Partisan Strength and Uncertain Presidential Evaluations

by

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Abstract

American presidents, as do all democratic political leaders, rely on popular support in order to promote their political agenda, gain legislative victories, and succeed at the ballot box. Presidential approval, however, displays more than just a mean value, it also has a variance. And even a well regarded political leader would prefer to avoid widely variant support.

At the individual level, variance is analogous to the level of uncertainty that an individual has about presidential performance (Alvarez and Brehm 1995; Zaller 1992). This paper demonstrates the central role that partisan attachments play in fostering clarity in presidential approval. In general, respondents with stronger partisan attachments, combined with issue positions favorable to the president, are far more certain in their approval response. Fascinating variations in the role that party played during the Reagan years, compared to Carter, Bush, and Clinton, suggest a complex interaction between partisan ties, presidential performance, and the particular occupant of the oval office.

The paper draws on data from the National Election Studies, 1980–1994. Ordinary least squares regression models are estimated, and clear evidence of heteroskedasticity is shown. A more general model that includes both a model for the mean and for the variance is presented and estimated using the same set of data. The main hypotheses regarding partisan strength and response uncertainty are confirmed.

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In an era of the "public relations" presidency (Kernell 1993), public support has become more crucial than ever. As a consequence (or perhaps a partial cause), presidential approval is measured, reported, and dissected like clockwork. The public is not a monolith, however. Just as individuals differ in their policy opinions, partisan loyalties, and reactions to economic growth and decline, so we should expect some level of differentiation in public evaluations of presidential performance, certainly more than is captured by the conventional "approve/disapprove" dichotomy. One possibility is to seek out evaluations on other policy dimensions, such as presidential management of the economy or foreign policy. Or we might query about emotional and personality based assessments (e.g. Abelson, Kinder, Peters, and Fiske 1982; Kinder 1983; Kinder 1984). All of these are attempts to unpack the summary measure into its constituent parts.

A second alternative is to take the survey response as given, using it as evidence for both the level of approval, but also the certainty in the individual's response. If we accept the model of the survey response as not a true mapping to an unobserved value, but instead a reflection of the mix of considerations that the respondent draws upon at the time of the interview (Feldman and Zaller 1992; Zaller 1992), then there is a straightforward extension of that theory to the variance portion of an individual level model. The variance corresponds to individual uncertainty about the attitude object (Alvarez and Brehm 1995); in this case, whether a respondent approves or disapproves of presidential performance.

In this paper, I test whether strength of partisan attachments serves as a base of predispositions for attitudes about presidential performance. My expectation is that weaker partisan affiliation result in greater uncertainty about presidential performance. This effect should be independent of the particular occupant in the oval office. In the sections that follow, I elaborate the relationship between partisan affiliations and presidential approval, present an approval model which incorporates both a model of the mean and a model for uncertainty, and estimate this model using the 1980–1994 National Election Studies. In the end, I conclude that my main hypothesis is strongly confirmed, with a significant variation. It is misleading to employ partisan attachment and strength as a unidimensional scale. This disguises more than it reveals. Instead, very much in line with scholars who claim that partisanship is best thought of as multidimensional (Wattenberg 1996; Weisberg 1980), Democratic and Republican attachments, interacting with the nature of the particular occupant in the oval office, make separate and independent contributions to response certainty.

Partisanship and Presidential Approval

The vagaries of public approval are well documented – presidents benefit from economic growth, are penalized by downturns, and benefit differentially from war and peace, depending on how the country's role is perceived. We also know, from aggregate results, that the approval series and the macropartisanship series are cointegrated (Mackuen, Erikson, and Stimson 1989, but see Green et al. 1996). In previous work, using aggregate data, my coauthor and I discovered that presidential approval has become more volatile in the postwar era, and that the increase is related to changes in partisan attachments (Brehm and Gronke 1996; Brehm and Gronke 1994). At least at the aggregate level, partisanship and presidential approval are closely linked.

When we are examining individual attitudes, however, we have to be concerned with attitude stability as well as attitude level. We cannot assume, as at the aggregate level, that idiosyncrasies, accidents, and measurement error cancel each other out (see Berinsky 1997 for a nice discussion of the aggregate-individual link). It is unrealistic to assume that our survey measure reflects precisely the underlying attitude held by an individual. That has long been recognized. More recent developments in survey theory, however, go further. In a survey interview, as conceptualized by Feldman and Zaller (1992), a respondent draws upon a pool of considerations which are evoked by the stimulus (the question). Respondents apply some weighting to these considerations, produce an average, and provide a response. The mix of considerations will vary based on predispositions of the individual, individual exposure to political information, and the nature of the survey.[1]

[1]Multiple applications of this model are presented in Zaller (1992).

This description of the survey interview has intuitive appeal. Yet, the model has something of a mindless quality about it. Respondents are trapped by their own predispositions and the mix of elite debate. More recent applications have added a more dynamic element to opinion formation (Alvarez and Brehm, (1997b, 1997a, 1995)). In their formulation, one gets a feel for a respondent weighing various arguments, pro and anti; balancing considerations; and explicitly wrestling with situations of uncertainty, ambivalence, and equivocation.[2]

In the realm of presidential approval, I believe that partisanship is the key predisposition (thus mirroring Zaller (1992)) which leads to greater or lower levels of certainty in the approval response. Partisanship has long been recognized to play a central role in structuring individual attitudes. It is well established that partisanship responds, albeit slowly, to political experiences, but also shapes the way an individual views those experiences. Partisanship provides an inertial base to political attitudes, helping individuals organize, understand, and react to political information.

If partisanship stands at the central nexus of political attitudes, then the presidency stands at a central nexus of political experiences that individuals are exposed to and learn from. The president plays a role in children's political socialization. Satisfaction (and dissatisfaction) with presidential performance formed the centerpiece of Fiorina's reformulation of partisan change (1981). For better or worse, the president is the most recognizable political figure for most Americans, and he is where Americans project many of their complaints about the political system (Kinder and Fiske 19xx; Popkin 1994; Kramer 1973), and partisan realignments seem to turn in large part on presidential elections and presidential performance in office (Aldrich and Niemi 1990).

