EXAMINING VARIANCE IN PRESIDENTIAL APPROVAL

THE CASE OF FDR IN WORLD WAR II

DOUGLAS L. KRINER

Abstract Despite the substantive growth and increasing methodological sophistication of the presidential approval literature over the last four decades, almost all analyses continue to focus exclusively on the mean of the approval distribution-the percentage of Americans who approve of the president at a given moment. However, changes in the variance of popular support for the president may be as politically and substantively important as shifts in the mean. To illustrate how a focus on variance can enrich our understanding of changes in the president's public standing, this analysis examines the effects of the economy and World War II on the variance in popular support for Franklin D. Roosevelt. At the aggregate level, the study shows that high peacetime unemployment and mounting casualties increased the volatility of FDR's standing among federal relief recipients, erstwhile his most consistent base of support. At the individual level, the analysis demonstrates that individuals with conflicting partisan, economic, and warrelated considerations for evaluating the president were more variable in their approval of Roosevelt than were other respondents. Exporting a similar focus on variance to other lines of research across the public opinion subfield could produce a richer understanding of the complex processes driving opinion change over time.

Introduction

Since the development of modern polling techniques in the mid-twentieth century, few time series have attracted as much public and scholarly attention as Gallup measures of popular support for the president. Scores of analyses have documented the influence of a host of factors, from the economy or perceptions of

DOUGLAS L. KRINER is a doctoral candidate in the Department of Government, Harvard University. The author would like to thank Matt Baum, Barry Burden, Dan Carpenter, William Howell, Kosuke Imai, Gary King, Liam Schwartz, Jasjeet Sekhon, the members of the Harvard American Politics Research Workshop, and several anonymous reviewers for their most valuable comments and suggestions. All remaining errors are the author's own. Address correspondence to the author; e-mail: kriner@fas.harvard.edu.

doi:10.1093/poq/nfj001

[©] The Author 2006. Published by Oxford University Press on behalf of the American Association for Public Opinion Research. All rights reserved. For permissions, please e-mail: journals.permissions@oxfordjournals.org.

it (Clarke and Stewart 1994; MacKuen, Erikson, and Stimson 1992; Monroe 1978) to major national and world events (Brace and Hinckley 1991; Edwards and Swenson 1997) to American combat casualties (Gartner and Segura 1998; Mueller 1973), on popular evaluations of the president's job performance. Moreover, while linear regression remains the most popular lens into the dynamics governing presidential support, scholars have recently brought an increasingly sophisticated array of methodological tools to bear on the approval series (e.g., Beck 1991; Burden and Mughan 2003; Lebo 2000; Wood 2000; and see Gronke and Newman 2003 for a review).

Despite the field's maturity, most analyses nevertheless continue to focus exclusively on the mean of the approval distribution—the percentage of Americans who approve of the president at a given time. Only recently have scholars begun to explore the factors underlying the variance in presidential approval, both at the aggregate (Gronke and Brehm 2002) and individual response level (Gronke 1999). With a few notable exceptions (Alvarez and Brehm 1995, 1997, 2002), this lack of attention to variance pervades much of the public opinion literature (Braumoeller 2003).

Yet, for policymakers and academics alike, changes in variance can be as substantively important as changes in the mean. Take, for example, measures of popular support for withdrawing American forces from Iraq. Pundits routinely report and analyze the percentage of Americans who support withdrawal in the latest surveys, but the variance across polls is as politically important as the mean value reported in any given survey. A high estimate of aggregate support for withdrawal with low variance could spell political trouble for the George W. Bush administration as stable support among the general public for withdrawal could bring considerable public and political pressure to bear on the White House to change course and begin de-escalating the American military commitment in the Middle East. However, a high estimate of mean support for withdrawal with high variance presents fewer political difficulties for those committed to staying the course in Iraq. A large variance estimate suggests that public opinion is volatile and susceptible to dramatic sudden changes, even absent major new developments on the ground. This suggests that the next poll could show considerably fewer Americans supporting withdrawal, which in turn would seriously undercut the political position of the administration's opponents.

To illustrate further how a focus on variance can shed new insights into the dynamics that drive changes in public opinion, this analysis presents two case studies investigating the effect of the economy and World War II on the variance in popular support for Franklin D. Roosevelt. Beginning with a reanalysis of Baum and Kernell's (2001) study of Roosevelt's popular support disaggregated by economic class, the first case study explores the effect of the economy and World War II on both the mean and variance of FDR's support among the poor. Through a multiplicative heteroscedastic linear regression, the study will show that peacetime unemployment, the onset of war, and rising

American casualties greatly increased the volatility of indigent support for Roosevelt. Moreover, the revised model yields new estimates of the original explanatory variables' effects on mean approval that show relief respondents, like other socioeconomic groups, adjusted their approval of FDR in response to changes in unemployment and presidential public appeals.

The second case study shifts the analysis to the individual level to investigate the microfoundations underlying increased variance among many of FDR's most ardent supporters during wartime. Heteroscedastic probit models suggest that individuals with conflicting partisan, economic, and war-related considerations for evaluating the president had greater ambiguity underlying their approval choice and hence were more variable in their support of Roosevelt than were other respondents.

Why Study the Variance of Presidential Approval?

Mean presidential approval—the percentage of Americans who approve of the president at a given time—is one of the most anxiously watched quantities in politics. For fellow Washingtonians, a president's approval rating is a critical benchmark of his political capital (Kernell 1997; Neustadt 1990). Yet, information about the stability of the president's popular support and its potential volatility also critically affects the strategic calculus of other political actors with whom the president must interact.

For example, a president with a stable 60 percent approval rating is a formidable political adversary. Low variance around the approval mean suggests a consistent base of popular support that the president can leverage against other political actors; absent an exogenous shock, repeated queries should yield similar percentages approving within the bounds of sampling error. In contrast, when the general public is less confident of its assessment and more likely to change its evaluation at a whim, the variance around the president's mean approval rating is high. While his average approval might be 60 percent, different polls may show widely varying results. Political adversaries may be able to seize upon unfavorable polls both to rally their base and cast doubt on the strength of a president's well of support among the public.

President Bill Clinton's political resilience throughout the Monica Lewinsky scandal further illustrates how the variance in presidential approval can be just as important as its mean level. Throughout the impeachment process, Clinton's average approval rating hovered in the low sixties. But perhaps even more surprising than this mean level of support was the tremendous stability in his polling numbers over time (Miller 1999; Sonner and Wilcox 1999). If there had been higher variance in public support for the president—for example, if repeated measures of approval ranged between 50 percent and 70 percent instead of being tightly clustered around a mean value of 60 percent—individual lower ratings may have generated opportunities for Clinton's partisan adversaries

to go on the offensive and build political momentum in support of impeachment. However, because President Clinton enjoyed a stable level of strong public support for his job performance, he succeeded in reprising Ronald Reagan's role as the "Teflon president" and remained a formidable political force, even in an era of divided government, until his last day in office.

