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Judging the Positions of Political Candidates: Models of Assimilation and Contrast

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Numerous researchers have found that voters misperceive positions that are espoused by political candidates. Evidence has been presented that voters who like a candidate assimilate the candidate's position to their own position on an issue, but little evidence has been found for contrast among those who dislike a candidate. These claims are critically examined both formally and empirically. It is shown that a series of possible errors or misspecifications have biased the estimates of assimilation and contrast. Using 1968 national survey data, the authors explored a new model for assessing assimilation and contrast that overcomes some of these misspecifications. The results suggest that previous research has relatively underestimated the strength of contrast effects.

In recent years, many social scientists have become interested in the perception of political candidates. Specifically, a number of recent articles have examined the extent to which the positions espoused by political candidates are systematically misperceived in ways consistent with social psychological theories of cognitive consistency (Granberg & Brent, 1974; Granberg & Jenks, 1977; Granberg & Seidel, 1976; Kinder, 1978; King, 1977–1978).

All of these studies have relied on Heider's (1958) balance theory, which predicts that agreement with liked candidates is preferred to disagreement and that disagreement with disliked candidates is preferred to agreement. Such predictions imply that a voter's sentiment toward a political candidate should influence the perception of positions espoused by the candidate. Liked candidates' positions should be seen as similar to the voter's own position and hence assimilated to the voter's position; disliked candidates' positions should be seen as dissimilar and hence contrasted from the voter's own position.

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To test this balance hypothesis, national survey data collected by the Center for Political Studies (CPS) at the University of Michigan have been used. These surveys have been conducted during every presidential election year since 1948, and recently they have included questions assessing the voter's own position on various social issues, his or her perception of the candidates' positions on those issues, and the voter's sentiment toward each candidate. To assess the degree to which sentiment induces assimilation and contrast effects, correlations have typically been computed between the perceived position of a candidate and the voter's own position for groups of voters that differ on sentiment toward the candidate. In these analyses, it has been assumed that assimilation of a liked candidate's position is indicated by a positive correlation and that contrast of a disliked candidate's position is indicated by a negative correlation.

The causal model consistent with these traditional assessments of sentiment effects appears in Figure 1. This model assumes that the voter's own position, V, on a given political issue influences his or her perception of the candidate's position, C, on the same issue. The variable U represents residual or disturbance variance in C that is assumed to be uncorrelated with V. The effect of V on C, which we denote j_s in Figure 1, has been estimated either by the correlation between V and C (i.e., the path coefficient) or by the unstandardized regression coefficient. The subscript, s, indicates that the relationship between V and C is assumed to vary as a function of sentiment toward the candidate.

While all of the studies conclude that the candidates' positions are misperceived as a function of the voter's own position, they have generally only supported the assimilation component of the balance hypothesis. The correlation or unstandardized coefficient is typically positive and quite large for voters who like the candidate, whereas the estimate of j_s is negative but generally quite close to zero among those who dislike the candidate. Contrast effects in the perception of disliked candidates have only rarely been demonstrated. Thus, for instance, Kinder (1978) concludes:

> In the interest of preserving *positive* sentiment . . . , it is essential for citizens to see candidates they like . . . as holding positions similar to their own on *all* important issues; hence, a regular and powerful assimilation effect. But there is no comparable need to view disliked candidates as uniformly dissimilar. (p. 869)

The theoretical rationale typically used to explain this *asymmetry* in the effects of sentiment on perception of political candidates derives from modifications of Heider's (1958) balance theory suggested by Newcomb (1968). Newcomb argued that assimilation caused by positive sentiment should be more frequent and potent than contrast because disliking may lead to disengagement rather than efforts to achieve balance. Consistent failures to demonstrate contrast effects in the perception of political candidates seem to support Newcomb's point of view.

The purpose of this article is to question the validity of this often-reached conclusion about assimilation–contrast asymmetry. We begin by discussing three misspecifications in the traditionally assumed model of Figure 1. We show how these misspecifications, due to measurement error, reciprocal causation, and an omitted variable, may have inappropriately encouraged investigators to conclude that sentiment effects are asymmetrical. We then propose an alternative model that partially overcomes these misspecifications and allows a more adequate test of assimilation–contrast asymmetry. We conclude by applying this new model to data from the 1968 CPS national election survey.

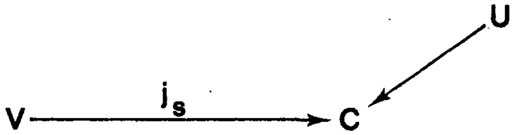

Figure 1. Implicit model of effect of own position (V) on perceived candidate position (C).

Misspecifications in the Traditional Model

All models are necessarily inadequate representations of reality; that is, they are misspecified to some unknown extent. In this section, we discuss three aspects of the V–C relation that are not accounted for in the traditional model, and we discuss the likely consequences of these misspecifications for traditional tests of assimilation–contrast asymmetry.