Party and president are intertwined. It is the nature of their interaction that concerns me here. If partisanship forms a stable core to political attitudes, there is no reason it ought not operate the same way with regards to the central attitude object, the President. Thus, strong partisans, who have well developed partisan schemas, and who will tend to read new political news in light of their prior beliefs, should have an easy time "averaging" their considerations about the president. They love him or they hate him. With weaker partisan attachments, ancillary attitudes may be less firmly grounded. When these respondents are asked to evaluate the president's performance, their responses will be less certain, either because they are based on a mix of conflicting considerations

[2]For other demonstrations of respondents wrestling with conflictual positions and uncertainty, see Kinder and Sanders (1996), Sniderman, Brody, and Tetlock (1991) and the candidate placement results in Bartels (1986).

(i.e. they are cross–pressured) or because the partisan coloration of that information is lacking.

At the same time, partisanship has direction as well as strength. We also know that it is easier to maintain an attitude when new information supports rather than challenges that attitude (or we may simply filter out contrary messages). For presidential approval, the aggregate results show us that good economic conditions benefit the president. At the individual level, thinking in terms of response variability, this implies that individuals with strong partisan attachments will process political information through a well-developed partisan schema. Their attitudes will be more certain and less likely to change over time.

This leads to a simple set of hypotheses about partisanship and presidential approval. Individuals with well developed partisan schema – as measured by the strength of their partisan attachments – should be more certain when asked to evaluate the president. Second, individuals whose partisan membership matches the president's – measured by partisan agreement[3] will be subjected to fewer cross pressures and also be more certain in their evaluations. In the next section, I show how these measures of certainty can be captured via the variance portion of a regression.

Measuring Uncertainty via Regression Variance

Most scholars focus resolutely on mean presidential approval, for good reasons. First, presidential approval is a proportion (e.g. "Clinton's approval rating stands at 55%"), and it is well known that the variance of a proportion is a simple mathematical transformation of the proportion ($var_p = \frac{p(1-p)}{n-1}$). Second, presidential approval is available at the aggregate only, through sources such as *The Gallup Monthly* or more recently on the World Wide Web. Even if there were a way to extract cross-sectional variation from these data, individual level scores are unavailable.[4] In this paper, I take a different approach. I turn to a four–point scale of presidential approval, which both contains more information than the traditional dichotomy, and can (with some trepidation) be analyzed using a normal distribution.

I assume that presidential approval is not really a four point scale, but is a continuous distribution from which we force the respondent to give one of four responses, hoping that the response

[3]This is simply the party ID scale, strong Democrat to strong Republican, interacted with the party of the president. Therefore, if the president is a Republican, then strong Republican is 1 and strong Democrat is zero; for Democratic presidents, the scale is reversed.

[4]There are multiple strategies for extracting variation from dichotomous scores. See Gronke 1996 for a discussion.

categories capture the dimensionality of the underlying construct. For some individuals – those who are quite uncertain about how they feel about the president – the underlying distribution will be very wide. Even though their "mean" value (the one they provide to the survey interviewer) may be "somewhat disapprove," the relatively flat shape of their distribution of approval (or the wide spread of considerations) means that they might err, and tell us "somewhat approve" or "strongly approve." On the other hand, individuals who are very certain about the president will draw their response from a tight underlying distribution (or a narrow set of considerations), and the likelihood of error is consequently lower.

The innovation of Alvarez and Brehm (1995) is that the spread of underlying considerations is analogous to the variance portion of a regression (or, in their case, of a binary choice model). Assume for the moment that we have a well specified model of the mean for presidential approval. Under standard regression assumptions, the error variance for such a model should be homoskedastic. If it is not, then the estimates for the standard errors are inefficient. Standard solutions can be applied to these kinds of data (these are listed below). However, if our theory leads us to expect unequal variance among individuals, we can model that directly.

The model I consider is:

$$Y_i = X_i \beta + \varepsilon_i' \tag{1}$$

with heteroskedastic errors. The standard form of heteroskedasticity that many are familiar with is the case in which the variance of the error term varies with respect to the values of one of the independent variables (Hanushek and Jackson (1977), p. 157–163; Greene (1993), Ch. 14).

$$h_i = (X_t' \beta)^2 \alpha^2 \tag{2}$$

where α is a scalar parameter. Another commonly seen specification in the weighted least squares context (Judge et al. 1985) is:

$$\hat{\beta} = (X' \Omega^{-1} X)^{-1} X' \Omega^{-1} y \tag{3}$$

where the analytic problem is specifying the contents of Ω in a feasible manner such that we can make inferences about β.[5]

[5] In these cases, heteroskedasticity can be easily remedied, even if we are unable to specify the particular form, by dividing by the offending variable or by the square of the estimated variance from the first stage estimate (weighted

A more general specification does not assume that any specific exogenous variable (X) is the cause of heteroskedasticity. Instead, a set of exogenous indicators Z_i, which may or may not be part of the model of the mean, are entered into the model for the variance. In likelihood notation, I estimate this model:

$$logL\{\tilde{\beta}, \tilde{\alpha}|y\} = -\frac{1}{2}\sum_{t=1}^{T} ln(z_t'\alpha) - \frac{1}{2}\sum_{t=1}^{T}\frac{(y_t - x_t'\beta)^2}{(z_t'\alpha)} \quad (4)$$

where Y_i, presidential approval, is measured as a four point scale, Xt are the independent variables, β are the parameters to be estimated, and ε_i' is a zero mean, serially uncorrelated process with variance given by the function $Z_i\alpha$ (in this case, I assume that errors are heteroskedastic with respect to the standard deviation of ε; for other specifications, simply square or exponentiate).