Analysis of variance at the individual level also affords politically significant insights into the degree of certainty with which respondents approve or disapprove of the president. Individual-level variance does not necessarily translate into greater volatility in approval at the aggregate level. For example, if all respondents are so uncertain about their evaluations of a president's job performance that they essentially flip a coin every time they are surveyed, individual variance will be high and yet the average number of people who approve of the president from survey to survey should hover around 50 percent. In a less severe case, if a core of interested political observers has relatively stable political opinions while the rest of the country does not, the aggregate trend will reflect the stable views of the politically informed as the random noise from uninformed and highly variable respondents cancels out (Erikson, MacKuen and Stimson 2002; Page and Shapiro 1992; Stimson 1990). However, response variability among at least some segment of the public is a necessary, if not sufficient, condition for higher variance at the aggregate level.

Substantively, models of individual-level variance yield important insights into the factors that render individuals' responses to the approval question more or less stable over repeated queries. For example, the president's core partisan supporters should have lower variance, ceteris paribus, as they are more certain of their support for a president of their own party. However, if poor economic conditions or controversial new policy initiatives provide alternative bases to party loyalty on which individuals base their approval choices, the variance underlying their responses should increase, causing their support to become less predictable than in the past. Presidents must be wary lest their actions inject greater uncertainty or ambivalence into the minds of voters, particularly their supporters and independents crucial to their electoral prospects.

A focus on the sources of individual-level variance provides a new perspective on why White House strategists are constantly trying to keep an administration "on message," while opposition leaders attempt to introduce new issues to the political agenda. These actions may be crafted to increase or decrease the variance of popular support for the president as much as they are designed to effect immediate changes in the mean. For the White House, high variance translates into uncertainty about the president's true well of popular support at a given moment. This greater uncertainty over the president's level of support among the public can diminish the political leverage he can bring to bear on other political actors. By crafting a message of reinforcing policy proposals and accomplishments, presidential strategists attempt to minimize the number of potentially conflicting considerations on which the public might draw when evaluating the president's job performance, thereby decreasing the variance in their approval choices and increasing the stability of the president's level of political support.

In contrast, the opposition party has strong incentives to bring new issues to the fore that might introduce competing policy considerations on which the public will evaluate the president's job performance. For example, if the economy is strong, the opposition may try to refocus the tenor of national debate onto rising health care costs or foreign policy concerns—in short, to other issues on which popular judgments of the president may conflict with support for his handling of the economy. Such a strategy may help erode the mean level of support for the president directly, but its greatest impact may be through increasing the variance of individuals' evaluations of the president, thus rendering less certain estimates of popular support.

Methods of Modeling Variance at the Aggregate and Individual Levels

Although scholarly concern with response instability reaches back at least as far as Converse (1964), statistical analysis of variance in public opinion data is a relatively recent phenomenon. Franklin (1991) demonstrated a direct link between campaign tactics and the certainty of voter perceptions of a candidate's positions, while Alvarez and Brehm (1995, 1997) employed heteroscedastic probit models to explore volatility in individuals' response attitudes to survey questions on issues from affirmative action to abortion. Gronke and Brehm (2002) exported this methodological focus on variance to the study of aggregate presidential approval by using a heteroscedastic linear regression. Whereas Gronke and Brehm employ a modified first-order autoregressive conditional heteroscedastic model (ARCH-MH) that includes both substantive explanatory variables and an autoregressive term, in the current context Lagrange multiplier tests showed no evidence of serial correlation in the error term (Harvey 1990).¹ As a result, this study employs the simpler multiplicative heteroscedastic model that excludes autoregressive effects and focuses solely on the impact of substantive variables (Z_t) on the variance (Davidian and Carroll 1987; King 1998):²

Approval: N ~
$$(\mu, \sigma^2)$$

^{1.} For the relief respondent series, the test yields a χ^2 (1 *df*) of 1.96 and a resulting *p*-value of .16. 2. As a robustness check, model 3 of table 1 was re-estimated with an ARCH term. While STATA had difficulty converging with some variance specifications, replications of model 3 show identical positive effects for unemployment and wartime casualties on variance, even after controlling for the autoregressive error term.

$$\sigma_t^2 = \exp(\alpha_0 + Z_t \gamma)$$

Following Alvarez and Brehm (1995, 1997, 2002) and Gronke (1999), the analysis also uses heteroscedastic probit models to explore variance and response instability at the individual level. The traditional probit model has a simple systematic component, π , which is the normal distribution's cumulative density function (Φ) of a linear combination of chosen independent variables (X β) divided by an assumed homoscedastic unitary variance. Under these conditions, the expected value of the distribution is simply π :

$$E(Y) = \pi = \Phi(X\beta)$$

To model for heteroscedasticity, the constant unitary variance is replaced by the multiplicative heteroscedastic specification used in the linear regression model above. The revised probit model becomes:

$$E(Y) = \pi^* = \Phi(X\beta / \exp(\alpha_0 + Z_t\gamma))$$

The Indigent and FDR: A Reanalysis

Since the pioneering work of John Mueller (1970, 1973), the relationship between war and public opinion, particularly in the Korean and Vietnam eras, has been of paramount importance to studies of presidential approval. Although scholars have examined various responses to these conflicts and subtleties in popular reactions over time (Page and Shapiro 1988), the dominant finding is that support for the president gradually waned as American combat casualties mounted (Mueller 1973; Schwarz 1994; Wittkopf 1990; but see Burk 1999; Larson 1996). Substantial evidence for this basic trend exists at both the national level using aggregate Gallup polling data (Gartner and Segura 1998; Hibbs, Rivers, and Vasilatos 1982; Kernell 1978, Ragsdale 1987) and at the local level using individual data (Gartner and Segura 2000; Gartner, Segura, and Wilkening 1997). Indeed, the generalization from this and similar data that the public, who ultimately bears the human costs of war, will temper militaristic government policies is the conceptual heart of many democratic peace theories (Morgan and Campbell 1991; Ray 1995; Russett 1990).

World War II, however, appears to buck this trend, as support for the war and Roosevelt remained high, even in the wake of American casualty rates unparalleled in all subsequent military actions. Because most analyses begin in the post–World War II era (though see Berinsky 2004a; Larson 1996),

scholars have missed an important opportunity to study the full range of dynamics relating war and public opinion.

An important exception is Baum and Kernell's (2001) analysis of FDR's mean Gallup approval ratings disaggregated by economic class, which shows how Pearl Harbor and America's subsequent war effort united the country and bridged class disparities in popular evaluations of the president. While this research is an important contribution as one of the first studies to examine systematically how World War II affected American public opinion, it sheds little light on the forces driving the opinion of the poorest 10 percent of Americans surveyed, those receiving federal relief.

Baum and Kernell found that for high-, middle-, and low-income respondents, unemployment had a strong negative impact on approval; peacetime radio addresses resulted in a modest boost in public standing; and, while Roosevelt enjoyed a rally effect at the outset of the war, this rally dissipated over time. Yet, for those on federal relief the models showed no evidence that any of the substantive variables had a statistically discernible impact on approval choice. Baum and Kernell explain this null result by suggesting that the poor were "locked-in" to supporting Roosevelt, while nonrelief groups were more directly affected by economic changes and more responsive to external events. However, a simple time plot of the four approval series shown in figure 1 suggests that although relief respondents gave Roosevelt a significantly higher



Figure 1. Kalman smoothed Gallup approval ratings of Franklin Roosevelt, 1937–1943. Data provided by Matthew Baum and Samuel Kernell.

base level of support, the peacetime fluctuations in the series seem to track those of the other groups rather well. This suggests that some common factors might be driving responses for all four socioeconomic groups.