Misspecification Due to Measurement Error

Classic psychometric theories of measurement assume that every observed variable reflects both true score and error. The error component is classically assumed to be random with respect to both the true score variation and all other variables. It is well known that errors of measurement in variables attenuate correlations. If j_s is estimated by the correlation between C and V, r_{CV}, random measurement error in C and V leads to attenuation. If j_s is estimated by the unstandardized regression coefficient of C regressed on V, b_{CV}, random measurement error in V, but not in C, leads to attenuation (Judd & Kenny, 1981). Because of measurement error in C and V, then, the association between them is probably misestimated under the model portrayed in Figure 1.

Although random error is a source of misspecification in the model in that it causes bias in estimates of j_s, this misspecification may not lead to bias in tests of assimilation–contrast asymmetry. For all sentiment groups, random measurement error probably results in more or less equal attenuation of j_s. However, not all measurement error is random.

There is a considerable body of literature in the area of attitude measurement that sug-

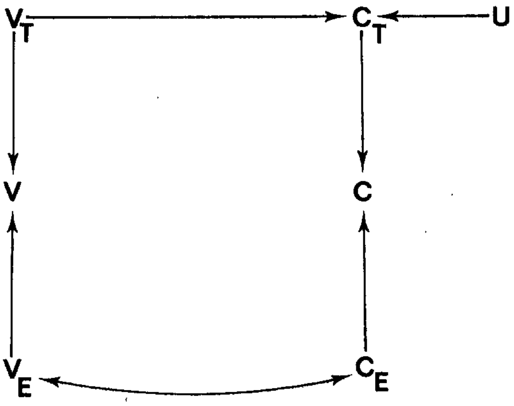

Figure 2. Model with correlated measurement error.

gests that errors of measurement in *V* are likely to be correlated with errors of measurement in *C*. One source of such correlated measurement error is known as the perspective effect (Judd & DePaulo, 1979; Ostrom & Upshaw, 1968). Research has demonstrated that different individuals may associate different attitude positions with the end points of an attitude rating scale and that ratings on the scale vary as a function of the rater's interpretations of the end points' meanings. This perspective effect should influence all ratings made on the same scale (in the present case, ratings of both *V* and *C*), so the errors of measurement in *V* and *C* are likely to be positively correlated.

By way of illustration, consider two persons who share the same moderate attitude position concerning American participation in the Vietnam War. Person A may have friends who are quite hawkish, and Person B may have friends who are dovish. According to perspective theory, Person A may rate his or her position as more dovish than Person B rates his or her own position, not because their attitudes differ but because they define the scale's end points differently. Because of these differences in perspective, Person A would also rate Richard Nixon as more dovish than would Person B. Thus, the dovish person would also see Nixon as dovish; likewise, the hawkish person would see him as hawkish.

Unless we allow for correlated measurement error in *V* and *C*, the association between *V* and *C* is likely to be misestimated such that assimilation–contrast asymmetry would appear to be demonstrated. The artifactual assimilation effect that results from perspective differences would enhance the assimilation effect for those who like the candidate and depress the contrast effect for those who dislike the candidate. Hence, positively correlated errors of measurement in *V* and *C* are a source of possible misspecification in Figure 1 that may result in the inappropriate conclusion that assimilation effects are stronger than contrast effects. A respecified model that allows errors of measurement in *V* and *C* to be correlated is presented in Figure 2. In this figure, C_T and V_T refer to error-free variation in *C* and *V*, and C_E and V_E refer to error variation in the two variables. The curved line between V_E and C_E represents the correlation between errors of measurement. Unfortunately, the coefficients of this model cannot be estimated unless additional variables are introduced (Kenny, 1979).

Misspecification Due to Reciprocal Causation

There are two sorts of plausible reciprocal causation that are omitted from the model of Figure 1. First, one may grow to like or dislike candidates in part because they espouse similar or dissimilar positions to one's own (Granberg & King, 1980; Page & Jones, 1979). Second, one may be persuaded to adopt political positions in part by hearing the positions espoused by liked and disliked candidates. Each of these misspecifications is discussed in the following paragraphs.

In the model of Figure 1, it is assumed that liking for a candidate, or sentiment, is determined outside of or prior to the *V–C* relationship. It is assumed that sentiment affects the parameter j_s but that the magnitude of the *V–C* relationship does not affect sentiment. In fact, however, it is quite likely that one grows to like or dislike political candidates in part because of the similarity or dissimilarity between their positions and one's own (Ajzen & Fishbein, 1980; Granberg & King, 1980; Page & Jones, 1979).

This reciprocal causation misspecification may inappropriately encourage the conclusion that the effects of sentiment are asymmetric in Figure 1 if the omitted reciprocal effect of similarity on liking is nonlinear. That is, if the effect of increasing similarity of positions on liking is greater than the effect of increasing dissimilarity on disliking, then the results of an analysis of the model in Figure 1 might mistakenly conclude that the effects of sentiment are asymmetric. However, there exists abundant evidence that the effect of similarity on liking is quite linear (Byrne, 1971). Thus, whereas this sort of reciprocal effect is a misspecification in the model of Figure 1, it is unlikely that it mistakenly leads to the conclusion that the effects of sentiment on j_s are asymmetric.