This approach has two great benefits. First, the log likelihood ratio provides a simple test of whether the variance model adds anything to the fit beyond the standard regression model. Second, this approach requires the analyst to specify the nature and cause of uncertainty (the variance portion of the model). This is in contrast to the common solution for heteroskedasticity, robust regression, which, although improving the precision of our estimates, does little to help us understand the attitudinal underpinnings of variable responses.

In the first stage of the analysis, I ran an ordinary least squares regression, saved the residuals, and regressed them on partisan strength, partisanship, and economic assessments (and a vector of ones). As noted above, these variables capture partisan schematics and partisan and policy agreement with the president. The regression on residuals provides a simple initial test of the hypothesis forwarded here. If the coefficient on partisan strength is significant, it serves as confirmation of the main hypothesis: weaker partisans, *ceteris paribus*, are more variant in their assessments of the president. In addition, if the residuals saved from this second regression are homoskedastic, it serves as further confirmation that partisan strength serves as the main cause of heteroskedasticity. These results are reported in Table 1 (below) and in Table A1 in the Appendix. In the second stage of the analysis, I estimate equation 4 using data from the 1980–1994 National Election Studies.

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least squares) (Judge et al. 1985). A more robust specification uses "White's" robust standard errors (Greene 1993; Judge et al. 1985, p. 422–427). This produces more efficient estimates, but it does not allow us to test specific hypotheses about the underlying variance process.

Analysis

The analysis will proceed in three steps. First, I will briefly outline my model for the systematic component of presidential approval. On the whole, this model is a cross–sectional variant of well–known time series models. I will not describe this specification in length. Second, I will show how the regressions estimated from these models display heteroskedasticity by all of the standard diagnostic tests. Finally, I will add partisan strength and partisanship as exogenous determinants of heteroskedasticity to the model specified above.

The cross–sectional determinants of the level presidential approval which I draw upon here are quite straightforward. I hypothesize that a respondent's level of approval of presidential performance is determined by four general effects: partisanship and ideological proximity, evaluations of economic performance, and social position (as reflected in demographic characteristics). I expect that strong partisans of the president's party, all else being held equal, will be more likely to approve of his performance in office. I model this effect as linear with respect to direction of partisanship.[6] Similarly, ideological (liberal-conservative) and policy proximity is theorized to have a linear influence on approval. The farther away a respondent places themselves from the position of the president, the less likely they are to approve of presidential performance.[7] I also add a measure of economic evaluations, since it is well known that the perceived state of the national economy plays a great role in determining presidential approval. The rest of the model is made up of a basic set of demographic indicators, gender, race, region, and income.

All variables except for presidential approval were recoded to the zero-one range to ease com-

[6] If we try to compare this measure directly to the ideological distance measure, it implies that presidents occupy the most extreme partisan positions. Alternatively, one might think of this as analogous to the directional model of voting posited by MacDonald and Rabinowitz (CITE). Therefore, partisan extremists are always "closest" and therefore should rank presidential performance most highly. This is not an accurate portrayal of presidential partisanship. However, unlike the ideological and policy measures, I have no common metric to place presidents on the partisanship scale. The specification here works well across three presidents and eight surveys, so I feel comfortable continuing with it.

[7] The president is placed at the median placement observed in the sample. This assumes that our best estimate of the true position of the president is the midpoint of the where all respondents placed him. This recovers between XX and YY% of the sample in the years we examine. The most significant fall off occurs when respondents are asked to place candidates. It also it averages out idiosyncratic and uninformed placements, as well as controlling for projection effects. Thanks are due to John Aldrich for pointing out this measure. I chose to exclude liberal/conservative from the results reported here because the number of missing cases on individual placements continued to be high. Including liberal/conservative scores lost between 16 and 34% of the cases, compared to the models reported in Table A1 in the Appendix.

parisons across coefficients. Respondents who did not give a response on any item were dropped from the analysis. Variable descriptions and direction are as follows:

- *Presidential Approval* is a four point scale, running from strongly disapprove to strongly approve.
- *Party ID* is the standard NES six point scale, coded in the direction of the president's party (e.g. Democratic is 1.0 when Democrats are presidents; vice versa for Republican presidents).
- *Strength of PID* is the party ID scale "folded" about its midpoint (four equals independent affiliation, one equals strong partisan affiliation).
- *State of Economy* is a five point measure of national economic performance evaluation, running from "strongly approve" to "strongly disapprove".
- *Distance measures* consist of three variables, the absolute value of the difference between the individual's position on three policy scales, defense spending, government aid to minorities, and government services vs. spending, subtracted and the median sample placement of the president on these same scales.
- *Political Interest* is a five point scale measuring the respondent's expressed interest in politics.
- *Demographics*: Race, sex, and region are dummy variables, with race interacted with a variable representing the president's party (-1=Democrat, 1=Republican), under the assumption that Blacks rate Democratic presidents more highly than Republican presidents. Income is coded as reported in the NES codebook.

The Breusch-Pagan reported in Table A1 (see Appendix) tests whether *any* of the slopes are discernibly different from zero (Judge et al. (1985), p. 446-7). I want to limit the Z matrix to include only the variables of interest, partisan strength and partisan identification (this is essentially a more narrow specification of the Breusch-Pagan test). In Table 1, I report the estimated α coefficients for 1980 through 1994. Partisanship, strength and direction, is negatively correlated with the OLS residuals. In 13 out of 16 cases, the coefficients are correctly signed and discernibly different from zero. The most worrisome exception is for party ID in 1980 – this coefficient is both incorrectly signed and positive, implying that the more Democratic your identification, the more variant you are in your evaluations of Carter, *ceteris paribus*. The results for economic evaluation

Table 1: The Effects of Partisanship on Response Variable Assessments

Year	Party ID[a] Strength	Party Evaluation	Economic	Heteroskedasticity Test[b]	No Remaining Heteroskedasticity[c]
1980	***.065***	-.020	-.018	**41.4**[d]	17.6[e]
1982	**-.029**	**-.051**	.021	**23.0**	**23.4**
1984	**-.068**	**-.033**	.009	**83.0**	**33.2**
1986	**-.057**	**-.026**	**.022**	**45.1**	**26.7**
1988	**-.055**	**-.050**	.006	**46.8**	**21.2**
1990	**-.064**	**-.074**	-.009	**36.8**	**37.5**
1992	***.019***	**-.032**	.010	**24.4**	**26.7**
1994	*.008*	**-.029**	.006	**11.0**	5.9

[a]Cell entries were obtained by were obtained by squaring the residuals from each of the yearly regressions and regressing them on partisanship and party strength. Coefficients significant at the .05 level are in bold; italicized coefficients run opposite to expectations.