A second curiosity is relief respondents' reaction to U.S. involvement in World War II. No longer did the poor consistently support Roosevelt at a significantly higher rate than any other group; in fact, for several months FDR's standing among the indigent was lower than it was with medium- and low-income Americans.³ Nevertheless, none of the statistical measures shows any systematic impact of the war on relief recipients' approval. To seek new insights into the full impact of the economy and the tides of war on relief opinion, this study investigates the influence of these factors on the variance, as well as the mean, of presidential approval.

The model for the mean employed here is exactly the same as that used by Baum and Kernell (2001). It is a linear function of peacetime unemployment, whether or not there was a peacetime radio address that month, the number of nations involved in World War II, the difference in logged casualties over the preceding two months, the difference in logged casualties multiplied by the number of months since Pearl Harbor, and lagged approval:

Mean Approval = $\alpha + \beta_1$ Approval_{t-1} + β_2 Peacetime unemployment + β_3 Peacetime radio address + β_4 Nations at war + $\beta_5 \Delta \ln\{U.S. \text{ casualties}\}_{t-1} + \beta_6[\Delta \ln \{U.S. \text{ casualties}\}$ × Months of war]_{t-1}

The variance model then tests for the effects of unemployment, World War II, and presidential radio addresses on the variance in relief approval:

Variance = $\exp(\alpha_0 + \beta_1 \text{Unemployment} + \beta_2 \text{War} + \beta_3 \text{Radio addresses})$

While the theoretical expectations for the components of the mean model are straightforward, exactly how war, unemployment, and presidential addresses might impact variance merits elaboration.⁴ First, high unemployment should

^{3.} This reversal is due primarily to other socioeconomic groups greatly increasing their level of support for Roosevelt, and not from any downward trend in relief support. However, the subsequent analyses will suggest that higher wartime variance in relief support may also have contributed by increasing the volatility of indigent approval.

^{4.} First, a caveat: the error variance in a heteroscedastic linear regression yields insights into the volatility of the presidential approval series or how "labile and changeable" public opinion is at a given time (Gronke and Brehm 2002, p. 426). To explain how various factors contributed to these fluctuations in volatility, the argument shifts to the individual level and hypothesizes how changes in these variables might make relief recipients more or less confident and steadfast in their evaluation of Roosevelt. Such ecological inferences about the motivations behind individual behavior drawn from aggregate observations are tenuous at best. To improve our confidence that the hypothesized

increase the variance of relief recipients' approval of FDR. The indigent gave Roosevelt an extraordinary base level of support, which reflected both the New Deal's vigorous pursuit of economic reform and Roosevelt's unique position as the initiator of the federal assistance on which they depended. However, continued economic troubles could have weakened the strength of conviction with which the poor approved of FDR and his policies. When evaluating Roosevelt's job performance in light of continued economic troubles, the poor had to balance their faith in the president's commitment to economic recovery with tangible signs of persistent economic hardships. The presence of these conflicting frames of analysis should render their approval of Roosevelt less stable, even if high unemployment results in no direct change in the average level of their support.

The war, likewise, provided an alternative basis on which to judge the president, one that has the potential to kindle conflicting emotions and varying evaluations of the government's performance. For many relief respondents who were troubled by the war or America's war progress, this frame conflicted with their strong predispositions to support the president. Because of this potential for internal conflict, we should expect the indigent's evaluation of the commander in chief to be more volatile in war than in peacetime.

Finally, by giving a national address on a policy issue, presidents prime the public with a new frame according to which they might be evaluated (Druckman and Holmes 2004; Miller and Krosnick 1996). If a president only tends to make public appeals for already popular issues (Canes-Wrone 2001), the variance in his support should remain unchanged or perhaps even decrease after the address. However, Roosevelt used his peacetime radio addresses in the period examined, 1937–41, to champion a number of controversial issues such as court packing and increased aid to Britain—policies that raised eyebrows even among his core partisan supporters. Thus, by injecting new, controversial considerations on which supporters might evaluate him, FDR's radio addresses should lead to greater ambivalence in his core supporters' perceptions of his actions and greater variance in their evaluation of his job performance.

Results and Discussion

The results of the mean and variance analyses are reported in table 1.⁵ Column 1 replicates Baum and Kernell's (2001) original homoscedastic analysis. Under

microfoundations underlying these relationships between the war, the economy, and approval volatility are indeed correct, analysis at the individual level is required. It is to this task that the study later turns with the analysis of individual-level data from two Gallup surveys conducted in 1941 and 1942.

^{5.} The dependent variable for all models reported in table 1 is the Kalman filtered and smoothed data used by Baum and Kernell (2001). While Kalman filtering is particularly appropriate for the rather choppy Roosevelt approval series, all models were re-estimated using unfiltered and unsmoothed data as a robustness check. Both the size and significance levels were virtually identical for all specifications.

	Baum/Kernell Model	Variance Model 1	Variance Model 2	Variance Model 3
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Independent				
Variables				
Lagged Approval	378***	170***	175***	/31***
Lagged Approva	(105)	(074)	(076)	(081)
Descetime	(.105)	(.074)	(.070)	(.001) 286***
Unemployment	200	(126)	(138)	(136)
Descetime Padio	(.1)7)	(.120)	(.130)	(.130)
Addresses	.030	(304)	(334)	(.428)
Nations at War	(.551)	(.304)	(.334)	(.428)
Inations at wai	080	163	144	181
A Log Coquelties	(.194)	(.149)	(.137)	(.130)
	.229	.242	.114	(100)
	(.101)	(.131)	(.100)	(.109)
Δ Log Casualties ×	000	049	064***	063***
Months of war	(.053)	(.049)	.032)	(.032)
Constant	52.428***	43.161***	45.893***	46.098***
17 .	(9.678)	(6.4/5)	(6.596)	(7.013)
Variance	0.01***	1 1 7 7 *	7.61	0.41
Constant	2.21***	-1.15/*	761	841
	(.226)	(.647)	(.611)	(.614)
Peacetime	—	.221***	.193***	.159***
Unemployment		(.043)	(.041)	(.042)
War (1,0)	_	3.390***	—	_
		(.761)		
Logged Casualties	—	_	.426***	.438***
			(.103)	(.103)
Peacetime				.574**
Radio Address				(.282)
Ν	58	58	58	58
VWLS R^2	.24	.46	.42	.43
Log-Likelihood	-146.477	-140.117	-140.192	-138.844

 Table I.
 Presidential Approval among Relief Recipients

NOTE.—All significance tests are two-tailed; all models report robust standard errors (SE) and variance-weighted least squares R^2 values.

* *p* < .10. ** *p* < .05.

*** $^{F} p < .01.$

this specification, only the constant and lagged approval terms reach any conventional level of statistical significance. The first variance model adds peacetime unemployment and a dummy variable for all observations after Pearl

Harbor into the variance equation. Likelihood ratio tests confirm that we can reject the restricted homoscedastic model with 99 percent confidence.

The link between high unemployment and approval volatility is unambiguous: poor economic conditions significantly raised the variance in relief approval. Although the indigent were predisposed to support Roosevelt, the guarantor of the welfare state, rising unemployment seems to have caused more uncertainty or ambiguity surrounding their evaluation of his job performance.