The second sort of reciprocal causation omitted from the model of Figure 1 is a "persuasion" effect (Markus & Converse, 1979). The model assumes that V affects C but that C does not affect V. In fact, however, it is likely that the positions espoused by liked and disliked candidates affect the positions a voter espouses, although the effect may not be large (Markus, 1982). Candidates who are liked may persuade a voter to adopt positions similar to their own. Disliked candidates may persuade a voter to adopt dissimilar positions. If such persuasion effects are more potent for a liked candidate than for a disliked one, then the omission of this reciprocal effect of C on V may mistakenly encourage the conclusion that assimilation effects (of V on C) are stronger than contrast effects in the model of Figure 1. In other words, if the tendency to be persuaded toward a liked candidate is stronger than the tendency to be persuaded away from a disliked candidate, then the asymmetry in the effects of sentiment that is typically obtained may be due to the effect of C on V rather than to the assumed effect of V on C.

There is in fact both theoretical and empirical support for the hypothesis that persuasion toward a liked candidate is greater than persuasion away from a disliked candidate. The theoretical support derives from the important mediating role of similarity in social comparison processes (Festinger, 1954). According to social comparison theory, similar others are more often used as referents for judging and modifying one's attitudes than dissimilar others. The factors that are likely to make a candidate seem to be a similar referent (e.g., party affiliation) are also factors that induce liking for a candidate. Hence, it follows that liked candidates may be more important referents (i.e., more persuasive) than disliked candidates.

The empirical support for the notion that persuasion toward a liked other is greater than persuasion away from a disliked other is found in research on congruity theory (Osgood & Tannenbaum, 1955). Osgood and Tannenbaum found that congruity theory required an important modification in order to be consistent with the experimental data generated to support it. This modification, called the "assertion constant," was introduced to account for the experimental result that movement away from the position advocated by a disliked source was not as great as movement towards a liked source. In sum, then, there exists compelling theoretical and empirical support for the hypothesis that persuasion effects are greater if a candidate is liked than if the candidate is disliked. Such asymmetry of persuasion effects may inappropriately lead researchers to conclude that the effects of V on C are asymmetric in the misspecified model that omits the effect of C on V.

Misspecification Due to an Omitted Variable

The validity of the model in Figure 1 rests on the assumption that all relevant variables have been included. The failure to include an important variable could seriously bias the assessment of assimilation–contrast asymmetry.

Laboratory experiments in the area of persuasive communications (e.g., Sherif & Hovland, 1961) have examined an important variable that is omitted from the model of Figure 1. In studies of how persuasive communications are judged, the position implied by the actual communication is usually known. This actual position is used to determine whether subjects misperceive the content of the communication. For studies of the perception of political candidates by voters, candidates direct messages to the voters concerning their actual positions on various issues. These actual positions, implicit in communications from the candidates, may then be distorted by the voters according to their sentiment for the candidates, in the ways suggested by balance theory. We can define the actual content of a message from a candidate to voters as the undistorted position, or C'.

The model in Figure 1 must be modified to account for the fact that the voter's perception of a candidate's position is in part influenced by C', or the content of the actual communications addressed to the voter. To modify the model, we might think of $(C - C')$ as the amount of distortion by the voter in the perception of the communications from the candidate. The quantity $(V - C')$ is the discrepancy between the voter's own position and the undistorted position of the candidate. The amount of distortion in the perception of a candidate's position, that is, the amount of assimilation or contrast, should be a joint function of the voter's sentiment toward the candidate and the quantity $(V - C')$. In other words, given some constant level of positive sentiment, a voter whose own position is relatively close to the candidate's undistorted position should engage in less distortion than a voter whose own position is relatively discrepant from C'.

This new model can be expressed as

$$(C - C') = k_s(V - C') + U,$$

where k_s is assumed to vary with sentiment toward the candidate and where U represents residual variation in $(C - C')$ that is uncorrelated with $(V - C')$. The model can be expressed equivalently as

$$C = C' + k_s(V - C') + U. \qquad (1)$$

If k_s varies with sentiment, this model accounts for assimilation and contrast effects. In the case of assimilation, when voters strongly like the candidate, the value of k_s would be near one. If we substitute $k_s = 1$ in Equation 1 we have

$$C = C' + 1(V - C') + U$$
$$= V + U.$$

Thus, when k_s equals one, the voter's own position equals his or her perception of the candidate's position on the average, constituting perfect assimilation. For voters who are neutral toward a candidate, the value of k_s should be zero. Substituting $k_s = 0$ in Equation 1 gives

$$C = C' + 0(V - C') + U$$
$$= C' + U.$$

Thus, when k_s equals zero, the voter's perception of the candidate's position equals the candidate's undistorted position on the average. Neither assimilation nor contrast takes place. Finally, when voters strongly dislike a candidate, the value of k_s should approach negative one. Substituting $k_s = -1$ in Equation 1, we have

$$C = C' + (-1)(V - C') + U$$
$$= 2C' - V + U.$$

This implies that C' falls between V and C on the average. Thus, when k_s is negative, there is distortion in C away from V in the direction of C'. This constitutes contrast.

