Partisan Dynamics and the Volatility of Presidential Approval

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In many areas of political science, scholars have begun to emphasize the dynamics driving the statistical variance of political outcomes as well as those governing changes in the mean. Some recent studies have brought this methodological focus on variance to measures of presidential approval, but no one has yet examined how the effects of traditional explanatory variables (such as major events and war) on the volatility of approval interact with respondents' partisan predispositions. Using both aggregate approval data and individual-level panel data, this analysis demonstrates that factors reinforcing a group's partisan proclivities to support or oppose the president increase the stability of that group's support, while developments that conflict with a group's partisan predispositions increase the volatility of approval.

Since the Gallup Poll's inauguration in the mid-twentieth century, the mean level of public support for the president has evolved into one of the most anxiously watched quantities in the political arena. The survey is a readily accessible measure of the 'Chief Executive's' stock of political capital.[1] As such, scholars have shown its critical influence on a range of political outcomes from legislative success in Congress, to congressional and presidential electoral fortunes and even to the propensity of presidents to exercise military force abroad.[2]

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[1] Richard Neustadt, *Presidential Power and the Modern Presidents* (New York: The Free Press, 1990); Samuel Kernell, *Going Public: New Strategies of Presidential Leadership* (Washington, D.C.: Congressional Quarterly Press, 1997).

[2] For legislative success, see George Edwards, *Presidential Influence in Congress* (San Francisco: Freeman, 1980); Douglas Rivers and Nancy Rose, 'Passing the President's Program: Public Opinion and Presidential Influence in Congress', *American Journal of Political Science*, 29 (1985), 183–96; Brandice Canes-Wrone and Scott de Marchi, 'Presidential Approval and Legislative Success', *Journal of Politics*, 64 (2002), 491–509. For conflicting perspectives on approval's effect on legislative influence, see Kenneth Collier and Terry Sullivan, 'New Evidence Undercutting the Linkage of Approval with Presidential Support and Influence', *Journal of Politics*, 57 (1995), 197–209; and Jeffrey Cohen, Jon Bond, Richard Fleisher and John Hamman, 'State Level Presidential Approval and Senatorial Support', *Legislative Studies Quarterly*, 15 (2000), 577–90. For electoral outcomes, see James Campbell and Joe Sumners, 'Presidential Coattails in Senate Elections', *American Political Science Review*, 84 (1990), 513–24; James Campbell, 'Presidential Coattails and Midterm Losses in State Legislative Elections', *American Political Science Review*, 80 (1986), 45–63; Robert Erikson and Chris Wlezien, 'Of Time and Presidential Election Forecasts', *PS: Political Science and Politics*, 29 (1996), 37–9. On the frequency of military action, see Charles Ostrom and Bryan Job, 'The President and the Political Use of Force', *American Political Science Review*, 80 (1986), 541–66; Patrick James and John Oneal, 'The Influence of Domestic and International Politics on the President's Use of Force', *Journal of Conflict Resolution*, 35 (1991), 307–32. For a contrasting view, see James Meernik, 'Presidential Decision-making and the Political Use of Force', *International Studies Quarterly*, 38 (1994), 121–38; William Howell and Jon Pevehouse, 'Presidents, Congress and the Use of Force', *International Organization*, 59 (2005), 209–32.

However, particularly in today's intensely polarized political environment, the variance of presidential approval – its volatility, predictability and anticipated stability over repeated polls – may be just as important as its mean level at any given moment. Indeed, in a country almost evenly divided along party lines, for much of its tenure in office the Bush administration has focused on solidifying its conservative base and minimizing the volatility in Republican support for the president, even at the expense of pursuing policies that might appeal to the 'median respondent'.[3]