Perhaps more interestingly, while the World War II variables seem to have had little systematic effect on approval's mean value, the war had a strong, positive impact on the variance of relief recipients' approval. Although the indigents' support for FDR remained high throughout the conflict, the model suggests that the fierce, sustained struggle weakened the strength of their conviction concerning Roosevelt's job performance and made the president's standing among the poor more volatile and susceptible to sudden change.⁶

The second variance function model reported in column 3 of table 1 replaces the crude World War II dummy variable with the logged number of combat casualties in the month preceding each poll. Here again, the war had a significant positive effect on variance, while the size and significance levels of the coefficient for unemployment remained virtually unchanged.

Finally, the third variance model adds the peacetime radio address variable to the mix. The strong positive coefficient suggests that when FDR took the microphone for a radio address in peacetime, the variance of relief recipients' approval also increased. This finding reminds us that despite the extensive literature on presidential exploitation of "going public" techniques (Barrett 2004; Mouw and MacKuen 1992; Peterson 1990; Tulis 1987), even the president's staunchest supporters can have a diverse set of reactions to presidential speeches, particularly when they deal with controversial policy proposals such as Roosevelt's court-packing plan and programs to expand aid to Britain. Because these new policy proposals can establish conflicting considerations in supporters' minds, speeches can introduce more volatility into some groups' approval of the president.

First, differences provide insight into the magnitude of each effect on the error variance. For example, raising unemployment from 5 percent to 15 percent in peacetime would increase the standard deviation of the approval distribution by 1.43 percentage points. A presidential radio address would increase it by a half point. In wartime, raising the number of combat casualties from 100 to 1,000 would elevate the distribution's standard deviation by 1.23 percentage points.⁷

7. Standard deviations (obtained from simulations in GAUSS) are .45, .35 and .44, respectively.

^{6.} These results echo the suggestive finding of Gronke and Brehm (2002, p. 438) that throughout the postwar era enemy-initiated foreign conflicts generally have a positive (albeit in their model statistically insignificant) impact on the variance of aggregate approval.



Figure 2. Kernel density of simulated approval ratings for FDR among the indigent. Solid line = 100 casualties; dashed line = 2,000 casualties.

Illustrating the war's effect on variance graphically, figure 2 shows the kernel density plots of 900 simulations of FDR's approval among the indigent. The solid curve represents simulations estimating the model with 100 casualties and the dashed curve with 2,000 casualties, with the other explanatory variables held constant at their means.⁸ Each curve is essentially the distribution of answers we might expect if we asked the approval question of 900 different groups in identical political and economic environments. Each trial reports the percentage of respondents who approved of FDR, and the graph shows the frequency with which we observed each percentage across the 900 simulations.

While increasing casualties had no effect on the distribution means, it greatly influenced the spread of the two approval distributions. The solid curve representing low casualties is tightly clustered around its mean, while the high-casualty dashed curve is more spread out about its mean value. The 100 casualties distribution suggests that repeated polls are unlikely to show

8. The mean for monthly casualties during this period was 1,055 with a standard deviation of almost 2,000.

FDR's approval dropping below the low seventies. In contrast, the 2,000 casualties distribution suggests that observing a rating in the mid-sixties from a particular survey is certainly not out of the question. Of course, repeated polls could also return an estimate in the low eighties, greatly overstating support for the president. Thus, while increasing the number of casualties has little effect on mean approval, it does have a significant impact on the range of outcomes we might expect to observe if we asked the survey repeatedly, even absent any change in the other independent variables.

Modeling for systematic changes in the variance also yields new estimates of the original explanatory variables' impact on the mean of presidential approval. Consistent with the similarities in the peacetime approval trends across income groups in figure 1, all three heteroscedastic regressions suggest that the indigent responded to changes in unemployment and presidential radio addresses in the same manner as their wealthier compatriots.

Similarly, in the second and third variance models the negative coefficient on the war weariness variable (the logged change in monthly casualties multiplied by the duration of the conflict) reaches statistical significance, at the .05 and .10 levels, respectively. Casualties and the conflict's duration may have had some impact on relief recipients' mean approval, though not to the degree that it did with the other socioeconomic groups in Baum and Kernell's (2001) original study.⁹ Instead, the primary mechanism through which the war shaped relief recipients' approval was by dramatically increasing the variance. This helps explain why the poor's opinion of FDR remained high throughout the war but still varied considerably and at times fell below the level of support provided by medium- and low-income Americans for the only time in the series.¹⁰

Individual-Level Analysis

The aggregate-level analysis above strongly suggests that American involvement in World War II, specifically periods of high casualties, increased the volatility

^{9.} For comparison, the coefficients of the variable for high-, medium-, and low-income respondents were .12, .15, and .13, respectively. The .06 coefficient for relief recipients in variance model 2 shows that even when the war weariness variable reached its maximum value, it resulted in only an approximate 1.5-point drop in mean approval.

^{10.} The dramatic changes in the mean coefficients for the model of relief recipients' approval after adding a variance function raised the possibility that similar changes might occur in the high-, middle-, and low-income series if subjected to the same analysis. Re-estimating all three series with variance functions produced little change in any of the models for the mean. In several of the variance equations, one of the variables reached statistical significance, but all such findings were highly sensitive to specification. While this absence of similar findings for the factors driving variance in the other series may at first seem surprising, it is less so when we consider the unusually high *R*² values of Baum and Kernell's models for these series, .98, .97, and .94, respectively (compared to .24 for the homoscedastic relief model). The residuals between the predicted and observed values of approval were so small that there was virtually no variance to explain.

in Franklin Roosevelt's standing among the poorest 10 percent of Americans. Similarly, high unemployment also appears to have induced instability among Roosevelt's most consistently ardent supporters. The previous section suggested microfoundations emphasizing the importance of conflicting considerations that could have driven these fluctuations in aggregate volatility. This section tests these hypotheses more explicitly using individual-level data from two Gallup surveys, one before and one after the attack on Pearl Harbor.

As discussed previously, individual-level variance does not necessarily produce greater approval volatility in the aggregate. Nevertheless, response variability among at least some population subgroup is a necessary, if not sufficient, condition for higher variance at the aggregate level. Thus, this section endeavors to show that Democratic identifiers who disapproved of Roosevelt's conduct of the economy and war held conflicting considerations on which to evaluate the president and consequently had higher response variability than the rest of their copartisans. This greater uncertainty in individual Democrats' evaluation of the president in turn could produce the greater volatility observed at the aggregate level among relief recipients, the most heavily Democratic of the four socioeconomic categories.¹¹

Data and Models

Building on Zaller's (1992; Zaller and Feldman 1992) conception of the survey response as a product of the varied values and considerations churning through a respondent's head at the time the question is asked, Alvarez and Brehm (1995, 2002) have convincingly shown that respondents who draw on highly salient conflicting considerations when answering the question at hand are more ambivalent and, consequently, have higher variance in their responses. Following Alvarez and Brehm and Gronke (1999), this study uses a heteroscedastic probit model to analyze the differences in variance across groups of individuals in their evaluation of Franklin Roosevelt's job performance.