To determine whether the effects of sentiment are asymmetric, that is, to examine the hypothesis of assimilation–contrast asymmetry, we would like to examine the sentiment–k_s relation. Assimilation–contrast asymmetry would be indicated if the absolute value of k_s was greater for those who like a candidate than for those who dislike the candidate to an equal degree. Symmetry would be indicated if the values of k_s were equal but of opposite sign for those who like and dislike a candidate to an equal degree. The distorting effects of sentiment would be symmetrical, then, if the sentiment–k_s relation was linear and centered at zero. That is, when sentiment is neutral, k_s should be zero, and as sentiment diverges from neutrality, k_s changes linearly.

At issue, then, is the relation between sentiment and k_s in the respecified model that includes C'. Unfortunately, however, C' is an unknown variable and hence we probably cannot estimate k_s without bias. We can examine, however, whether the correlation between C and V (r_{CV}) or the regression coefficient of C on V (b_{CV}) is a good approximation of k_s. If one or both of them is, then we could look for assimilation–contrast asymmetry using these coefficients rather than the unknown k_s.

Because we wish to determine whether the sentiment–k_s relation is linear and centered at zero, these same two criteria should be used for deciding whether r_{CV} or b_{CV} is a good approximation of k_s. First, a good approximation of k_s should equal zero when k_s equals zero. Second, a good approximation of k_s should vary linearly with it. We refer to these as the centrality-at-zero and the linearity criteria, respectively.

Whether r_{CV} and b_{CV} are good approximations of k_s depends on the assumptions we make about the omitted variable, C', in Equation 1. Suppose we assume that C' is constant across all voters. In other words, we are assuming that the candidate's undistorted position projected to the voters is the same across all groups of voters. Under this assumption it can be shown that b_{CV} is equivalent to k_s. In other words b_{CV} meets both the linearity and centrality-at-zero criteria as an approximation of k_s. The correlation between C and V (r_{CV}), on the other hand, meets the centrality criterion but not the linearity criterion. A proof of these conclusions is given in the first part of the Appendix. Table 1 presents the values of b_{CV} and r_{CV} for various values of k_s when C' is a constant.

It is probably unreasonable to assume that C' is a constant. The positions advocated by candidates are likely to vary during the course of a campaign. Further, the positions advocated are known to vary with the audience that the candidate is addressing. Political messages are tailored by candidates and their campaign staffs to match the audiences addressed (Miller & Sigelman, 1978). Candidates to some extent attempt to present themselves as liberal to liberal audiences and as more conservative to conservative audiences. Hence, it is likely that the candidate's undistorted position, C', is a variable that is positively correlated with V. The correlation between C' and V may not be terribly large, because we tend to learn about political candidates primarily through television and the mass media. Nevertheless, some small positive correlation between C' and V is reasonable.

Table 1
Values of r_{CV} and b_{CV} Given the Model of Equation 1, With $s_V^2 = s_U^2 = 1$ and C' a Constant

k_s	r_{CV}	b_{CV}
.50	.45	.50
.25	.24	.25
.00	.00	.00
−.25	−.24	−.25
−.50	−.45	−.50

Table 2
Values of r_{CV} and b_{CV} Given the Model of Equation 1, With $s_V^2 = s_U^2 = 1$, $s_{C'}^2 = .8$, and $r_{C'V} = .2$

k_s	r_{CV}	b_{CV}
.50	.48	.59
.25	.30	.38
.00	.13	.18
−.25	−.01	−.02
−.50	−.14	−.23

How good are b_{CV} and r_{CV} as approximations of k_s when C' is positively correlated with V? In the second part of the Appendix, we show that r_{CV} meets neither criteria. It is a relatively poor approximation of k_s. The regression coefficient, b_{CV}, meets the linearity criterion but not the criterion of centrality. In other words, b_{CV} varies linearly with k_s but it is displaced in a *positive* direction.

To illustrate these conclusions, we present in Table 2 the values of b_{CV} and r_{CV} for various values of k_s when C' is positively correlated with V. From these results, it should be clear that conclusions about assimilation–contrast asymmetry based on the actual values of r_{CV} and b_{CV} are likely to be erroneous when C' and V are correlated. The correlation between C and V (r_{CV}) does not vary linearly with k_s. Both r_{CV} and b_{CV} are displaced in a positive direction, thus falsely encouraging the conclusion that contrast effects are relatively weak. It is important to note that the amount of displacement in b_{CV} is a function of the relation between C' and V. If the candidate's undistorted position is not highly correlated with V, then b_{CV} would not be greatly displaced. Examining b_{CV} might then be useful for testing the assimilation–contrast asymmetry hypothesis. If b_{CV} varies linearly with sentiment, then k_s must also vary linearly with sentiment. If b_{CV} is only slightly displaced from zero at neutral sentiment, then k_s can be assumed to show even less displacement.