To illustrate the importance of variance, consider the 2004 election season, when the president's popularity rating hovered just north of 50 per cent. If, as numerous studies suggest, presidential approval is a strong predictor of the actual outcome at the ballot box, high variance about that mean could foreshadow political disaster.[4] Instability in popular support for the president yielding significantly different estimates of mean approval from poll to poll – even in the absence of any exogenous shock – signals an electorate that could swing either way on election day. Repeated polling could return a result in the mid 50s or mid 40s with equal probability, one foreshadowing a convincing victory, the other a catastrophic defeat. Through a carefully orchestrated campaign, Karl Rove and the other architects of the Bush re-election victory aimed primarily to reduce this uncertainty by stabilizing the president's level of popular support around its modest, yet 'good enough', mean.[5]

[3] Such a strategy may have made sense in 2004 when Bush's approval hovered in the low 50s. By contrast, in January 2007, with his approval mired in the low 30s, Bush shifted strategies. In his 2007 'State of the Union Address', the president proposed a number of policies designed not to minimize the variance in his support, but to appeal to moderates in the hopes of increasing it, even if some of his initiatives, such as comprehensive immigration reform, may raise approval volatility among his core supporters.

[4] See, for example, Robert Erikson and Christopher Wlezien, 'Post-Election Reflections on Our Pre-Election Predictions', *PS: Political Science and Politics*, 38 (2005), 25–6; Alan Abramowitz, 'The Time for Change Model and the 2004 Presidential Election: A Post-Mortem and a Look Ahead', *PS: Political Science and Politics*, 38 (2005), 31; Thomas Holbrooke, 'A Post-Mortem and Update of the Economic News and Personal Finances Forecasting Model', *PS: Political Science and Politics*, 38 (2005), 35–6.

[5] Of course, if the mean level of support for the president was exactly 50 per cent and the other 50 per cent unanimously supported his opponent, reducing the variance would only affect the likely margin of victory or defeat, not its probability. However, if the mean level of support was in the low 50s, or if support for the president's chief rival was less than 50 per cent, then reducing the variance in support, absent any change in the mean, could greatly increase the president's probability of receiving more support than his opponent.

To some extent, these dynamics mirror an important strand of literature on congressional elections. For example, Thomas Mann argues that the growing personal incumbency advantage of Members of Congress has not resulted in significantly lower turnover rates in Congress in recent decades because, while the mean margin of victory has increased, so, too, has the variance in congressional vote swings (Thomas Mann, *Unsafe at Any Margin: Interpreting Congressional Elections* (Washington, D.C.: American Enterprise Institute, 1978)). Even as the average margin of victory grows, because the variance is also increasing, the electoral risks incumbents face also rise. See also Gary Jacobson, 'The Marginals Never Vanished: Incumbency and Competition in Elections to the U.S. House of Representatives', *American Journal of Political Science*, 31 (1987), 126–41; Gary Jacobson, *Politics of Congressional Elections* (New York: Pearson Longman, 2004). For a more sceptical analysis of whether this dynamic continues to hold true in recent decades, see Stephen Ansolabehere and James M. Snyder, 'The Incumbency Advantage in U.S. Elections: An Analysis of State and Federal Offices, 1942–2000', *Election Law Journal*, 1 (2002), 315–38.

Increasingly, students of public opinion have emphasized the political importance of variance and response instability, particularly in presidential approval.[6] However, these studies have largely failed to examine how the effect of many traditional explanatory variables on approval volatility is mediated by groups' partisan predispositions to support or oppose the president.

In this article, we examine the effect of major events and war on the variance in approval among the president's partisan supporters, opponents and independents. An extensive literature probes the conditions under which the American public rallies round or punishes the president in the wake of major international and domestic events.[7] In a similar vein, numerous studies have explored the influence of combat casualties on support for the 'Commander in Chief' and the debate about whether their effect on opinion is invariant or conditional on the public's perceptions of the mission's prospects for success, elite consensus or dissension, or even the nature of the military venture itself.[8] While important differences remain between different schools of thought, all of these studies share a common focus – they only examine the effect on *mean* approval of events and casualties. Here we take a different approach: we explore the effects of these same factors on the *volatility* of presidential support.