11. Ideally, we would compare the individual-level findings with aggregate-level data broken out by partisanship instead of economic class; however, Gallup did not routinely ask a party identification question throughout the period, and so no such series exist. Given this, the heavily Democratic relief recipient category is one of the best available approximations. For two primary reasons the individual analysis does not limit itself to examining changes in variance among relief recipients. First, the hypothesized causal relationships for why the war and the economy should produce changes in the variance underlying different individuals' evaluations of Roosevelt do not depend on the respondents' class. Rather, they emphasize whether an individual draws on conflicting frames when evaluating the president's job performance. Those who have strong predispositions to support Roosevelt—be they relief recipients or simply partisan Democrats—and yet also hold conflicting economic or policy-specific considerations on which to judge the president should be more variable in their responses. The purpose of this section is to test these micro-level arguments, not to confirm directly the aggregate-level observations about changes in relief recipients' variance at an individual level. Practical considerations also led to the shift, given the relatively small number of relief recipients in each poll.

In his extensive analysis of Gallup data from the period, Adam Berinsky (2004b) identified two methodological problems with Gallup's collection procedures that could bias statistical inferences: the use of population quotas instead of random sampling and the considerable discretion granted to Gallup interviewers to select whom they surveyed within a quota category. Fortunately, Berinsky proposes two correctional procedures to account for these biases. As a robustness check, all models were re-estimated with the appropriate controls, which yielded substantively identical results across specifications.¹²

Like the heteroscedastic linear regression, the heteroscedastic probit model includes both a model of the mean, or choice model, which calculates the direct effect of the explanatory variables on the probability of an individual approving of the president, and a model of the variance, which describes systematic changes in the size of the error term.¹³ The choice models differ across the two polls because of variation in polling content. When possible, they include measures of individuals' partisan orientations, of whether they believed their personal economic fortunes had risen or declined over the previous year, of their support or opposition to America's current conduct of the war, and demographic information.

Theoretical expectations are straightforward. Democrats should be predisposed to support Roosevelt, while Republicans should be the least likely to approve of his job performance. Respondents who approved of America's war effort and who perceived that their personal economic fortunes had improved

13. Unlike the heteroscedastic linear regression case in which only the mean model is needed to determine the predicted level of approval, in heteroscedastic probit models the factors in both the choice model (X β) and variance (Z γ) contribute to the final predicted probability of responding in the affirmative: $E(Y) = \pi = \Phi(X\beta / \exp(Z\gamma))$. Because variables in both the choice and variance equation affect the predicted probability, Achen (2002) warns that coefficients in the variance equation for a variable not also included in the choice model may appear to be driving changes in variance when the explanatory variable actually directly affects the mean. In the models presented in tables 2 and 3, all variables in the variance equation are also included in the choice equation except for the interaction variables, for which there were no theoretical expectations that recommended including them in the choice equation. However, this specification may leave open the possibility that the coefficients for the interaction variables in the variance equation are accidentally capturing non-linearities in the choice function. As a robustness check, all models were reestimated with the interactions included in the choice component; almost all of the relationships in the variance equations remained strongly in the expected direction and statistically significant.

^{12.} To account for systematic sample selection bias, Berinsky proposes controlling for the quota selection variables. Therefore, all models were re-estimated including dummy variables for occupation, socioeconomic status, geographic region, and respondent age. Even with these controls, all mean and variance results remain substantively unchanged. To control for the possibility of interviewer-induced bias, Berinsky offers two suggestions: controlling for the education of the respondent, as this is an important predictor of the type of person interviewers targeted as "desirable" subjects to interview, and including dummy variables for each interviewer to parse out interviewer-specific effects. One of the polls analyzed had a measure of respondent education (USAIPO1942-0263) while the other (USAIPO1941-0238) gave interviewer identification numbers for each respondent. All models were re-estimated including these controls, but the controls were shown to have little or no impact on the substantive results. This is consistent with Berinsky's (2004b) finding that while including the interviewer-specific variables did improve the goodness of fit, it had negligible impact on the substantive variables of interest.

over the previous year should be more likely to support the commander in chief and steward of the national economy, while those who questioned America's war effort and believed they had regressed economically should be less likely to support FDR. Although most studies of the gender gap describe its emergence as a recent phenomenon (Gilens 1988; Kaufmann and Petrocik 1999), even in the 1940s women may have been slightly more likely than men to approve of Roosevelt. Finally, given Roosevelt's hesitant yet significant first steps in civil rights, African-Americans are hypothesized to be more likely to support Roosevelt, ceteris paribus.

Turning to the variance, we expect response variability to be higher for individuals who are torn between competing considerations when evaluating Roosevelt. For example, while all Democrats had a strong partisan predisposition to support Roosevelt, those concerned by economic trends or the conduct of the war possessed conflicting bases on which to evaluate the president. These Democrats should have greater variability in their approval responses than those who approved of the war and felt their economic position was improving.

Results and Discussion

The first poll examined was conducted by the Gallup organization three months after Pearl Harbor in March 1942 (USAIPO1942-0263). This poll included questions on both the war and the economy, allowing us to test the effect of both conditions on response variance. Results are presented in table 2.

The results for the choice model accord with theoretical expectations. Partisanship—measured in this poll by each respondent's preference for which party should hold the majority in Congress—was the single most important determinant of a respondent's approval choice. Democratic supporters were by far the most likely to approve of Roosevelt, followed by those who favored neither party, with those who favored the Republicans being the least likely. African-Americans and women were also more supportive of Roosevelt, all else being equal, than other groups. Furthermore, individuals' perception of their personal economic fortunes had a substantial impact, as respondents who reported that their family incomes had risen in the previous year were significantly more likely to approve of Roosevelt's job performance.

The choice model also included three measures of public attitudes toward the war, all of which suggest a strong relationship between popular reactions to the conflict and respondents' evaluation of the commander in chief. Respondents who believed the United States was doing "all it possibly could to win the war" were more likely to approve of FDR than those who did not. The third of respondents who felt the war would be protracted and last over five years were also significantly less likely to approve of the president. Similarly, .

	Homoscedastic Model	Variance Model 1	Variance Model 2
Independent Variables	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Choice Model			
Democrat	.779***	.862***	.898***
	(.071)	(.090)	(.086)
Republican	575***	451***	491***
	(.068)	(.070)	(.071)
Economy better	.228***	.183***	.222***
5	(.062)	(.061)	(.061)
Economy worse	047	039	016
5	(.079)	(.061)	(.071)
All to win war	.669***	.659***	.641***
	(.110)	(.105)	(.104)
Not all to win war	.050	.079	.051
	(.113)	(.108)	(.103)
War will last 5+ years	233**	170***	173***
-	(.063)	(.057)	(.068)
Keep troops on home front	141**	125***	133***
	(.059)	(.049)	(.054)
Female	.110**	.101**	.108**
	(.056)	(.046)	(.051)
Black	.536***	.427***	.455***
	(.162)	(.150)	(.152)
Constant	.146	.083	.079
	(.122)	(.116)	(.116)
Variance Model	. ,	× ,	
Economy worse	—	334**	423***
-		(.157)	(.165)
Economy worse × Democrat	_	.490**	.568***
-		(.196)	(.193)
Not all to win war	_	441**	
		(.199)	
Not all to win × Democrat	_	.442*	_
		(.231)	
War will last 5+ years	_	_	179
			(.146)
$5+$ years \times Democrat	_	_	.265*
			(.163)
Ν	2,986	2,986	2,986
Log-Likelihood	-1331.2	-1325.0	-1326.3

Fable 2.	Individual-Level Presidential Approval, March 194	42
----------	---	----

NOTE.— All significance tests are two-tailed; all models report robust standard errors (SE). * p < .10. ** p < .05. *** p < .05.

the near third of respondents who believed the government should keep as much of the American armed forces in the United States as needed to assure homeland defense approved of Roosevelt at a lower rate than those who instead favored sending the bulk of the nation's forces to engage the enemy overseas.