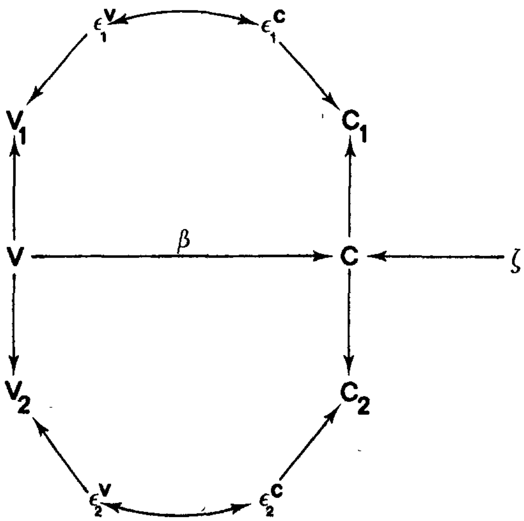

Figure 3. Multiple-indicator model with correlated errors.

Summary of Misspecifications

In this section, we have discussed three misspecifications in the traditional model that has been used to test assimilation–contrast asymmetry. These misspecifications are due to correlated measurement error, reciprocal causation, and the omission of an important variable: C'. We have argued that all three of these misspecifications have encouraged researchers to conclude that the distorting effects of positive sentiment (assimilation) are stronger than the distorting effects of negative sentiment (contrast). Modifications in the traditional model are needed to overcome these misspecifications. To overcome the problem of correlated measurement error, we need to use more complex models, with multiple measures of both V and C, to allow for correlated errors of measurement in individual variables. To overcome the problem of reciprocal causation, we need to examine longitudinal data as others have begun to do (Granberg & King, 1980; Markus & Converse, 1979). Finally, to overcome in part the problem of an omitted variable, we need to examine the b_{CV}–sentiment relation. We need to examine both whether b_{CV} varies linearly with sentiment and the degree to which b_{CV} is displaced from zero. In the next section, we present a model that enables us to begin to overcome the first and third misspecifications. We examine this model using national survey data from the 1968 election survey. As we show, the evidence for assimilation–contrast asymmery is much less strong under this new model, even ignoring the reciprocal causation misspecification.

Examining a New Model for Sentiment Asymmetry

The Model

When discussing the correlated measurement error misspecification in the traditional model of Figure 1, we presented in Figure 2 a model that allows for correlated errors of measurement. We acknowledged, however, that the model is not identified and hence that its coefficients could not be estimated. Identification becomes possible, however, if we can find multiple indicators of, or ways of measuring, both C and V. Figure 3 presents a model in which two variables are used to measure both C and V. In this model, C and V are unmeasured or latent constructs that have two indicators each: C_1, C_2 and V_1, V_2. The variance of each indicator is thus in part due to the latent construct it measures, In addition, each indicator has residual or error variation:

$$\epsilon_1^V, \epsilon_2^V, \epsilon_1^C, \epsilon_2^C.$$

The curved arrows linking pairs of these errors represent correlated errors of measurement between V_1 and C_1 and between V_2 and C_2. The model is more formally presented as a set of equations. One equation represents the relation between the unmeasured constructs V and C:

$$C = \beta V + \zeta.$$

In this equation β represents the effect of V on C, and ζ represents residual variation in C uncorrelated with V. This equation portrays what is called the structural model (Bentler, 1980; Kenny, 1979). In addition, a series of equations portrays the measurement model or the relations between latent constructs and their indicators. These equations for issue i are

$$V_i = \lambda_i^V V + \epsilon_i^V;$$
$$C_i = \lambda_i^C C + \epsilon_i^C.$$

The variables V_i and C_i are indicators of V and C, respectively; λ_i^V and λ_i^C are loading coefficients representing the effects of latent constructs on their indicators; and ϵ_i^V and ϵ_i^C are residuals to the indicators that are uncorrelated with V and C. Notice that we have used the same subscript, i, with both V_i and C_i. This indicates that each V_i is linked to a specific C_i with which it shares error variation. In other words, a specific ϵ_i^V is allowed to correlate with the corresponding ϵ_i^C.

To illustrate the model, suppose each voter was asked to rate himself or herself on scales assessing two attitudes: toward the Vietnam War and toward the military budget. Assuming these self-ratings both reflected in part a single underlying construct, V, the former measure might be V_1 and the latter V_2. Each voter also rates the candidate's positions on these two scales, C_1 and C_2, respectively. The model allows us to estimate the effect of V on C, controlling for the correlated errors between the ratings taken on the Vietnam War scale and between the ratings taken on the military budget scale.

Assuming that the coefficients of this model can be estimated, then the estimated V–C relation, β, would not be biased due to correlated errors of measurement. Thus, this model avoids the first of the misspecifications we have discussed. Further, if we estimate the variances of both V and C and examine β as an unstandardized coefficient, then we can partially overcome the misspecification due to the omission of C'. We do this by examining the linearity of the relation between β and sentiment and the degree to which it is displaced from zero at neutral sentiment. From this we hope to infer whether the unknown coefficient k_s varies linearly with sentiment and is centered at zero.