[b]Entries in this column are NR^2, obtained from the regression of of party ID and party strength on ee'. This is an estimate for Breusch-Pagan statistic, distributed as χ^2 (Judge, Griffiths, Hill, Lütkepohl, and Lee 1985).

[c]Entries in this column are NR^2, obtained from a regression of all regressors *except* partisan measures on ee'.

[d]Entries in boldface meet or exceed the .01 probability threshold. With 3 degrees of freedom, $\alpha \leq .01$ when $\chi^2 \geq 9.3$

[e]With 7 d.f., $\alpha \leq .01$ when $\chi^2 \geq 18.5$.

failed to meet my expectations – in only one year, 1986, are positive economic evaluations correlated with lower residuals.[8] Clearly, heteroskedasticity is evident, and it is related to the strength and direction of partisan attachments.

Next, following the logic outlined above, I tested whether the subset of variables that I am interested in, partisan strength, partisan agreement, and positive economic evaluations, can be

[8]I am not certain what to make of this result since, as shown below (Table 2), economic evaluations are statistically significant in the variance portion of the heteroskedastic regression models for 1982–1988. One possible explanation is that the Breusch-Pagan, either as I have calculated it here (manually) or in general, is prone to make Type 2 errors. I have tested other potential predictors for heteroskedasticity, including race (based on results from my previous work that suggested that whites were more variant in evaluations than Blacks) and political information (applying the same logic as partisan strength – more informed respondents will be less variant), and whenever the diagnostic indicated no variation with the size of the residuals, the same results was obtained via heteroskedastic regression.

A second possible explanation turns on the nature of popularity during the Reagan years. As I reported in a previous work (1996), Reagan's popularity profile was uniquely *dissensual*. Compared to Ford, Carter, Bush, and Clinton (only for two years of data), group differences on approval were very large during the Reagan years. Even positive events failed to reduce the gap. Reagan was a divisive political figure. Perhaps it is not coincidental that economic evaluations load in the variance portion of the equation only during the Reagan years. However, I don't see how this can account for a discrepancy in statistical significance between a diagnostic and an estimated coefficient.

isolated as the only causes of heteroskedasticity. In the right two columns of Table 1, I report the tests for heteroskedasticity for the three regressors, and all remaining regressors. As with the individual scores, the results are mixed. The test for heteroskedasticity that includes partisanship and economic evaluations meets a far higher confidence level than for the remaining variables (as noted in the table footnote, scores in column six need to be twice as high to meet the same level of statistical significance). In two of the eight years, I have "correctly" diagnosed the causes of heteroskedasticity (1980 and 1994), while in the other years, even though reduced substantially, remnant heteroskedasticity with regard to other exogenous variables is evident.

The evidence thus far supports my hypothesis that partisanship acts as something of a leveller for opinions. Those with weaker partisan attachments, and whose partisan affiliation stands counter to the president, are more variant in their opinions. Are these conclusions borne out in a fully specified model?

Heteroskedastic Regression Results

Heteroskedastic regression involves a simple extension of the model presented above. In Table 2, I report the results from a heteroskedastic regression model which explicitly models the variance from equation 4. The results for the model of the mean are encouraging; the estimated $\hat{\beta}$ coefficients are unchanged, as they should be. Standard errors are a bit smaller, which is to be expected because we have diagnosed and resolved heteroskedastic errors. The goodness of fit is improved. The results for the model of the mean are unchanged.

What do the results of the variance portion mean? In a standard regression, we predict a score for the "average" case with a given set of scores on the independent variables. We are also provided an average amount of "error", the standard error of the regression. However, as shown above, the ordinary least squares standard error is biased — among strong partisans, our predictions are actually better than the "average" error forecasts, and for weaker partisans, our predictions are actually poorer. The variance equation puts an estimate on the amount of difference.

The use of heteroskedastic regression reduces the range of predicted values ($\hat{Y}$) and lends precision to our estimates. In some years, it provides a significant difference in the accuracy of our forecasts. For example, in 1988, we cannot say with 95% confidence that a randomly selected individual will approve of the president's performance. Even if we forecast the expected approval score for a strong Republican in 1988, we cannot say with 95% confidence that the approval score is on the positive side of the ledger (holding all other variables at their mean). However, once we account for the lower variability of approval scores among strong partisans, we are able to forecast, with 95% confidence, that a strong Republican in 1988 would approve of Bush's performance. Of course, this increased accuracy comes with a price — among weaker partisans, we decrease the level of confidence we have in any particular forecast.