Column 2 presents a heteroscedastic probit model with an identical choice component and a variance component designed to explore the interaction of partisanship, the economy, and the war on the variability in responses across individuals. A likelihood ratio test suggests that we can reject the homosce-dastic model with 99 percent confidence.

First examining perceptions of the economy, the choice equation confirms that individuals who responded that their incomes had declined were less likely to support the president than those who believed their incomes had risen, and the negative coefficient in the variance equation suggests that these individuals were also more certain in their lower evaluation. For those respondents without a partisan predisposition to support the president, there was no conflict; if anything, the decline in personal economic fortunes could have reinforced predispositions against Roosevelt, partisan or otherwise, thereby decreasing variance. However, the positive coefficient for the lower income and Democratic interaction variable shows that Democrats whose incomes had declined had higher variance and were less stable in their responses. For these Democrats, the evaluative frame of personal economic difficulties conflicted with their partisan predisposition to approve of their fellow Democrat in the White House. This conflict resulted in higher variance and less predictability in their survey responses.

Turning to the impact of World War II, the third of those surveyed who were unsatisfied with the U.S. war effort and who were consequently less likely to approve of FDR's job performance were also less variable in their response. The exception again is Democrats. Not approving of the administration's conduct of the war decreased variance for Republican and independent identifiers, but for Democrats it had a small positive net effect; more important, compared with other respondents who felt the administration could do more to win the war, Democrats were significantly more variable in their approval choice.¹⁴

As a robustness check, the second variance model in column 3 of table 2 uses a different measure of public unease over World War II, the expected duration of the conflict. Again, this model specification provides strong evidence that the economy and war, mediated through party attachments, greatly influenced the variance of individual responses. The coefficients on the declining income and Democrat-declining income interaction variables are

^{14.} USAIPO1942-0284 asked the same question on whether respondents believed the administration was doing all it could to win the war. Replicating a similar model on this poll also showed that Democrats who thought the United States could be doing more to win the war had higher variance in their responses than non-FDR supporters who held the same views on the war.

virtually identical to those in the first variance model, as are the relationships between the alternative war support measures and approval variance. Republican and undecided respondents who feared a protracted war were less likely to support FDR and more steadfast in their lower opinion of him. However, for Democrats, the fear of a protracted war both slightly decreased their probability of approving of Roosevelt and simultaneously increased the variance and unpredictability of their responses.

The analysis next turns to a second poll conducted before Pearl Harbor in May 1941 (USAIPO1941-0238), the only poll found that asked survey respondents if they had heard a presidential radio address. This affords an opportunity both to test earlier conjectures for why radio addresses might increase the variability of FDR's support among some listeners and to examine how fears of impending U.S. involvement in hostilities in Europe and the Pacific interacted with partisanship to drive changes in variance. Results are summarized in table 3.

To supplement the standard party preference and demographic variables, all of which were in the expected direction, the choice model for the May 1941 poll also included additional measures of public support for prospective American involvement in World War II and a measure of each individual's economic status. Respondents who answered that America's primary foreign policy goal should be to aid Great Britain in its struggle against Nazism were significantly more likely to approve of FDR, the driving force behind Lend-Lease. In contrast, those who replied that America's foremost goal should be staying out of the war were significantly less likely to approve of Roosevelt. Respondents were also asked whether, if put to the people, they would vote for a declaration of war against the Axis powers. As expected, those who answered affirmatively were also significantly more likely to approve of FDR.

Baum and Kernell (2001) showed a substantial class divide before Pearl Harbor in support for Roosevelt, with the president's standing among the wealthy being significantly lower than among the other socioeconomic groups. To account for this at an individual level, the model also includes a variable for whether the individual was coded by the Gallup interviewer as wealthy or above average. The coefficient is sharply negative and highly statistically significant, in accordance with Baum and Kernell's aggregate-level finding.¹⁵

Finally, the choice model included a question asking whether each individual heard all or part of Roosevelt's May 27, 1941, radio address, in which he declared an unlimited national emergency and proclaimed that what had begun as a European war had become a "a world war for world domination." While the speech had no impact in the choice equation, it did have a significant effect on the variance in individuals' responses.

^{15.} Including the income variable in table 2's wartime models has no effect on the findings presented, and the variable itself, as predicted by Baum and Kernell (2001), is substantively and statistically insignificant.

	Homoscedastic Model	Variance Model	
Independent Variables	Coefficient (SE)	Coefficient (SE)	
Choice Model			
Democrat	.855***	1.311***	
	(.069)	(.162)	
Republican	538***	398***	
	(.064)	(.084)	
U.S. should aid Britain	381***	.314***	
	(.133)	(.117)	
U.S. should stay out	456***	298**	
	(131)	(.129)	
Vote to enter war	.331***	.237***	
	(.073)	(.069)	
Heard radio address	.068	.081	
	(.057)	(.064)	
Female	.085	.079*	
Tomato	(.057)	(.048)	
Black	436***	.461***	
Diavi	(177)	(153)	
Wealthy	- 385***	- 295***	
() cultify	(078)	(.076)	
Constant	320**	166	
Constant	(136)	(122)	
Variance Model	(.150)	(.122)	
U.S. should stay out		004	
C.S. Should Stuy Out		(206)	
U.S. should stay out \times		429	
Democrat		(288)	
Heard radio address		- 438***	
ficure fuero address		(145)	
Heard radio address X		580***	
Democrat		(158)	
N	3 127	3 127	
Log-Likelihood	-1429.6	-1420.8	

 Table 3.
 Individual-Level Presidential Approval, May 1941

NOTE.— All significance tests are two-tailed; all models report robust standard errors (SE). * p < .10. ** p < .05. *** p < .05.

The variance equation presents suggestive evidence, even before Pearl Harbor, of an interaction between war opposition and partisanship.¹⁶ Respondents who held isolationist leanings were in general no more variable in their responses than those who supported FDR's goal of aiding Britain. However, the large coefficient for the stay out/Democrat interaction variable, even though it narrowly fails to reach conventional levels of statistical significance, suggests that even before America entered the war, Democrats who opposed American involvement were more internally conflicted in their evaluation of Roosevelt.

The radio address variables and interaction produce a similar pattern. Most respondents did not favor U.S. involvement in World War II, and Roosevelt's address of May 27 only furthered their suspicions that the president was slowly pushing the country to the brink of war. For these respondents, hearing Roosevelt's speech decreased the variance in their responses. However, Democrats again are the exception, as those who heard the radio address actually had greater response variability. By priming the public to consider the war and America's dangerous maneuverings on its periphery, the speech created an alternative basis from which to judge FDR, one that for most Democratic respondents, who opposed U.S. intervention, was in stark contrast to their partisan predispositions. Thus, while the choice model shows the speech did little to build or erode the mean level of public support for the president, the variance equation suggests that the address, and the president's war policies in general, came at the cost of destabilizing support among the White House's core partisan supporters.