Estimation

Given two indicators of both V and C, the coefficients of the model in Figure 3 can be estimated using LISREL (Version 4; Jöreskog & Sörbom, 1978), once an additional constraint is placed on the model. For the model to be identified, V_1 and V_2 must be assumed to be equally good indicators of V, and C_1 and C_2 must be assumed to be equally good indicators of C. In other words, we assume that $\lambda_1^V = \lambda_2^V$ and that $\lambda_1^C = \lambda_2^C$.

To estimate the unstandardized structural coefficient representing the effect of V on C, we must estimate the variances of both latent constructs. This can be accomplished by setting one λ_i for each latent construct at unity to establish its measurement metric (Kenny, 1979). This, in combination with the constraint that both indicators of each construct have equal loadings, results in all λ_i being set at unity.

Given these constraints on the model, LISREL provides maximum-likelihood estimates of the following unknown parameters: (a) the variance of the latent exogenous construct, σ_v^2; (b) the unstandardized coefficient, β; (c) the residual variation in C, σ_ζ^2; (d) the residual or error variation in the indicators, σ_ϵ^2; and (e) the covariances between indicators of C and V using the same scale of measurement, COV (ϵ_1^V, ϵ_1^C), COV (ϵ_2^V, ϵ_2^C). Because we are interested in the magnitude of the unstandardized β coefficient and whether it varies linearly with sentiment, the model's parameters should be estimated for samples that differ on sentiment.

In addition to estimating the unknown parameters of the model, LISREL also provides a chi-square goodness-of-fit statistic for examining whether the model is consistent with the data. This goodness-of-fit test can be conducted whenever the model is overidentified (i.e., whenever more information is available than is necessary to derive the parameters). Under the present set of constraints, a chi-square can be computed simultaneously across the different sentiment groups to examine whether the model is simultaneously consistent with the data from all groups. A nonsignificant chi-square suggests that the data and the model are consistent. This test, however, depends dramatically on the size of the samples. With large samples, trivial discrepancies between the data and the model may lead to a significant chi-square (Bentler & Bonett, 1980).

Data

The coefficients of this model were estimated from data collected as part of the 1968 CPS National Election Study. We chose to

Table 3
Sample Sizes for Model Estimation

Sentiment group	Humphrey	Nixon
0–25	104	51
26–50	311	293
51–75	327	384
76–100	419	433
N	1161	1161

use these data because they have been used by others in making the case for assimilation–contrast asymmetry (Granberg & Brent, 1974; Granberg & Seidel, 1976; Kinder, 1978). The sample consisted of 1,384 respondents, representing a cross section of voting-age citizens in private households in the United States.

Respondents were asked to rate their own positions and the perceived positions of the presidential candidates (Nixon and Hubert Humphrey) on two issues: the Vietnam War and urban unrest. These ratings were done on seven-point scales with end points labeled "immediate withdrawal" and "complete military victory" for the Vietnam scale and "solve problems of unemployment and poverty" and "use all available force" for the urban unrest scale. Respondents also rated their sentiments toward each presidential candidate on a 100-point "thermometer scale." On this scale 0 was labeled "very cold," 50 was labeled "no feeling at all for the candidate," and 100 was labeled "very warm."

The model's parameters were separately estimated for both candidates. That is, we first looked at how one's position on the two issues affected one's perception of Nixon's position, and then we looked at the effect on one's perception of Humphrey's position. In each case the urban unrest ratings were used as V_1 and C_1 in the model, and the Vietnam ratings were used as V_2 and C_2. Previous research has shown that it is reasonable to believe that national political issues like these all tap a single underlying latent construct representing overall ideological orientation (Judd & Krosnick, 1982; Judd & Milburn, 1980).

In the case of each candidate, the sample was divided into four different sentiment groups to estimate the coefficient β in groups that differed on sentiment toward the candidate. The groups were defined by the following cutting points on the thermometer scales: 0–25, 26–50, 51–75, and 76–100. Table 3 presents the sample sizes for each sentiment group for each candidate, including only respondents who provided complete data on all relevant questions.

