opinion: males are less resistant than females to prowar information and more resistant to antiwar information.

This finding, however, is more subtle than it may at first seem. The acceptance function in equation 6 assumes that

**Figure 6. Gender Differences in Support for Vietnam War in 1970**



gender interacts with awareness to produce larger impacts at higher levels of awareness; and the significant coefficient obtained for gender in this function supports this assumption.

To be certain that the interaction between gender and awareness is more than an artifact of model specification, I examined the raw data. As Figure 6 shows, the expected interaction is clearly evident in these data. Here, as elsewhere, relatively high levels of political awareness are necessary for the effective translation of political predispositions into appropriate policy preferences.

Yet these results are not fully in accord with the two-message model. According to axiom 2, awareness heightens the impact of values because it is associated with the learning of elite cues. In the case of gender, however, it is difficult to say exactly where these cues might have come from. One possibility is the emergence of the women's movement in the late 1960s; but then, the impact of gender on opinion should have been larger in the later years of the war, and it was not. Thus, it appears that elite cues, though essential for understanding how ideology, hawkishness, and race affected war opinion, may have been irrelevant in the case of gender.

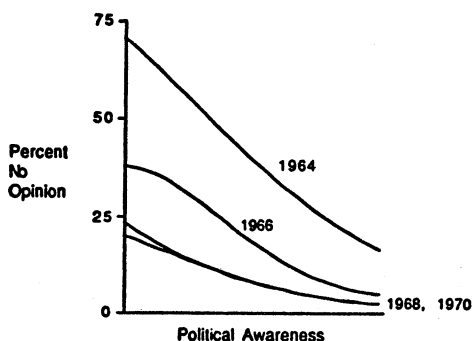


But if elite cues are irrelevant, why does awareness (as we have just seen) still interact with gender to affect the acceptance step of the persuasion process? My surmise is that superior learning of elite cues is an important—but not necessarily the only—reason for the greater value-sensitivity of highly aware persons. Greater capacity for independent judgment of issues in light of one's values may also play a role (see also Carmines and Stimson 1982).

### Changes in Rate of Opinionation

I note in closing that although my analysis has focused on differing rates of support for the Vietnam War, the model can also be used to estimate trends in opposition to the war and in *don't know* rates. The latter are rather interesting, as derived from the coefficients in Table 1 and depicted in Figure 7. There is, as would be expected, a strong relationship between don't know rates and political awareness in all four years. But the relationship seems to flatten out late in the war as the intensified information flows reduced overall levels of don't know. (It is this pattern of don't know rates that led

Figure 7. Estimated No Opinion Rates Among Centrists, 1964-1970



Note: Estimates are derived from coefficients in Table 1.

the model to estimate that the intensity of war news increased through 1968 and remained stable thereafter.)

### Concluding Remarks

I have focused on interactions among three broad classes of variables: aggregate-level variation in the information carried in the media, including elite cues about how new information should be evaluated; individual-level differences in political values; and individual-level differences in chronic political awareness. Interactions among these variables conform to a few simple principles, as embodied in the axioms of the two-message model, but can explain a wide variety of empirical outcomes.

The critical question at this point is whether the model applies to a wider range of cases than Vietnam. The answer is that it surely does. Although the pattern of information flows on Vietnam was probably unique, there are many issues for which information flows resembled those of *particular phases of the Vietnam War*; and for those cases, the public response was essentially the same as in the Vietnam case.

Consider first the early phase of the Vietnam War, in which most elites and most media reporting favored the war. In this period, political awareness was monotonically associated with support for the war. This "mainstream pattern" of opinion holding tends to recur whenever elites achieve a consensus on a mainstream policy. It has arisen in the non-partisan phases of all of the United States' modern wars: World War II (Cantril 1944, 212), Korea, and Vietnam (Mueller 1973)—and even (initial evidence suggests) the Persian Gulf War.<sup>19</sup> The mainstream pattern has also appeared on a wide range of domestic policies on which elites reached agreement among themselves, including issues of business, race,

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and civil liberties (see Chong, McClosky, and Zaller 1984; McClosky and Brill 1983, 421).

Later in the Vietnam War, the mainstream consensus dissolved into intense disagreement among ideologically opposed elites. In this period, political awareness was associated with greater *support* for the war among mass conservatives and hawks but greater *opposition* among mass liberals and doves. In other words, political awareness became associated with heightened levels of value-based polarization.