Conclusion

Most studies of war and public opinion have described the gradual waning of popular support for the president as casualties mount. Impressionistically, World War II seems an exception to the rule as the country rallied around Roosevelt after Pearl Harbor and remained steadfastly behind him, even as the nation suffered casualty rates that would dwarf those of all subsequent military actions. While the absolute level of support for Roosevelt remained high throughout 1942 and into 1943, this study suggests that the war did take a toll on FDR's public standing by increasing the volatility of his support among core partisan supporters.

The aggregate analysis shows that Roosevelt's standing among those on federal relief, previously his most reliable supporters, was substantially more volatile during the war and in the wake of high casualties. Analyses at the individual level confirm that the war undermined the depth of Roosevelt's support, particularly among some members of his own party, the bedrock of

16. Again, a likelihood ratio test confirms that we can reject the restricted homoscedastic model with 99 percent confidence.

his political base. Democrats who did not approve of the administration's conduct of the war still had a fairly high probability of approving of Roosevelt, but the heteroscedastic probit models suggest their responses were more variable than other Democrats who did not share similar concerns about the war effort. For these partisans, fears concerning the war provided an alternate, conflicting basis on which they might judge Roosevelt, and the result was higher response variance. Thus, even World War II had modest negative consequences for the administration at the helm—it weakened the stability of its support among its partisan base.¹⁷

Expanding this methodological focus on variance to other areas of public opinion research could yield similar new insights into long-studied questions of opinion formation and change. For example, remaining within the context of presidential approval, a variance analysis has the potential to shed new light on the debate over public rallies in the wake of minor uses of force. Although some scholars have questioned whether rallies exist at all (Lian and Oneal 1993), most studies have found that the public does rally around the president after a foreign crisis (Brace and Hinckley 1992; Mueller 1973; Ostrom and Simon 1985). Yet, these rallies have proven remarkably transient, and popular support for the president usually quickly dissipates back to previous levels. A variance perspective offers two explanations for these dynamics. First, the support of those who previously opposed the president may be inherently unstable. In the immediate aftermath of an American military action, even partisan opponents or nonpartisans may rally around the flag and behind the commander in chief (Baum 2002), but this wartime evaluative frame is in conflict with their preexisting bent against the president. This internal conflict creates greater variability underlying their responses, making such support inherently unstable and subject to change. Additionally, building on Brody (1991; Brody and Shapiro 1989), when opposition elites vocally criticize administration policy, they trigger respondents' preexisting reasons for disapproving of the president and exacerbate the internal conflict within those who may have initially rallied behind the White House. By emphasizing alternative frames through which these respondents might disapprove of the president, elite criticism erodes both the level and stability of popular support for the president.

While variance models may not radically change our understanding, gleaned from 30 years of research, of the forces driving changes in aggregate

^{17.} This finding provides a potential explanation for Gallup's puzzling discontinuation of the approval question in 1943. Baum and Kernell (2001, p. 203) speculate that Gallup stopped asking the question, or at least stopped publicly announcing the results, for fear that declining support for Roosevelt would provide a propaganda victory for the Axis; yet, FDR's approval rating was still 72 percent in the last poll taken. (Gallup stopped reporting the latest approval numbers by press release sometime in 1942. The last regularly taken poll was March 26–31, 1943. There does seem to have been another poll taken in December 1943 [66 percent approving], but this was an isolated poll and not included in Baum and Kernell's analysis.) Perhaps the Gallup organization also perceived greater volatility in the popular mood and a wavering of support for the president, even if the rating itself had yet to fall substantially.

approval, they may help identify the factors that influence both the volatility of this ubiquitous measure of a president's political capital and the variability underlying individuals' responses to the Gallup survey question. Similarly, expanding traditional lines of research across the public opinion literature to investigate the factors driving changes in the variance of survey responses could produce a richer understanding of the complex processes driving opinion change over time.

References

- Achen, Christopher. 2002. "Toward a New Political Methodology: Microfoundations and ART." Annual Review of Political Science 5:423–50.
- Alvarez, R. Michael, and John Brehm. 1995. "American Ambivalence Towards Abortion Policy: Development of a Heteroscedastic Probit Model of Competing Values." *American Journal of Political Science* 39:1055–82.
 - ——. 1997. "Are Americans Ambivalent Towards Racial Policies?" American Journal of Political Science 41:345–74.
- ——. 2002. Hard Choices, Easy Answers: Values, Information, and American Public Opinion. Princeton, NJ: Princeton University Press.
- Barrett, Andrew. 2004. "Gone Public: The Impact of Going Public on Presidential Legislative Success." American Politics Research 32:338–70.
- Baum, Matthew. 2002. "The Constituent Foundations of the Rally-Round-the-Flag Phenomenon." *International Studies Quarterly* 46:263–98.
- Baum, Matthew, and Samuel Kernell. 2001. "Economic Class and Popular Support for Franklin Roosevelt in War and Peace." *Public Opinion Quarterly* 65:198–229.
- Beck, Nathaniel. 1991. "Comparing Dynamic Specifications: The Case of Presidential Approval." *Political Analysis* 3:51–88.
- Berinsky, Adam. 2004a. "American Public Opinion and World War II: A Research Agenda and Some Preliminary Findings." Working paper, Massachusetts Institute of Technology.
- ——. 2004b. "American Public Opinion in the 1930s and 1940s: The Analysis of Quota-Controlled Sample Survey Data." Working paper, Massachusetts Institute of Technology.
- Brace, Paul, and Barbara Hinckley. 1991. "The Structure of Presidential Approval." *Journal of Politics* 53:993–1017.
 - -----. 1992. Follow the Leader. New York: Basic Books.
- Braumoeller, Bear. 2003. "Explaining Variance: Rethinking Social Causation." Working Paper, Harvard University.
- Brody, Richard A. 1991. Assessing the President: The Media, Elite Opinion, and Public Support. Stanford, CA: Stanford University Press.
- Brody, Richard, and Catherine Shapiro. 1989. "A Reconsideration of the Rally Phenomenon in Public Opinion." In *Political Behavior Annual*, ed. Samuel Long, pp. 77–102. Boulder, CO: Westview Press.
- Burden, Barry, and Anthony Mughan. 2003. "International Economy and Presidential Approval." Public Opinion Quarterly 67:555–78.
- Burk, James. 1999. "Public Support for Peacekeeping in Lebanon and Somalia: Assessing the Casualties Hypothesis." *Political Science Quarterly* 114:53–78.
- Canes-Wrone, Brandice. 2001. "The President's Legislative Influence from Public Appeals." American Journal of Political Science 45(2):313–19.
- Clarke, Harold, and Marianne Stewart. 1994. "Prospections, Retrospections, and Rationality: The 'Bankers' Model of Presidential Approval Reconsidered." *American Journal of Political Science* 38:1104–23.
- Converse, Philip E. 1964. "The Nature of Belief Systems in Mass Publics." In Ideology and Discontent, ed. David Apter, pp. 206–61. New York: Free Press.
- Davidian, M., and R. J. Carroll. 1987. "Variance Function Estimation." Journal of the American Statistical Association 82:1079–91.