Results

Table 4 presents the maximum-likelihood estimates of the model's parameters for each sentiment group toward each of the two candidates. In the case of each candidate, the simultaneous fit of the model to the data from

Table 4
Maximum-Likelihood Parameter Estimates for Each Sentiment Group Toward Each Candidate

Sentiment group	β	σ_V^2	σ_ζ^2	$\sigma_{\epsilon_1 V}^2$	$\sigma_{\epsilon_2 V}^2$	$\sigma_{\epsilon_1 C}^2$	$\sigma_{\epsilon_2 C}^2$	COV ($\epsilon_1^V \epsilon_1^C$)	COV ($\epsilon_2^V \epsilon_2^C$)
Nixon									
0–25	−.55	2.96	.46	2.66	2.63	2.34	2.91	.35	−.55
26–50	−.17	1.84	.65	2.36	2.48	1.82	1.78	−.12	.10
51–75	.26	.76	.33	2.57	2.39	1.58	1.29	.45	.34
76–100	.73	.59	.19	2.95	3.22	2.29	1.81	1.30	1.38
Humphrey									
0–25	−.44	1.18	.57	2.20	3.28	2.23	1.71	.02	.00
26–50	−.18	1.16	.39	2.13	2.51	1.69	1.53	.33	.22
51–75	.36	.59	.28	2.55	2.81	1.70	1.67	−.07	.06
76–100	.67	.81	.05	2.55	3.06	2.13	2.36	1.14	1.36

the four sentiment groups is reasonable, given the relatively large samples: Nixon, $\chi^2(4) = 9.52$, $p = .059$; Humphrey, $\chi^2(4) = 14.44$, $p = .006$.

For purposes of examining assimilation–contrast asymmetry, we are primarily interested in the β coefficients: the unstandardized effect of V on C, controlling for correlated measurement error in indicators of V and C. Once these correlated errors of measurement are controlled, we might expect contrast effects to be more apparent than previous research has found. In fact this is the case. For the low-sentiment groups (0–25) in both the Nixon and Humphrey models, β takes on substantial negative values, significantly different from zero in both cases. Substantial evidence for contrast effects thus exists once the misspecification due to correlated errors of measurement is alleviated.

To overcome the third misspecification, that due to the omitted variable, C', we would like to see whether β is centered at zero (i.e., equals zero when sentiment is neutral) and whether it varies linearly with sentiment. Recall that β is used as an approximation of the unknown coefficient k_s. What we really would like to determine is whether k_s varies linearly with sentiment and equals zero at neutral sentiment. We have shown that β varies linearly with k_s but is displaced from it in a positive direction to the extent that the unknown variable C' is correlated with V.

Because β varies linearly with k_s, it can be used to determine whether k_s varies linearly with sentiment. The values of β for the Nixon and Humphrey models are graphed in Figure 4 as a function of the four sentiment levels. For both candidates, the linear trend in the β–sentiment relation is quite apparent. Using the standard errors for these coefficients provided by the estimation procedure, it is possible to calculate the significance of linear and nonlinear trends in these coefficients across sentiment levels. In both cases the linear trends are highly significant ($Z = 6.17$, $p < .001$, for Nixon, and $Z = 5.11$, $p < .001$, for Humphrey). None of the nonlinear trends approach statistical significance. If assimilation–contrast asymmetry were supported by these results, the graphed lines in Figure 4 would show a positive nonlinear trend. That is, the slope of both lines would become steeper as sentiment becomes more positive. Such nonlinearity is simply not present.

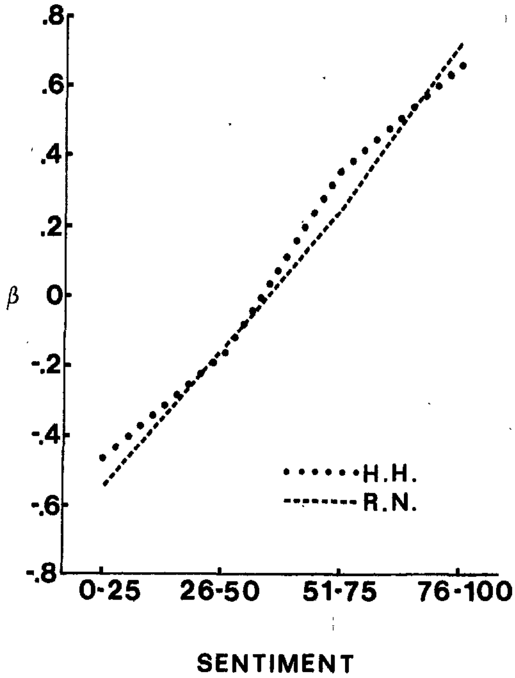

Figure 4. Relations between β and sentiment level for Humphrey and Nixon perceptions.

Although we have shown that k_s varies linearly with sentiment, it is still the case that the β coefficients of Table 4 are not centered at zero. The coefficients for the two positive-sentiment groups in the case of each candidate are of somewhat larger absolute value than are the coefficients for the two negative-sentiment groups. Nevertheless, the amount of displacement is not substantial. Extrapolating from the Nixon estimates, at neutral sentiment $\beta = .07$. At neutral sentiment for the Humphrey groups $\beta = .10$. Neither of these values differ significantly from zero ($Z = .99$ and 1.23, respectively).

Because we have shown that β is positively displaced from k_s, and because the amount of displacement of β at neutral sentiment is quite small, it may be that k_s itself, the coefficient in which we are really interested, is centered at zero. Recall that β is positively displaced from k_s to the extent that V and C', the candidate's undistorted position, are correlated. Using the formulas in the Appendix, it is possible to derive the correlation between

V and C' that would produce a displacement of β from k_s by .07 for Nixon and by .10 for Humphrey. In other words, if k_s were in fact zero at neutral sentiment, what is the size of the correlation between V and C' necessary to displace β by .07 and .10 for Nixon and Humphrey, respectively? If these correlations are of reasonable size, then our results suggest that k_s may in fact be centered at zero.