This *polarization pattern* is also a common pattern of mass opinion in the United States. It arises whenever (as in the later phase of the Vietnam War) elites disagree along partisan lines on a salient issue (Belknap and Campbell 1951; Chong, McClosky, and Zaller 1984). Since this pattern is less familiar to opinion researchers, I provide simple evidence of its frequency in Figure 8, which shows how party attachment interacted with political awareness to affect opinions toward three salient themes in the 1984 election (level of government services, social welfare, and defense spending).<sup>20</sup> The fourth cell of Figure 8, included for purposes of comparison, is a rearrangement of liberal-conservative differences on the Vietnam War in 1970 (shown earlier in Figure 3).

It is significant that the polarization pattern, as depicted in Figure 8, is the basis of attitude consistency in the mass public—in particular, its well-known tendency to increase with levels of political awareness. To see how this is so, observe that highly aware Democrats and Republicans in Figure 8 take “consistently” ideological positions across a range of issues but that their less politically aware counterparts exhibit little such consistency. Thus, the operation of the two-message process across multiple issues explains the development of ideological belief systems in mass publics, as described by Converse (1964).

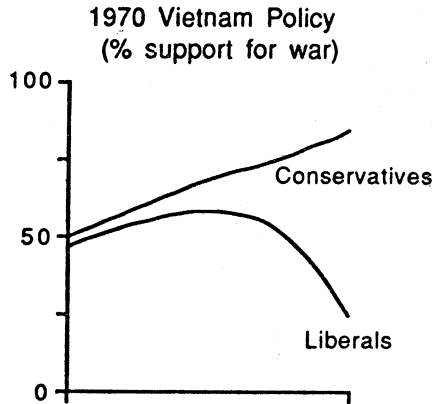
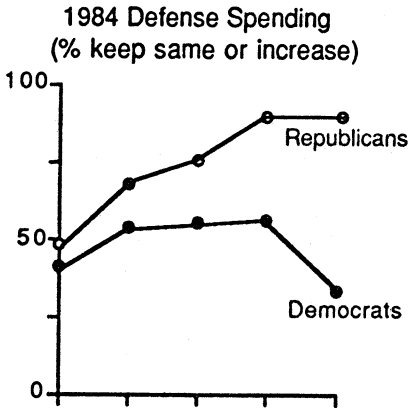
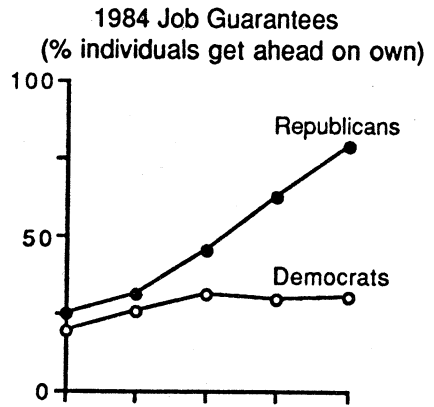
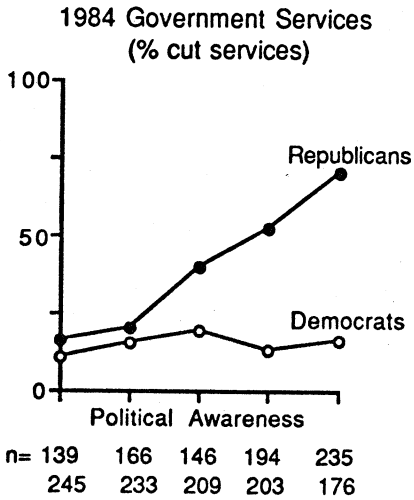
Finally, the pattern of opinion change detected by the two-message model between 1968 and 1970 is also familiar in the existing literature. My previous studies have shown that when overall opinion shifts in a liberal direction, opinion change among liberals and conservatives closely conforms to the pattern of monotonic and nonmonotonic relationships shown in Figure 4 (Zaller 1987, 1989, n.d.). The only difference is that previous work, employing a one-message version of the reception-acceptance model, has explained these patterns of opinion change as a response to a one-sided message, whereas in the present case, the two-message model explains opinion change as a response to shifts in the relative intensity of two messages.

It thus appears that a large fraction of what the two-message model has been able to explain about the Vietnam case—the mainstream and polarization effects, attitude consistency that varies by political awareness, and a particular pattern of opinion change in response to persuasive communications—is familiar in the empirical literature. This familiarity strongly suggests the applicability of the model to many cases other than Vietnam.