For the president's co-partisans, adverse developments, such as combat casualties and negative rally events, conflict with their partisan proclivities to rally around their standard bearer in the Oval Office. As such, these individuals' approval choices should be more unstable across repeated queries, and at the aggregate level this should produce greater error variance and heightened volatility of approval around the group's predicted mean. Conversely, positive developments reinforce partisan leanings and decrease the variance in presidential support. For opposition party identifiers, the logic is reversed.

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[6] R. Michael Alvarez and Charles Franklin, 'Uncertainty and Political Perceptions', *Journal of Politics*, 56 (1994), 671–88; R. Michael Alvarez and John Brehm, *Hard Choices, Easy Answers: Values, Information and American Public Opinion* (Princeton, N.J.: Princeton University Press, 2002); Bear Braumoeller, 'Explaining Variance; Or, Stuck in a Moment We Can't Get Out Of', *Political Analysis*, 14 (2006), 268–90; Luke Keele and Jennifer Wolak, 'Value Conflict and Volatility in Party Identification', *British Journal of Political Science*, 36 (2006), 671–90; Dean Lacy, 'A Theory of Nonseparable Preferences in Survey Responses', *American Journal of Political Science*, 45 (2001), 239–58. For studies of variance specifically focusing on presidential approval, see Paul Gronke, 'Policies, Prototypes, and Presidential Approval' (paper presented at the Annual Meeting of the American Political Science Association Atlanta, 1999); Paul Gronke and John Brehm, 'History, Heterogeneity, and Presidential Approval: A Modified ARCH Approach', *Electoral Studies*, 21 (2002), 425–52; Douglas Kriner, 'Examining Variance in Presidential Approval: The Case of FDR in World War II', *Public Opinion Quarterly*, 70 (2006), 23–47.

[7] John Mueller, 'Presidential Popularity from Truman to Johnson', *American Political Science Review*, 64 (1970), 18–34; Richard A. Brody and Catherine Shapiro, 'A Reconsideration of the Rally Phenomenon in Public Opinion', in Samuel Long, ed., *Political Behavior Annual* (Boulder, Colo.: Westview, 1989), pp. 77–102; Bradley Lian and John R. Oneal, 'Presidents, the Use of Military Force, and Public Opinion', *Journal of Conflict Resolution*, 37 (1993), 277–300; Paul Brace and Barbara Hinckley, 'The Structure of Presidential Approval', *Journal of Politics*, 53 (1991), 993–1017.

[8] John Mueller, *War, Presidents, and Public Opinion* (New York: John Wiley and Sons, 1973); Adam Berinsky, 'Assuming the Costs of War: Events, Elites, and American Public Support for Military Conflict', *Journal of Politics*, 69 (2007), 975–97; Christopher Gelpi, Peter Feaver and Jason Reifler. 'Success Matters: Casualty Sensitivity and the War in Iraq', *International Security*, 30 (2005/2006), 7–46; Eric Larson, *Casualties and Consensus: The Historical Role of Casualties in Domestic Support for U.S. Military Operations* (Santa Monica, Calif.: RAND, 1996); Bruce Jentleson and Rebecca Britton, 'Still Pretty Prudent: Post-Cold War American Public Opinion on the Use of Military Force', *Journal of Conflict Resolution*, 42 (1998), 395–417; Bruce Jentleson, 'The Pretty Prudent Public: Post Post-Vietnam American Opinion on the Use of Military Force', *International Studies Quarterly*, 36 (1992), 49–74.

We examine these expectations within contemporary theories of survey response, and test them using Gallup presidential approval data, disaggregated by partisan identification, and individual-level panel data from the 1980 National Election Study. Across partisan groups, the empirical results strongly accord with theoretical expectations: factors that reinforce partisan predispositions both decrease volatility at the individual level and lower variance in the aggregate, while those that conflict with a group's partisan leanings increase approval variance.