The variance portion of the equations mirror the results shown in Table 1, strongly confirming my primary hypothesis regarding partisanship. In each year under study, weaker partisan affiliators, *ceteris paribus*, are more variant in their evaluations of the president. Partisan attachments have often been conceptualized as a screen on information reception and retrieval (Zaller 1992). Strong partisans, of either party, are more likely to access and interpret political news in light of their partisan affiliation, and thereby reinforce prior held political expectations. While I do not have data that would directly address this question, the indirect evidence is supportive. Strong partisans of both coloration are less variant in their assessments of presidential performance relative to weak

Table 2: Heteroskedastic Regression 1980-1994

Variable	1980[a] b	1980[a] (se)	1982 b	1982 (se)	1984 b	1984 (se)	1986 b	1986 (se)
	Mean Equation							
Party ID	**.344**	(.030)	**.544**	(.030)	**.499**	(.023)	**.395**	(.023)
Strength of PID	.056	(.031)	**-.106**	(.033)	**-.062**	(.022)	-.002	(.024)
State of Economy	**-.189**	(.046)	**-.155**	(.025)	**-.192**	(.022)	**-.179**	(.020)
Political Interest	**-.032**	(.101)	-.0008	(.011)	.002	(.007)	**-.028**	(.008)
Dist (defense)	-.004	(.009)	**-.046**	(.008)	**-.055**	(.006)	**-.047**	(.006)
Dist (gov't aid)	**-.025**	(.008)	.006	(.010)	-.011	(.006)		
Dist (gov't serv)			**-.045**	(.008)	**-.015**	(.005)	**-.025**	(.006)
Race (Black)	**.142**	(.046)	**.088**	(.034)	**.145**	(.033)	**.151**	(.027)
Sex (Female)	**.046**	(.020)	-.026	(.019)	.021	(.013)	-.020	(.015)
Region (South)	-.002	(.021)	-.015	(.020)	**.035**	(.014)	**.054**	(.016)
Income	**-.025**	(.009)	.008	(.009)	.009	(.006)	.007	(.007)
Constant	.841	(.063)	.623	(.060)	.570	(.043)	.740	(.046)
	Variance Equation							
Party ID	**.110**	(.021)	**-.056**	(.019)	**-.146**	(.016)	**-.113**	(.015)
Strength of PID	-.031	(.022)	**-.089**	(.022)	**-.067**	(.015)	**-.068**	(.017)
Economy	-.045	(.032)	**.051**	.(.017)	**.058**	(.015)	**.075**	(.014)
Constant	.400	(.017)	.323	(.025)	.342	(.015)	.358	(.017)
Pseudo R^2	.248		.527		.544		.363	
$-2(\ell\ell_0 - \ell\ell_1)^b$	34.07		23.87		150.36		47.09	
N of Cases	889		811		1232		1545	
Reduction in Error[c]	16.6%		21.2		21.8		19.6	

[a]Data Source: 1980–1994 National Election Studies. Estimates were obtained via the HET procedure in Shazam.

[b]This row reports the improvement in fit due to adding the variance portion of the model ($\ell\ell_0$ refers to the log likelihood from the OLS equation).

[c]Entries in this row contain the percent reduction in standard error from the OLS regression to the heteroskedastic regression.

partisans and independent affiliators. Strong partisans form the bulwark of a president's support (and opposition), and our regression models ought to take this increased confidence into account. Similarly, president's are not only less likely to gain approval from weaker partisans, but they ought to be less confident in any particular expectation, even given other events that may play in their favor (e.g. good economic news and beneficial issue positions).

Table 2: (con't) Heteroskedastic Regression 1980-1994

Variable[a]	1988 b	1988 (se)	1990 b	1990 (se)	1992 b	1992 (se)	1994 b	1994 (se)
	Mean Equation							
Party ID	**.493**	(.026)	**.321**	(.028)	**.535**	(.022)	**.482**	(.025)
Strength of PID	-.005	(.028)	.045	(.030)	**.079**	(.023)	-.018	(.027)
State of Economy	**-.193**	(.024)	**-.129**	(.036)	**-.241**	(.027)	**-.144**	(.022)
Political Interest	**-.045**	(.009)	-.008	(.010)	**.036**	(.008)	-.017	(.009)
Dist (defense)	**-.070**	(.008)	**-.054**	(.008)	**-.045**	(.007)		
Dist (gov't aid)	.010	(.009)	-.004	(.009)			**-.017**	(.007)
Dist (gov't serv)	-.012	(.008)	-.005	(.009)	-.001	(.006)	**-.028**	(.008)
Race (Black)	**.194**	(.034)	**.124**	(.034)	**.063**	(.021)	**.161**	(.029)
Sex (Female)	**-.040**	(.017)	**-.049**	(.019)	.021	(.014)	.012	(.017)
Region (South)	**.067**	(.018)	.019	(.021)	**.044**	(.015)	**-.035**	(.017)
Income	.010	(.008)	**.024**	(.008)	.001	(.007)	-.010	(.008)
Constant	.668	(.055)	.608	(.060)	.465	(.047)	**.922**	(.043)
	Variance Equation							
Party ID	**-.097**	(.018)	**-.098**	(.019)	**.045**	(.015)	.019	(.016)
Strength of PID	**-.113**	(.020)	-.015	(.020)	**-.076**	(.016)	**-.054**	(.019)
Economy	**.051**	(.017)	-.011	(.025)	-.002	(.019)	.012	(.015)
Race	-.013	(.023)	-.012	(.023)	.032	(.014)	-.012	(.020)
Constant	.373	(.020)	.383	(.029)	.304	(.023)	.329	(.017)
R^2	.480		.207		.420		.378	
$-2(\ell\ell_0 - \ell\ell_1)$	71.143		29.470		29.718		9.489	
N of Cases	1070		1243		1515		1235	
Reduction in Error	23.1		17.8		20.2		19.0	

[a]See notes above

Partisan agreement and economic evaluations operate in a different fashion, more as issue placements than as surrogates for information exposure and retrieval. Those who place themselves closer to the president's party or who evaluate the economy in a positive way have an easier time. One might surmise that partisan agreement and positive economic assessments makes it much easier for a respondent to calculate an "average" approval rating out of the store of considerations that might be brought to mind (Zaller 1992) or that they are less likely to encounter uncertainty (e.g. I might like presidential performance in domestic areas, but dislike the president's foreign policy or party, as Wildavsky argued decades ago in the "Two Presidencies.") In either case, those with policy and party positions favorable to the president would display lower variability in their responses.