Two assumptions must be made to estimate these correlations. First, we must estimate the variance of C'. It seems likely that this variance is considerably less than the variance of the voter's own position. Hence, we have assumed that $\sigma_{C'}^2$ is one half of σ_V^2 (from Table 4) for each of the sentiment groups. Second, we assume that the slope of C' regressed on V ($b_{C'V}$) is constant across sentiment levels. In other words, a unit difference in V is associated with equal units difference in C' regardless of sentiment level. Under these assumptions, the correlation between C' and V necessary to displace β from k_s by .07 in the case of Nixon is .095. In the case of Humphrey, a correlation of .145 between C' and V would produce a displacement of β from k_s of .10. It seems to us that these low correlations between C' and V are entirely reasonable. If k_s were centered at zero and if only 2% of the variance in V was associated with variance in C', the β coefficients would show the displacement that our estimates in fact show. It seems reasonable, then, to believe that although β is not centered at zero, k_s may well be.

In sum, we have shown that the unknown coefficient, k_s, varies linearly with sentiment and may well be centered at zero. At the most, k_s is displaced from zero by a nonsignificant amount. Hence, when the misspecifications due to correlated measurement errors and an omitted variable are alleviated, no evidence remains to support the assimilation–contrast asymmetry hypothesis. This result is particularly striking in light of the fact that we have still not removed the bias due to the reciprocal causation misspecification.

Conclusion

The purpose of this article has been to develop an analysis strategy that is based on a set of reasonable assumptions to explore whether voters misperceive the positions espoused by political candidates. To do this, we have examined three different unreasonable assumptions or misspecifications in earlier research on this issue. We have argued that these misspecifications, due to correlated errors of measurement, reciprocal causation, and an omitted variable, have erroneously led researchers to conclude that assimilation effects are more potent than contrast effects. We have developed and tested a model that overcomes the misspecifications due to correlated errors of measurement and the omitted variable. Under this model, which still suffers from the reciprocal causation misspecification, no evidence was found for the assimilation–contrast asymmetry hypothesis.[1]

On a slightly broader concluding note, our ultimate objective has been to illustrate how causal models are implicitly assumed whenever researchers examine data to determine whether they are consistent with a hypothesis. It may be that the implicitly assumed models are unrealistic. With the development of techniques for examining and estimating the parameters of causal models (Duncan, 1975; Kenny, 1979), we are now in a position to examine critically the models we assume.

[1] There is a fourth possibly unreasonable assumption that we and others have made. It has been assumed that interval scales have been used to measure both sentiment and political positions. In the absence of such an assumption, assimilation–contrast asymmetry is indistinguishable from symmetry.

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Appendix

Derivation of r_{CV} and b_{CV} Under Different Assumptions Concerning C', Given the Model $C = C' + k_s(V - C') + U$

Assume that C' is constant. It follows that

$$\sigma_C^2 = k_s^2\sigma_V^2 + \sigma_U^2;$$

$$\text{Cov}\,(V, C) = k_s\sigma_V^2.$$

Therefore,

$$r_{CV} = \frac{\text{COV}\,(V, C)}{\sigma_V\sigma_C} = \frac{k_s\sigma_V^2}{\sqrt{\sigma_V^2(k_s^2\sigma_V^2 + \sigma_U^2)}};$$

$$b_{CV} = \frac{\text{COV}\,(V, C)}{\sigma_V^2} = \frac{k_s\sigma_V^2}{\sigma_V^2} = k_s.$$

Assume that C' is variable and COV $(C', V) \neq 0$. It follows that

$$\sigma_C^2 = k_s^2\sigma_V^2 + (1 - k_s)^2\sigma_{C'}^2 + 2k_s(1 - k_s)\,\text{COV}\,(C', V) + \sigma_U^2;$$

$$\text{COV}\,(V, C) = (1 - k_s)[\text{COV}\,(C', V)] + k_s\sigma_V^2.$$

Therefore,

$$r_{CV} = \frac{\text{COV}\,(V, C)}{\sigma_V\sigma_C} = \frac{(1 - k_s)[\text{COV}\,(C', V)] + k_s\sigma_V^2}{\sqrt{\sigma_V^2[k_s^2\sigma_V^2 + (1 - k_s)^2\sigma_{C'}^2 + 2k_s(1 - k_s)\,\text{COV}\,(C', V) + \sigma_U^2]}};$$

$$b_{CV} = \frac{\text{COV}\,(V, C)}{\sigma_V^2} = \frac{(1 - k_s)[\text{COV}\,(C', V)] + k_s\sigma_V^2}{\sigma_V^2} = k_s + (1 - k_s)b_{C'V},$$

where $b_{C'V}$ is the unstandardized regression coefficient of C' on V.

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