VARIANCE AND MODELS OF THE SURVEY RESPONSE

At least since Phillip Converse's seminal article in 1964, scholars have recognized the importance of variance and volatility in public opinion data and its implications for policy making.[9] Yet for decades most scholars had either treated response volatility as evidence that the public lacked 'true preferences' on questions of major import[10] or dismissed it as an artefact of measurement error.[11] More recently, however, advances in our understanding of the cognitive dynamics producing survey responses have shed new light on the root causes of response instability and offered insights into how real world developments may produce changes in variance over time.

Instead of conceptualizing the survey response as the expression of a 'true attitude', a growing number of scholars have begun to understand it as a temporary construct formed from a well of internally-conflicted competing considerations.[12] Simple 'off the top of the head' models posit that the survey response is drawn merely from the first consideration that comes to mind when the question is asked,[13] while other models argue that individuals average across a range of salient considerations when constructing their responses.[14] Both models, however, locate the source of response variance in the same place: the presence or absence of conflicting considerations underlying the survey response.[15]

[9] Phillip Converse, 'The Nature of Belief Systems in Mass Publics', in David Apter, ed., *Ideology and Discontent* (New York: Free Press, 1964), pp. 206–61.

[10] Converse, 'Nature of Belief Systems'; Phillip Converse and Gregory Markus, 'Plus ça Change …: The New CPS Panel Study', *American Political Science Review*, 73 (1979), 32–49.

[11] Christopher Achen, 'Mass Political Attitudes and the Survey Response', *American Political Science Review*, 69 (1975), 1218–31; Gillian Dean and Thomas Moran, 'Measuring Mass Political Attitudes: Change and Unreliability', *Political Methodology*, 4 (1977), 383–401; Robert Erikson, 'The SRC Panel Data and Mass Political Attitudes', *British Journal of Political Science*, 9 (1979), 16–49; Stanley Feldman, 'Measuring Issue Preferences: The Problem of Response Instability', *Political Analysis*, 1 (1989), 25–60.

[12] Timothy Wilson and Sarah Hodges, 'Attitudes as Temporary Constructs', in Abraham Tesser and L. Martin, eds, *The Construction of Social Judgment* (Hillsdale, N.J.: Erlbaum, 1991), pp. 37–65; Jennifer Hochschild, *What's Fair? Americans' Attitudes Toward Distributive Justice* (Cambridge, Mass.: Harvard University Press, 1981); Robert Wyer and Jon Hartwick, 'The Recall and Use of Belief Statements as Bases for Judgments', *Journal of Experimental Social Psychology*, 20 (1984), 65–85.

[13] Shelly Taylor and Susan Fiske, 'Salience, Attention and Attribution: Top of the Head Phenomena', in Leonard Berkowitz, ed., *Advances in Experimental Social Psychology* (New York: Academic Press, 1978), pp. 249–88; Amos Tversky and Daniel Kahneman, 'The Framing of Decisions and the Psychology of Choice', in Robin Hogarth, ed., *Question Framing and Response Consistency* (San Francisco: Jossey-Bass, 1982), pp. 3–20.

[14] Angus Campbell, Philip Converse, Warren Miller and Donald Stokes, *The American Voter* (New York: Wiley, 1960); Stanley Kelley, *Interpreting Elections* (Princeton, N.J.: Princeton University Press, 1983); John Zaller, *The Nature and Origin of Mass Opinion* (Cambridge: Cambridge University Press, 1992).

[15] A third school of thought embraces an on-line processing or running tally model, suggesting that individuals process additional information as it arises and use it to update their prior opinions on a given topic. See Milton Lodge, Kathleen McGraw and Patrick Stroh, 'An Impression-Driven Model of Candidate Evaluation', *American Political Science Review*, 83 (1989), 399–420; Reid Hastie and Bernadette Park,

In the 'top of the head' model, the presence of conflicting considerations raises the possibility that at one moment an individual may recall a perspective that moves him to answer a question in a given way, while at a later moment the same individual may recall a different consideration leading him to respond to an identically worded question in the opposite manner. From the averaging perspective, the presence of conflicting considerations leads to ambivalence, which in turn produces response instability across repeated queries.[16]

Applying these perspectives to the variance in presidential approval suggests that the influence of many factors, such as major events and armed conflicts, will not be uniform across all partisan groups; rather it will depend on whether these developments reinforce or conflict with respondents' partisan predispositions to support or oppose a sitting president.[17] Therefore, to investigate the effect of well-known explanatory variables on approval variance we must disaggregate the approval series by partisan identification.