And the models perform well overall. Out of the 24 coefficients, 16 are both correctly signed and in the expected direction, with one estimate additional correctly signed but failing to meet the conventional .05 level of significance. The bulk of the misses are for the economic variable, which, as the footnote on pg. made clear, was already problematic after initial diagnostics. And, again replicating the results from Table 1, partisan agreement in 1980 is incorrectly signed (more Democratic is associated with higher errors, *ceteris paribus*) and statistically significant. The overall reduction in error is impressive, on the order of twenty percent. For example, as reported in the original regression, the standard error of our estimate in 1980 is .299, while the standard error, purged of heteroskedasticity, is .249, a reduction of 16.6%. For other years, the figures range from 17.8% to 23.1% (shown in the last entry for Table 2). As the examples listed above make clear, however, a 20% reduction in error not only improves the fit of the model to the data; more importantly, by increasing the precision of our forecasts, it allows us, under particular circumstances, to state with confidence that groups support, or oppose the president, whereas without the reduction in error, we could not make such a forecast. This analysis has revealed important differences in the way that strong and weak partisans evaluate the president. From a modeling perspective, we want to take these differences into account, especially since heteroskedastic regression is a straightforward operation in most statistical packages.

Alternative Specifications for Partisanship

Is it reasonable to think that partisans react the same way to a President of the same or opposing party? This is what the model I have presented assumes — as we vary partisanship by one unit (for this example, toward Republicanism), from strong Democrat to weak Democrat, or from weak Republican to strong Republican, the effect on uncertainty is the same. A second possibility is that partisans vary in their responses. At the individual level, Zaller (1992) found that partisan predispositions are the primary influence on the shape of attitude change. And at the group level, Gronke (1996) showed that partisan groups consensus on presidential performance was far lower during the Reagan administration than during the Ford, Carter, and Bush administrations.

Therefore, in Table 3, I report the estimated coefficients from the variance equation, under two different specifications. On the right hand panel, labelled "single party variables", I have repeated the results reported in Table 2. On the left hand panel, labelled "separate party variables", I substitute *Democrat* and *Republican* for Party ID and party strength. These new variables are coded as follows: if a respondent identifies themselves as an Independent or any flavor Republican, then they score a 0 on Democrat; otherwise, Democrat runs from 1–3. Similarly, Democrats and Independents are scored 0 on the Republican variable; otherwise, Republicans score 1–3. These variables capture both partisan strength and partisan direction (thus partisan strength is removed from the equation), and estimates separate slopes for Democrats and Republicans.

The results from the second model reveal fascinating differences in Democratic and Republican reactions to presidents. In years that were a referendum on partisan presidential leadership, 1982 (the country was in the depths of a recession which many blamed on Reagan's budget policies),

Table 3: Alternative Specifications for Partisanship in the Variance Model

		Separate party variables					Single party variables			
		Coeff [a]	SE	T-Stat	Elast.[b]		Coeff	SE	T-stat	Elast.
1980	Democrat[c]	.010	(.008)	1.16	.030	Party ID	.110	(.021)	5.35	.170
	Republican	-.029	(.008)	-3.77	-.120	Strength PID	-.031	(.022)	-1.42	-.040
	Econ Eval	-.040	(.032)	-1.25	-.040	Econ Eval	-.045	(.032)	-1.40	-.040
	$-2(\ell\ell_0 - \ell\ell_1)^d$	*38.347*					*35.251*			
1982	Democrat	-.021	(.008)	-2.59	-.090	Party ID	-.056	(.019)	-2.87	-.100
	Republican	-.038	(.008)	-4.71	-.160	Strength PID	-.089	(.022)	-3.96	-.130
	Econ Eval	.046	(.017)	2.63	.090	Econ Eval	.051	(.017)	2.92	.100
	$-2(\ell\ell_0 - \ell\ell_1)$	*32.555*					*29.447*			
1984	Democrat	.003	(.006)	.416	.010	Party ID	-.146	(.016)	-9.31	-.250
	Republican	-.046	(.005)	-9.42	-.260	Strength PID	-.067	(.015)	-4.40	-.120
	Econ Eval	.060	(.015)	4.00	.110	Econ Eval	.058	(.015)	3.79	.100
	$-2(\ell\ell_0 - \ell\ell_1)$	*152.925*					*152.081*			
1986	Democrat	-.004	(.006)	-.577	-.010	Party ID	-.113	(.015)	-7.33	-.180
	Republican	-.042	(.006)	-7.14	-.180	Strength PID	-.068	(.017)	-4.03	-.100
	Econ Eval	.075	(.014)	5.40	.130	Econ Eval	.075	(.014)	5.38	.130
	$-2(\ell\ell_0 - \ell\ell_1)$	*70.129*					*70.122*			
1988	Democrat	-.021	(.008)	-2.77	-.080	Party ID	-.097	(.018)	-5.51	-.160
	Republican	-.053	(.007)	-8.15	-.240	Strength PID	-.113	(.020)	-5.76	-.170
	Econ Eval	.048	(.017)	2.87	.080	Econ Eval	.051	(.017)	3.09	.090
	$-2(\ell\ell_0 - \ell\ell_1)$	*68.470*					*68.010*			
1990	Democrat	.012	(.007)	1.59	.040	Party ID	-.098	(.019)	-5.27	-.140
	Republican	-.022	(.007)	-2.90	-.080	Strength PID	-.015	(.020)	-.76	-.020
	Econ Eval	-.012	(.025)	-.49	-.010	Econ Eval	-.011	(.025)	-.45	-.010
	$-2(\ell\ell_0 - \ell\ell_1)$	*29.032*					*28.724*			
1992	Democrat	-.033	(.005)	-6.14	-.150	Party ID	.045	(.015)	3.02	.070
	Republican	-.016	(.006)	-2.65	-.060	Strength PID	-.076	(.016)	-4.84	-.120
	Econ Eval	.002	(.018)	.11	.000	Econ Eval	-.002	(.019)	-.10	.000
	$-2(\ell\ell_0 - \ell\ell_1)$	*35.420*					*31.253*			
1994	Democrat	-.015	(.007)	-2.17	-.060	Party ID	.019	(.016)	1.13	.030
	Republican	-.021	(.007)	-3.25	-.090	Strength PID	-.054	(.019)	-2.88	-.080
	Econ Eval	.009	(.015)	.61	.010	Econ Eval	.012	(.015)	.78	.020
	$-2(\ell\ell_0 - \ell\ell_1)$	*10.704*					*10.378*			

[a]Data Source: 1980-1994 National Election Studies. Estimates were produced using Shazam's HET procedure.