The general applicability of the two-message model should be no surprise. Its defining axioms have been derived from the existing literature—especially the reception-acceptance model of media effects developed by Converse (1962) and others, and Converse’s classic (1964) argument on how values constrain opinion. What is novel about the two-message model is its mode of formalizing ideas long extant in the public opinion literature.

Altogether, then, the two-message model contributes to, and helps to integrate, two research problems. With respect to the mass media, the model specifies in greater detail than previous research how streams of competing information diffuse through—and interact

**Figure 8. Examples of Polarization Pattern**



(from Figure 3)

*Note:* Political awareness is measured by tests of political knowledge. No opinion responses are included in base on which percentages are calculated.

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with individual-level characteristics of—a mass audience. With respect to ideology, the model shows how mass belief systems develop from the interaction of competing, ideologically cued information flows and a citizenry that differs in its values and its degree of political awareness.

### Appendix A: Measurement of Political Awareness

Much evidence indicates that simple tests of political knowledge are the most reliable and valid measures of political awareness (Fiske, Lau, and Smith 1990; Price and Zaller 1990; Zaller 1990).

In building awareness scales, I gave respondents one point for every correct answer given, except as indicated. Persons with missing data were not eliminated unless more than two-thirds of their responses were missing. Instead, these persons were assigned the average score for the items for which data was available. All the variable designations refer to the code books for these studies published by the Inter-University Consortium for Political and Social Research at the University of Michigan.

The SPSS code used to create these variables is available on request.

#### 1964 CPS Election Study

A 16-point scale: Johnson's and Goldwater's home state and religion (v294 to v297); which party is more conservative (v302); the majority in Congress (v305, v306); congressional candidate names and incumbency status (three items, v309, v312); which party favors government utilities (v346); China's form of government and United Nations status (two items, v352); Cuba's form of government (v354); knowledge of 1964 Civil Rights Act (v406, v407).

#### 1966 CPS Election Study

A 15-point scale: congressional candidate names and incumbency status (three items, v90, v92); majority in Congress (v100, v101); names of U.S. Supreme Court justices (up to four points, v167); interviewer rating of respondent information level (up to four points, v242). Since this scale was used to measure exposure to news about Vietnam, I awarded up to two points for expression of interest in foreign affairs (v65).

#### 1968 CPS Election Study

A 17-point scale: China's form of government and United Nations status (two items, v107); Cuba's form of government (v109); which party is conservative (v361); congressional candidate names and incumbency status (three items, v386, v387); the majority in Congress (v305, v306); up to two points for expression of interest in foreign affairs (v102). There were also two interviewer rating scales, v269 on preelection and v531 on post-election, which were averaged to yield a maximum of four points, and two tests of ability to make proper comparative placements of politicians on issue scales, namely, Johnson and Wallace on Vietnam (v466 and v469); Humphrey and Wallace on urban unrest (v461 and v463).

#### 1970 CPS Awareness Scale

An 18-point scale: attention to Vietnam (v40); which party is more conservative (v177); congressional candidate (v203); percentage of tax dollar to defense (v256); who can change law (v258); the number of allowable terms for a president (v259); term of U.S. Senator (v260); term of congressman (v261); interviewer rating of respondent information (up to four points, v396). There were four comparative location tests, namely, Democrats and Republicans on Vietnam (v93 and

v94), Muskie and Wallace on aid to minorities (v110 and v111), Democrats and Nixon on inflation (v114 and v116), and Muskie and Wallace on criminal rights (v124 and v125); also, two one-item location tests, namely, Wallace on urban unrest and Vietnam (v90, v97).

### Appendix B: Measurement of Hawk-Dove Attitudes

Franklin's instrumental variables technique provides "a method of estimating relationships between variables not measured in the same dataset" (1989, 23). One has a measure of variable X in data set A but not data set B; however, the dependent variable of interest, variable Y, is in data set B. One then locates a set of auxiliary variables carried in both data sets. The X variable is regressed on these auxiliary variables in data set A, an instrument for X is built from the resulting coefficient estimates, and this instrument is used in data set B as an independent predictor of variable Y. In the present case, the X variable is a measure of hawk-dove attitudes, as measured in the 1988 NES; the Y variable is opinion about the Vietnam War, as measured in the CPS surveys of 1964-70. Provided appropriate assumptions are met, Franklin's technique makes it possible to build an instrumental measure of hawk-dove attitudes in the CPS data sets from information contained in the 1988 NES study.