For members of the president's party, adverse developments conflict with partisan predispositions to support their party leader in the White House.[18] Building on prior research at the individual level, because these respondents now possess strong, highly salient conflicting considerations on which to draw when forming their survey response,

(F'note continued)
'The Relationship Between Memory and Judgment Depends on Whether the Judgment Task Is On-line or Memory Based', *Psychological Review*, 93 (1986), 258–68; Kathleen McGraw, Milton Lodge and Patrick Stroh, 'On-Line Processing in Candidate Evaluation: The Effects of Issue Order, Issue Importance, and Sophistication', *Political Behavior*, 12 (1990), 41–58; Milton Lodge, Marco Steenbergen and Shawn Brau, 'The Responsive Voter: Campaign Information and the Dynamics of Candidate Evaluation', *American Political Science Review*, 89 (1995), 309–26. In this model, conflicting considerations should not affect the variance in individuals' responses, but only the mean level of individuals' responses.

[16] John Zaller and Stanley Feldman, 'A Simple Theory of the Survey Response: Answering Questions Versus Revealing Preferences', *American Journal of Political Science*, 36 (1992), 579–616, at p. 598. Others have stressed the importance of uncertainty, in addition to and distinct from ambivalence, in driving response variance (see Alvarez and Franklin, 'Uncertainty and Political Perceptions'; R. Michael Alvarez and John Brehm, 'Are Americans Ambivalent Towards Racial Policies?' *American Journal of Political Science*, 41 (1997), 345–74). Indeed, an uncertainty perspective may explain the high base level of variance (relative to the average approval variance for members of the president's party) observed for independents' support of the president, as they lack strong predispositions to guide their approval responses and hence may be less certain in their evaluations than partisan identifiers. We discuss uncertainty as a possible source of approval variance further when we discuss our reasons for adding a 'month of term' variable to track changes in variance over the course of a presidential administration. However, because our theory emphasizes the way in which various positive and negative events reinforce or conflict with partisan predispositions, we focus here on conflicting considerations and ambivalence.

[17] Partisan attachments, reinforced by self-selection of media sources, may also dramatically shape how individuals view the same events (see Larry Bartels, 'Beyond the Running Tally: Partisan Bias in Political Perceptions', *Political Behavior*, 24 (2002), 117–50). However, we contend that while there is some room for differences in interpretation of high combat casualties and positive or negative rally events, there is enough of an objective basis on which most can agree that these developments either reflect positively or negatively upon the president and his administration.

[18] In a similar vein, Paul Sniderman and Edward Carmines explore whether liberals who hold negative stereotypes of blacks are more ambivalent when asked their support for government assistance to 'blacks and minorities' than when asked their support for assistance to 'new immigrants from Europe'. Measuring ambivalence as the time it takes to respond to the survey question, Sniderman and Carmines demonstrate that this group was more ambivalent when the question triggered their conflicting liberalism and racial stereotypes than when the question queried support for aiding white immigrants and therefore did not trigger an underlying value conflict (Paul Sniderman and Edward Carmines, *Reaching Beyond Race* (Cambridge, Mass.: Harvard University Press, 1997), pp. 84–9).

their support for the president should be less stable and more susceptible to sudden change. Conversely, for opposition party identifiers, these negative developments reinforce partisan predispositions to oppose the president. Far from creating ambivalence, they may decrease it.

For positive developments, such as traditional 'rally around the flag' events, the dynamic is essentially reversed. These provide alternative considerations when judging the president's job performance for opposition party identifiers that conflict with their negative partisan bent. As a result, positive events should raise variance for members of the opposition, while having no effect or even decreasing approval volatility among the president's fellow partisans.