[b]Elasticity at the means is the first derivative of the function with respect to the particular variable, calculated at the mean. Roughly comparable to a slope coefficient.

[c]*Democrat* is coded from 0 (Republicans and Independents) to 3 (Strong Democrat); *Republican* is coded similarly for Republicans.

[d]Log likelihood tests are calculated relative to an OLS model with no model for the variance.

1988 (the election turned on a continuation of Reagan's legacy), and 1992 (viewed as a revival of Democratic party fortunes, at least as embodied in the "new" Democrat, Bill Clinton), party functions as my theory predicts. Strong partisans of both coloration have more certain attitudes about presidential performance. In years where Reagan's leadership was relatively unchallenged, 1984 and 1986 (the survey was half completed when the Iran Contra scandal broke), Republicans were as confident as ever in their responses, while Democrats in this period were at sea. Their strong Democratic leanings made them no more or less certain in their evaluations of Reagan's performance than less partisan respondents. Interestingly, the Reagan years display a second distinctive characteristic – positive economic evaluations also helped respondents' level of certainty.[9]

These results also bear on the question of realignment, or at least partisan disequilibrium during this period. During the 1980's, arguably starting in 1980, Democratic partisanship was in flux. In 1980, the *more* Democratic your affiliation, the *less* certain you were about Carter's performance. Democrats were very much at sea during the Reagan years, with partisanship providing little guidance to help them evaluate the President. By the close of the Reagan years, and certainly by the first two Clinton elections, party has returned to its expected, complementary role. Both strong Democrats and strong Republicans are more certain of their evaluations, and economic assessments have retreated in prominence.[10] These findings regarding realignment, while impressive, are tentative. It would be far better to have extended the comparisons backwards, into the Carter years, where I would expect to find a "normal" pattern of partisan evaluations, and forward into the 1996

[9]As reported in this table, a higher value on this variable indicates more *negative* economic evaluations; thus, the positive coefficient means that the more negative your evaluation, the *less* certain you are in your response. This variable needs to be reversed in future drafts.

[10]Aldrich and Niemi (199x, Aldrich and Niemi (1990) argue for a different timeline. The 1970s and 80s were periods of partisan stability. If, as Aldrich (1997) suggests, we are witnessing a critical era today, then I expect to again see a breakdown in symmetry.

Clinton election, where again I would expect a return to "normality."

The two specifications of partisanship in Table 3 reflect two competing models of partisanship. The partisanship scale that has been reported in the NES since 1952 is unidimensional, running from "strong Democrat" through "Independent" to "strong Republican." It assumes that an individual placement on this scale reflects a policy or affectively based attachment to one of the two main political parties. By the late 1970s, however, it was clear that something was awry in the partisanship measure. The tides of partisan change, particularly increases in negative feelings toward both political parties, brought into serious question the unidimensional conceptualization of party. Some scholars suggested that partisan attachments were multidimensional. The affective and and policy/membership components were distinct. "Democrat," "Republican," and "Independent" are separate attitude objects, and individuals can have a mix of reactions to the parties (e.g. positive toward both, neutral or negative toward both, etc., as well a positive/negative orientation implicitly assumed by the conventional coding)(Wattenberg 1996; Weisberg 1980).

The results in Table 3 show that assuming linear effects across a party "dimension" that runs from strong Democrat to strong Republican is not just incorrect, it is deceptive. For the years 1980, 1984, 1986, and 1990, the estimated effect of partisan strength on uncertainty is almost completely driven by Republicanism. 1986 is particularly striking: both strength and direction of partisanship are strongly related to certainty in approval, yet the true effect, when separated by party, is completely one of Republican identification. Therefore, partisanship, at least as it functions as a guide to attitude formation in this context, does not operate in a unidimensional fashion. Instead, as Fiorina suggested 15 years ago, there is an interaction between the party loyalty, attitude formation, and the political context. And for presidential approval, the obviously central feature of the context is the nature of presidential leadership.

Conclusion

This paper confirms long held notions about the role of partisanship. The decades long debate over partisanship turned in part on the centrality of partisan identification to an individual's belief system. In this paper, I address the implications of partisan centrality for mass opinion about other political objects. Holding all else that we know about a group of individuals constant, how do strong and weak partisans differ? At least as a group, strong partisans are more certain in their opinions about presidential performance. At the same time, partisanship as an issue position functions much as we might expect other issue positions to function (and as economic evaluations function in this model). Partisan *agreement*, along with a positive evaluation of the economy, are also associated with less variant opinions. I started this paper by speculating on the causes of volatility in presidential approval, and end it with a comfortable finding: strong partisans and policy bedfellows lend stability to presidential approval.

The models and results presented here dovetail nicely with some scholarly claims about partisan change during this period, and demonstrate that modeling variance is more than just a methodological exercise that tightens regression estimates. It can provide us with new insights into the process of opinion formation and change.

This paper does not speak to the impact of declining partisan affiliations on presidential approval. However, they provide important circumstantial evidence that a public which has a relatively higher proportion of weak partisan identifiers will be more volatile. In every year but one, the stronger your attachment, the more precise my statistical forecast of approval. The opposite is also true – the weaker your affiliation, the less confident I am in any forecast. Generalized over time, this implies that presidents will have a reduced ability to predict approval for any particular subgroup, and thus be less able to expect popular support for their policies from groups, as the population becomes less partisan. One might also speculate that the relationship between attitudes and stability help politicians choose a course of action during periods of rapid partisan change. Aldrich (1995, see also Aldrich and Niemi (199x)) has described realignment as a period of "dis-equilibrium," implying increased uncertainty among political leaders. However, my results show ways that politicians may benefit during periods of partisan flux. As the proportion of strong identifiers increases, politicians not only can predict changes in support, but can be more confident in their predictions, both for supporters and the opposition.