The most important of these assumptions are that both data sets are samples of the same population and that relationships between the auxiliary variables and the X variable are the same in both data sets. The latter assumption is obviously the more worrisome, since the data sets were created 18-24 years apart. Nonetheless, it is not implausible to believe that the types of persons most likely to be doves in 1988 (e.g., females, atheists, and

civil rights liberals) were likely to be doves in the 1960s, as well, provided they were given appropriate leadership cues. In fact, all of these variables are correlated with opinions toward the Vietnam War in the expected directions. Hence, despite some concern, it is reasonable to assume that the conditions necessary to apply the Franklin technique have been met.

Two variables, however, require comment. First, age is associated with greater hawkishness in 1988 (as measured by general hawk-dove items of the type shown in the text) but less support for the Vietnam War in the 1960s. This does not, however, appear to represent an overtime change, since older persons, though presumably still tending to be hawkish in 1991, were also less likely to support U.S. military involvement in the Persian Gulf crisis.<sup>21</sup> Second, education is associated with less hawkishness in 1988 but greater support for the Vietnam War, especially in the early phase of the war. This reversal is best explained by Mueller's observation that better-educated persons, though not dispositionally hawkish, are more susceptible to elite opinion leadership, since they are more heavily exposed to what elites are saying. Again, this does not seem to represent a change in the last 20 years, since education was positively associated with support for mainstream policy in the nation's most recent war even though it was negatively associated with hawkishness, as measured by the NES in 1988.<sup>22</sup> But even though no overtime sign changes appear to have occurred, the "wrong-way" correlations of age and education with hawkishness indicate that they should not be used in building an instrumental measure that is intended to measure predispositions to support the Vietnam War.

The ordinary least squares coefficients used in building the hawk-dove instrument, along with information concerning the auxiliary variables, are shown in Table A-1.

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**Table A-1. First-Stage Regression Estimates for Hawk-Dove Instrument**

Variables	Coefficient	t-ratio
Agnostic or atheist	.40	4.04
Catholic	.15	2.51
Fundamentalist <sup>a</sup>	-.18	2.54
Jehovah's Witness	.98	1.05
Jew	.55	2.99
Pacifist religion <sup>b</sup>	.43	1.53
Church attendance <sup>c</sup>	.08	3.57
Too slow on civil rights (845) <sup>d</sup>	.50	6.01
Too fast on civil rights	-.38	6.75
Border state	-.01	.16
Southern state	-.13	1.91
Union member	-.11	1.68
Number of cases	1441	
Adjusted R <sup>2</sup>	.15	

Source: 1988 National Election Study.

Note: Dependent variable consists of five items, combined by principal components analysis into a scale: strong military or bargain for peace (v966); importance of strong military (v967); U.S. should stay most powerful (v972); communist takeovers always a threat (v973); U.S. must stop communism (v974). High scores indicate dovish responses.

<sup>a</sup>Codes 130-49 and 152 on v527.

<sup>b</sup>Codes 153, 155, and 156 on v527.

<sup>c</sup>530, range 1-4.

<sup>d</sup>It was necessary to substitute *aid to minorities*, appropriately recoded, in construction of the form II instrument of the 1970 CPS study.

### Notes

This paper was originally prepared for delivery at the World Sociological Congress, Madrid, 1990. The data were collected by the Center for Political Studies under grants from the Ford Foundation and the National Science Foundation and are publicly available through the Inter-University Consortium for Political and Social Research at the University of Michigan. I am grateful to Matt Lyons for research assistance, and to Chris Achen, Stephen Ansolabehere, Larry Bartels, Henry Brady, Charles Franklin, Barbara Geddes, Shanto Iyengar, Don Kinder, J. P. Monroe, and Doug Rivers for helpful suggestions. None of these agencies or individuals bears any responsibility for errors that may remain.

1. By *values*, Kinder and Sears (1985, 674) mean "general and enduring standards" that hold a "more central position than attitudes" in individuals' belief

systems. As Rokeach writes, values "lead us to take particular positions on social issues" (1973, 13).