Finally, because independents lack strong partisan predispositions to support or oppose the president, we expect external developments to have little impact on the variance in their approval. Such developments, positive and negative, neither conflict with nor reinforce standing partisan predispositions. However, independents may have higher base levels of variance reflecting their greater levels of uncertainty in how to evaluate a president towards whom they feel no partisan attachment or resentment.[19]

These individual-level dynamics may also drive changes in approval variance at the aggregate level. For example, if political conditions arise that make many individual partisans less stable in their response to the approval question, then variance in support for the president at the aggregate level may also increase. One poll may yield a high level of support for the president, yet because individual evaluations are unstable, a second poll may yield a considerably lower estimate, even in the absence of major political or economic changes. While our models of mean approval would predict no change in the overall level of support for the president, if the political environment has made many partisans more ambivalent and internally conflicted when they evaluate the president's job performance, we may observe substantial variance around the predicted mean.

MODELLING AGGREGATE APPROVAL VARIANCE

As statistical methods have evolved, Converse's basic observation that there is considerable instability in individual survey responses has spurred a growing body of research into how political and environmental factors influence both the probability with which survey respondents give a certain answer and the stability of their responses over time or repeated queries.[20] For example, Charles Franklin showed that a candidate's campaign tactics influenced not only the average level of voters' perceptions of his or her positions

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[19] Before proceeding to the empirical work, a caveat regarding ecological inference is in order. Our hypotheses for positive and negative developments' effects on approval volatility are based on assumptions about how these developments will affect cognitive processes at the individual level. However, any inferences drawn from patterns in volatility at the aggregate level about micro-foundations are potentially suspect. That is, even if we observe approval volatility at the aggregate level responding in the predicted ways, we cannot claim this is evidence for the hypothesized cognitive processes at the individual level. As a result, after discussing the aggregate level results we shift to an analysis of individual level panel data in the next section. Moreover, previous studies of variance in approval at the individual level have confirmed the importance of conflicting considerations and ambivalence emphasized here (Gronke, 'Policies, Prototypes, and Presidential Approval'; Kriner, 'Examining Variance'); as has recent work on the sources of volatility in partisan identification (Keele and Wolak, 'Value Conflict and Volatility in Party Identification').

[20] Converse, 'The Nature of Belief Systems in Mass Publics'.

but also their certainty in their evaluations.[21] R. Michael Alvarez and John Brehm used heteroscedastic probit models to analyse the factors driving volatility in survey responses on a range of issues from affirmative action to abortion. And in a similar vein, Luke Keele and Jennifer Wolak demonstrated the importance of conflicting core values to explaining volatility in individuals' party identification.[22]

However, until recently, scholars have paid little attention to variance in aggregate-level opinion series, even when these fluctuations are of clear political importance, as with presidential approval. Although new research has brought an increasingly advanced array of methodological tools to bear on the venerable Gallup series, most analyses have treated non-constant variance as a statistical nuisance and simply employed heteroscedasticity-consistent standard errors.[23] However, two recent studies have sought not merely to correct for heteroscedasticity, but also to examine the factors driving these changes in the variance over time.[24] One of these studies, by Paul Gronke and John Brehm, examined changes in the volatility of support for the president across multiple presidencies; however, the results of their analysis are mixed and sensitive to specification.[25] Our theory suggests a possible explanation for the lack of consistent findings: the effects of many variables on approval variance should be in opposite directions for different partisan groups. Therefore, neglecting partisanship may obscure the countervailing influence of the same factors on different groups.

Because our theory suggests that each explanatory variable's effect on the approval variance is conditional on respondents' partisan predispositions to support or oppose the sitting president, the analysis examines three approval series from the beginning of Eisenhower's term in 1953 to June 2006.[26] The first series tracks support for the president

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[21] Charles Franklin, 'Eschewing Obfuscation? Campaigns and Perceptions of U.S. Senate Incumbents', *American Political Science Review*, 85 (1991), 1193–214.