The implications of these findings for the study of presidential approval, however, might not be so comforting. The last forty years have seen dramatic shifts in the distribution of partisan loyalties in the United States. Over the same time period, presidential approval has become more volatile (Brehm and Gronke 1996). The confluence of these two trends may not be coincidental. If the long–term, stable components of presidential approval, such as party affiliation and ideological beliefs, have declined in the postwar era, the short term forces will drive approval, resulting in a more volatile public opinion. The consequences for presidential governance may be severe, as a president who enjoys a groundswell of support after initial election or a positive series of events, is unable to capitalize on that support because the public is so divided, and then watches that support just as rapidly ebb away.

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Appendix: Diagnosing Heteroskedasticity

For readers who are unfamiliar with tests for heteroskedasticity, I will briefly outline the most common diagnostics. Familiarity with these should make the analysis in this paper easier to follow. Tests for heteroskedasticity are readily available in the regression procedures for all popular statistical packages. I elaborate on only two here, because they appear in the tables. A standard technique is to save the residuals from the regression and regress these against the predicted values, $ee' = d(\hat{Y})$. No particular form is imposed on d, though the most popular variants are heteroskedasticity with regards to the standard deviation, variance, and exponent ("multiplicative heteroskedasticity"). The mean regression sum of squares is distributed as χ^2 with one degree of freedom, where H_0 posits no relationship. A rejection of the null in this situation points to the benefits of robust standard errors, but does not provide any guidance if a model of the variance is desired.

A more robust and flexible test is Breusch-Pagan. Here, in conventional form, the squared residuals are regressed against all of the independent variables, assuming for the moment that any one could be the cause of heteroskedasticity. From Judge et al. (1985), p. 446, the LaGrange multiplier statistic for the null, $\alpha^* = 0$ (where α is as defined above), is given by:

$$\eta = \frac{q'Z(Z'Z)^{-1}Z'q}{2\hat{\sigma}^4} \tag{5}$$

The denominator for this calculation is obtained by squaring the standard error of the regression from the first stage equation, and the numerator can be estimated by the regression sum of squares from the regression $ee' = (X\beta)$. Judge et al. (1985) also show that an even simpler estimate is the squared coefficient of determination (R^2) from the regression $ee' = (X\beta)$. The reason to apply either of these estimators is that they allow the analyst to test sub-hypotheses about heteroskedasticity. For example, if one supposes that there is a subset of variables, Z^* that are causing heteroskedasticity, then three η's can be calculated, one for the full set of Z (to generally diagnose heteroskedasticity), one for the subset Z^* (to identify Z^* as the cause), and one for the remaining exogenous variables Z'. If η^* is significant and η' is not, this gives at least some verification to the hypothesized causes of heteroskedasticity.

Table A1: Basic Presidential Approval Regression

	1980		1986	
Variable	b	(se)	b	(se)
Party ID	**.3503**	(.0327)	**.3970**	(.0256)
Strength of PID	.0497	(.0323)	-.0006	(.0252)
State of Economy	**-.1792**	(.0421)	**-.1827**	(.0215)
Political Interest	**-.0308**	(.0108)	**-.0323**	(.0086)
Distance (defense)	-.0055	(.0093)	**-.0516**	(.0061)
Distance (gov't aid)	**-.0191**	(.0082)		
Distance (gov't services)			**-.0253**	(.0067)
Race(Black)	**.1378**	(.0394)	**.1538**	(.0259)
Sex (Female)	**.0561**	(.0206)	-.0256	(.0164)
Region (South)	.0114	(.0222)	**.0719**	(.0172)
Income	**-.0254**	(.0095)	.0070	(.0077)
Constant	.8181	(.0643)	.7601	(.0487)
R^2	.2466		.3624	
SE	.2990		.3083	
N of cases	889		1545	
Heteroskedasticity Tests				
ee' on $\hat{Y}$	$\chi^2 = 38.4(1)$		$32.065(1)$	
ee' on $\hat{Y}^2$	$\chi^2 = 23.5(1)$		$48.808(1)$	
ee' on $ln(\hat{Y}^2)$	$\chi^2 = 44.0(1)$		$9.834(1)$	
Breusch-Pagan	$\chi^2 = 50.7(9)$		$56.830(9)$	
Glejser	$\chi^2 = 52.4(9)$		$113.789(9)$	

Source: 1980 and 1980 NES
Coefficients in bold are significant at the .05 level (or better). Test statistics were obtained from Shazam's DIAGNOS / HET procedure and calculated by the author.

An example of heteroskedasticity diagnostics for an OLS regression, drawn from this research, is provided in Table A1. Heteroskedasticity is quite evident in these regressions. I report two sets of diagnostic statistics here. First, in the table, I report the standard indicators for heteroskedasticity. The first three statistics regress the squared residuals (ee') on the linear, squared, and exponentiated predicted values. Using the terminology of Greene (1993), these "tests based on regressions" correspond to heteroskedasticity with respect to the standard deviation, variance, and exponent of the predicted values.[11] In each case, the null hypothesis of homoskedasticity, no relationship between the squared residuals and the predicted values, is rejected with a high level of confidence. The next two diagnostics, Breusch-Pagan and Glejser, test for a zero slope between the error variance and each regressor (hence the larger degrees of freedom). Again, each rejected the null hypothesis of homoskedasticity.

[11] Judge, Griffiths, Hill, Lütkepohl, and Lee 1985 refers to them as variance of y_t as a linear function of exogenous variables, variance of y_t proportional to a power of its expectation, and log of the variance of y_t a linear function of exogenous variables – multiplicative heteroskedasticity (Judge, Griffiths, Hill, Lütkepohl, and Lee 1985 Ch. 11).