2. Recent psychological research has sketched a more optimistic picture of the critical capabilities of the "receiver." Chaiken (1980) and Petty and Cacioppo (1986) have shown that individuals will, *under some conditions*, entirely ignore "source" information and instead discriminate among arguments on the basis of their actual "strength" or "weakness." The conditions, however, are fairly stringent ones. They are that individuals be "personally involved" with the issue under discussion and that they be asked to react to arguments that are either artificially strong (in the sense that the experimenters have freely invented the "facts" that underlie them) or intentionally weak. When these conditions fail to be met (as in most situations of mass persuasion), even recent work indicates that individuals rely on superficial forms of message processing—in particular, cues concerning the credibility of the source.

3. I emphasize that the terms *liberal message* and *conservative message*, which I use repeatedly, do not imply either that the messages are tinged with ideology or that persons influenced by them are, by that fact, ideologues; the terms refer only to the directional thrust of the given information flow.

4. For example, the one case in which, according to Cotton (1985), selective exposure has been rigorously documented in a nonlaboratory setting involved recent car purchasers (compared to those who had bought cars a year earlier) who were more likely to look at ads for the car they had just purchased than ads for a car they had examined but decided not to buy.

5. The probability of receiving *only* the conservative message is the probability of receiving the conservative message ( $R_C$ ) times the probability of not receiving the liberal message ( $1 - R_L$ ).

6. Inclusion of a series of Values  $\times$  Awareness terms, subscripted for time, greatly complicates the model and only marginally improves performance.

7. Some people gave open-ended *other* responses, which were converted to closed-ended codes—either pro- or antiwar, as appropriate.

8. The different scales do have different skews, so that even when standardized, their ranges differ somewhat. The effects of these differences must be absorbed as measurement error.

9. Party attachment could substitute for ideology; however, party is a weaker predictor of war attitudes while suffering the same endogeneity problem.

10. These measures were developed and validated by John Hurwitz and Mark Pefley (1988).

11. I am grateful to Doug Rivers for deriving a maximum likelihood function for the model, thus making Maximum Likelihood Estimates possible. SAS code for the model is available on request.

12. The most serious collinearity is between the decay rate  $d$  and the eight  $a_{0jt}$  coefficients from the reception function, which are correlated at about  $-.99$ . The problem is that although the model can use changing rates of *don't know* responses as information about overtime changes in relative message intensity, it cannot fix the absolute intensities of messages independently of the rate at which opinion decays. This problem would exist even if direct measures of media content, of the type shown in Figure 2b, were a variable in the model. What, in these circumstances, the  $f$ -test shows is that both the decay rate and absolute message intensities are non-zero.

13. For the feeling thermometers, the yearly intercepts for the liberal message were  $-6.50$ ,  $-5.33$ ,  $-3.92$ , and  $-3.21$ ; yearly intercepts for the conservative message were  $-3.83$ ,  $-2.77$ ,  $-2.09$ , and  $-2.28$ . These are the numbers plotted in Figure 2a. For the hawk-dove instrument, the corresponding terms are  $-7.92$ ,  $-6.36$ ,  $-4.62$ ,  $-3.88$ ,  $-4.78$ ,  $-3.94$ ,  $-3.05$ , and  $-3.12$  (not shown graphically). All are statistically different from zero on an  $F$ -test.

14. When the hawk-dove measure is used in the estimation, the corresponding correlation between exposure coefficients and logged story counts is  $.78$ .

15. The decline in volume of war reporting in Figure 2b does not, however, seem to be a fluke. A count of Vietnam stories in the *Reader's Guide to Periodical Literature* confirms a decline of war coverage in this type of medium after 1968.

16. I examined all boldface sentences in the War Policy section of the index. Assertions and justifications of official policy, among other obviously valenced stories, were counted as prowar news; news of combat setbacks, protests, or rising congressional resistance to the war were counted as antiwar stories.

17. These are persons who score  $\pm 1.6$  standard deviations from the mean on ideology; the awareness scale in Figure 3 runs from the 2nd percentile to the 98th.

18. There is a significant tendency for blacks to be less supportive of the war in both years, but it disappears once a control for political awareness is imposed.

19. In the 1990 NES postelection survey, 33% of persons scoring in the bottom decile of an information scale said the United States was right to send troops to the Persian Gulf; in the top decile, this rate was 70%. (The information scale combined responses to v835-43; the policy item was v737.) For comparable data, see *New York Times*, 14 December 1990.

20. The Party  $\times$  Awareness interaction is highly statistically significant in an appropriately specified regression. Similar results are, of course, obtained if Ideology is substituted for Party.

21. *New York Times*, 14 December 1990.

22. *New York Times*, 14 December 1990.

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