[22] R. Michael Alvarez and John Brehm, 'American Ambivalence Towards Abortion Policy: Development of a Heteroscedastic Probit Model of Competing Values', *American Journal of Political Science*, 39 (1995), 1055–82; Alvarez and Brehm, 'Are Americans Ambivalent Towards Racial Policies?' Alvarez and Brehm, *Hard Choices, Easy Answers*; Keele and Wolak, 'Value Conflict and Volatility in Party Identification'.

[23] For advances in the presidential approval literature, see Nathaniel Beck, 'Comparing Dynamic Specifications: The Case of Presidential Approval', *Political Analysis*, 3 (1991), 51–88; Matthew Lebo, ed., 'Advances in the Analysis of Political Time Series', Special Volume of *Electoral Studies*, 19 (2000), 1–110, p. 1; B. Dan Wood, 'Weak Theories and Parameter Instability: Using Flexible Least Squares to Take Time Varying Relationships Seriously', *American Journal of Political Science*, 44 (2000), 603–18; Barry Burden and Anthony Mughan, 'International Economy and Presidential Approval', *Public Opinion Quarterly*, 67 (2003), 555–78. For a review, see Paul Gronke and Brian Newman, 'From FDR to Clinton, From Mueller to ?: A Field Essay on Presidential Approval', *Political Research Quarterly*, 56 (2003), 501–12. On heteroscedasticity-consistent standard errors, see Halbert White, 'A Heteroscedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity', *Econometrica*, 48 (1980), 817–38.

[24] Gronke and Brehm, 'History, Heterogeneity, and Presidential Approval'; Kriner, 'Examining Variance'.

[25] Gronke and Brehm, 'History, Heterogeneity, and Presidential Approval'; for example, Gronke and Brehm find no influence for two broad categories of positive and negative effects on approval variance, but a positive relationship between the percentage of the electorate identifying as independents at a given time and approval volatility. When disaggregating the event categories into eight categories, they find significant negative effects for adverse economic events and domestic accomplishments, but the coefficient for independent identifiers is no longer statistically significant.

[26] Because the sample sizes are considerably smaller, a handful of one-day polls conducted by Gallup, primarily from the Clinton era, were dropped. Re-estimating the models with these polls in the sample yields very similar results. As a robustness check, all models were also re-estimated using Kalman filtered approval data (Donald Green, Alan Gerber, and Suzanna De Boef, 'Tracking Opinion over Time: A Method for Reducing Sample Error', *Public Opinion Quarterly*, 63 (1999), 178–92) with very similar results across specifications.

among his fellow partisans, the second among his partisan opponents and the third among independents.

To model the mean of presidential approval, we adopt a simple specification with standard explanatory variables common in the literature. For all three partisan series, the model for mean approval includes two dummy variables capturing positive and negative events drawn from Paul Brace and Barbara Hinckley, and from Gronke and Brehm, and updated by the authors; quarterly measures of the Index of Consumer Sentiment, capturing Americans' perceptions of the health of the economy; a Watergate dummy variable; measures of the number of American combat casualties in Vietnam during the Johnson administration and in Iraq in the six months preceding each poll; and a measure of lagged approval.[27] To allow for different base levels of support across presidents due to personal factors not captured in the model, all specifications also include unreported presidential fixed effects.

Theoretical expectations are straightforward. Since John Mueller's seminal study on the relationships between public opinion and the wars in Korea and Vietnam, most scholars have found that support for the 'Commander in Chief' declines as battlefield casualties mount.[28] Although there is some scholarly scepticism, we expect a similar pattern in Iraq.[29] Approval scholars have long documented that the Index of Consumer Sentiment