- Druckman, James, and Justin Holmes. 2004. "Does Presidential Rhetoric Matter? Priming and Presidential Approval." *Presidential Studies Quarterly* 34:755–78.
- Edwards, George, and Tami Swensen. 1997. "Who Rallies? The Anatomy of a Rally Event." Journal of Politics 59:200-212.
- Erikson, Robert, Michael MacKuen, and James Stimson. 2002. *The Macro Polity*. New York: Cambridge University Press.
- Franklin, Charles. 1991. "Eschewing Obfuscation? Campaigns and Perceptions of U.S. Senate Incumbents." American Political Science Review 85:1193–214.
- Gartner, Scott Sigmund, and Gary M. Segura. 1998. "War, Casualties, and Public Opinion." Journal of Conflict Resolution 42:278–300.
- Gartner, Scott Sigmund, Gary M. Segura, and Michael Wilkening. 1997. "All Politics Are Local: Local Losses and Individual Attitudes toward the Vietnam War." *Journal of Conflict Resolution* 41:669–94.
- Gilens, Martin. 1988. "Gender and Support for Reagan: A Comprehensive Model of Presidential Approval." *American Journal of Political Science* 32:19–49.
- Gronke, Paul. 1999. "Policies, Prototypes, and Presidential Approval." Paper presented at the annual meeting of the American Political Science Association, Atlanta, GA.
- Gronke, Paul, and John Brehm. 2002. "History, Heterogeneity, and Presidential Approval: A Modified ARCH Approach." *Electoral Studies* 21:425–52.
- Gronke, Paul, and Brian Newman. 2003. "From FDR to Clinton, From Mueller to ?: A Field Essay on Presidential Approval." *Political Research Quarterly* 56:501–12.
- Harvey, Andrew C. 1990. The Econometric Analysis of Time Series. Cambridge, MA: MIT Press.
- Hibbs, Douglas A., Jr., R. Douglas Rivers, and Nicholas Vasilatos. 1982. "The Dynamics of Political Support for American Presidents among Occupational and Partisan Groups." *American Journal of Political Science* 26:312–32.
- Kaufmann, Karen, and John Petrocik. 1999. "The Changing Patterns of American Men: Understanding the Sources of the Gender Gap." American Journal of Political Science 43:864–87.
- Kernell, Samuel. 1978. "Explaining Presidential Popularity. How Ad Hoc Theorizing, Misplaced Emphasis, and Insufficient Care in Measuring One's Variables Refuted Common Sense and Led Conventional Wisdom Down the Path of Anomalies." *American Political Science Review* 72:506–22.
- ——. 1997. Going Public: New Strategies of Presidential Leadership. Washington, DC: CQ Press. King, Gary. 1998. Unifying Political Methodology: The Likelihood Theory of Statistical Infer-
- ence. Ann Arbor: University of Michigan Press.
- Larson, Eric. 1996. Casualties and Consensus: The Historical Role of Casualties in Domestic Support for U.S. Wars and Military Operations. Santa Monica, CA: RAND.
- Lebo, Matthew, ed. 2000. "Advances in the Analysis of Political Time Series." Special volume of *Electoral Studies* 19(1).
- Lian, Bradley, and John R. Oneal. 1993. "Presidents, the Use of Military Force, and Public Opinion." Journal of Conflict Resolution 37:277–300.
- MacKuen, Michael, Robert Erikson, and James Stimson. 1992. "Peasants or Bankers? The American Electorate and the U.S. Economy." *American Political Science Review* 86:596–611.
- Miller, Arthur. 1999. "Sex, Politics, and Public Opinion: What Political Scientists Learned from the Clinton-Lewinsky Scandal." PS: Political Science and Politics 32:721–29.
- Miller, Joanne, and Jon Krosnick. 1996. "News Media Impact on the Ingredients of Presidential Evaluations: A Program of Research on the Priming Hypothesis." In *Political Persuasion and Attitude Change*, ed. Diane Mutz, Paul Sniderman, and Richard Brody, pp. 79–99. Ann Arbor: University of Michigan Press.
- Monroe, Kirsten. 1978. "Economic Influences on Presidential Popularity." Public Opinion Quarterly 42:360–69.
- Morgan, Clifton, and Sally Campbell. 1991. "Domestic Structures, Decisional Constraints, and War." *Journal of Conflict Resolution* 35:187–211.
- Mouw, Calvin, and Michael MacKuen. 1992. "The Strategic Configuration, Personal Influence, and Presidential Power in Congress." Western Political Quarterly 45:579–608.
- Mueller, John. 1970. "Presidential Popularity from Truman to Johnson." American Political Science Review 64:18–34.

-----. 1973. War, Presidents, and Public Opinion. New York: John Wiley and Sons.

- Neustadt, Richard. 1990. Presidential Power and the Modern Presidents. New York: Free Press.
- Ostrom, Charles, and Dennis Simon. 1985. "Promise and Performance: A Dynamic Model of Presidential Popularity." American Political Science Review 79:334–58.
- Page, Benjamin, and Robert Shapiro. 1988. "Foreign Policy and the Rational Public." *Journal of* Conflict Resolution 32:211–47.

——. 1992. The Rational Public: Fifty Years of Trends in Americans' Policy Preferences. Chicago: University of Chicago Press.

Peterson, Mark. 1990. Legislating Together: The White House and Capitol Hill from Eisenhower to Reagan. Cambridge, MA: Harvard University Press.

- Ragsdale, Lyn. 1987. "Presidential Speechmaking and the Public Audience: Individual Presidents and Group Attitudes." *Journal of Politics* 49:704–36.
- Ray, James Lee. 1995. Democracy and International Conflict: An Evaluation of the Democratic Peace Proposition. Columbia: University of South Carolina Press.
- Russett, Bruce. 1990. *Controlling the Sword: The Democratic Governance of National Security.* Cambridge, MA: Harvard University Press.
- Schwarz, Benjamin. 1994. Casualties, Public Opinion and U.S. Military Intervention: Implications for U.S. Regional Deterrence Strategies. Santa Monica, CA: RAND.
- Sonner, Molly, and Clyde Wilcox. 1999. "Forgiving and Forgetting: Public Support for Bill Clinton during the Lewinsky Scandal." PS: Political Science and Politics 32:554–57.
- Stimson, James. 1990. "A Macro Theory of Information Flow." In *Information and Democratic Processes*, ed. John Freeman and James Kuklinski, pp. 345–68. Chicago: University of Chicago Press.

Tulis, Jeffrey. 1987. The Rhetorical Presidency. Princeton, NJ: Princeton University Press.

- Wittkopf, Eugene. 1990. Faces of Internationalism: Public Opinion and American Foreign Policy. Durham, NC: Duke University Press.
- Wood, B. Dan. 2000. "Weak Theories and Parameter Instability: Using Flexible Least Squares to Take Time Varying Relationships Seriously." *American Journal of Political Science* 44:603–18.
- Zaller, John. 1992. The Nature and Origins of Mass Opinion. New York: Cambridge University Press.
- Zaller, John, and Stanley Feldman. 1992. "A Simple Theory of the Survey Response: Answering Questions versus Revealing Preferences." *American Journal of Political Science* 36(3):579–616.