[27] For rally events, see Brace and Hinckley, 'The Structure of Presidential Approval'; Gronke and Brehm, 'History, Heterogeneity, and Presidential Approval'. Although all of the sources originally used by Brace and Hinckley were not available for the current period, the event series was updated using both the World Almanac and Time Almanac annual chronologies (Time Almanac only after October 2005) following identical coding rules. In examining only Vietnam casualties during the Johnson administration, we follow, *inter alia*, Gronke and Brehm, 'History, Heterogeneity, and Presidential Approval'; Michael MacKuen, Robert Erikson and James Stimson, 'Peasants or Bankers? The American Electorate and the US Economy', *American Political Science Review*, 86 (1992), 597–611. Vietnam casualty information was compiled from the National Archives and Record Administration's Coffelt Database [Records with Unit Information on Military Personnel Who Died During the Vietnam Conflict] and Iraq casualty information obtained from Department of Defense records [http://siadapp.dior.whs.mil/personnel/CASUALTY/castop.htm]. Alternatively, we also replicated our models using a simple dummy variable for each war with virtually identical results. Specifically, both the Vietnam and Iraq dummies were negative and statistically significant in the mean specification for all three partisan series. For the president's co-partisans, the coefficient for both war dummies in the variance equation was positive and statistically significant. For the president's partisan opponents, both war coefficients were negative, though the Vietnam coefficient narrowly failed to meet conventional levels of statistical significance. And neither coefficient was significant in the variance equation for independents. Quarterly Index of Consumer Sentiment data was taken from the University of Michigan's Survey of Consumers.

[28] Mueller, *War, Presidents, and Public Opinion*; Eugene Wittkopf, *Faces of Internationalism: Public Opinion and American Foreign Policy* (Durham, N.C.: Duke University Press, 1990); Samuel Kernell, '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 (1978), 506–22; Scott Sigmund Gartner and Gary M. Segura, 'War, Casualties, and Public Opinion', *Journal of Conflict Resolution*, 42 (1998), 278–300; Benjamin Schwarz, *Casualties, Public Opinion and U.S. Military Intervention: Implications for U.S. Regional Deterrence Strategies* (Santa Monica, Calif.: RAND, 1994); Matthew Baum and Samuel Kernell, 'Economic Class and Popular Support for Franklin Roosevelt in War and Peace', *Public Opinion Quarterly*, 65 (2001), 198–229. But see Eric Larson, *Casualties and Consensus: The Historical Role of Casualties in Domestic Support for U.S. Wars and Military Operations* (Santa Monica, Calif.: RAND, 1996); and James Burk, 'Public Support for Peacekeeping in Lebanon and Somalia: Assessing the Casualties Hypothesis', *Political Science Quarterly*, 114 (1999), 53–78.

[29] Christopher Gelpi, Peter Feaver and Jason Reifler, 'Casualty Sensitivity and the War in Iraq', *International Security*, 30 (2005), 7–46; Richard Eichenberg, Richard Stoll and Matthew Lebo, 'War

(ICS), which measures both Americans' prospective and retrospective evaluations of the economy, is a strong predictor of popular support for the president.[30] As the ICS increases, so, too, should support for the president. Finally, positive events should generate rallies in popular support behind the president, particularly from members of the opposition party, while negative events, including Watergate, should lead to dips in support.[31]

We first examined the stationarity of all three partisan series. In each case, augmented Dickey–Fuller tests allow us to reject the null hypothesis of a unit root, $p < 0.01$.[32]

(F'note continued)

President: The Approval Ratings of George W. Bush', *Journal of Conflict Resolution*, 50 (2006), 783–808; Erik Voeten and Paul Brewer, 'Public Opinion, the War in Iraq, and Presidential Accountability', *Journal of Conflict Resolution*, 50 (2006), 809–30.

[30] *Inter alia*, Robert Shapiro and Bruce Conforto, 'Presidential Performance, the Economy and the Public's Evaluation of Economic Conditions', *Journal of Politics*, 42 (1980), 49–67. Indeed, MacKuen, Erikson and Stimson have shown that after controlling for public perceptions of economic health, traditional objective measures such as unemployment and inflation are no longer significant predictors of approval (MacKuen, Erikson and Stimson, 'Peasants or Bankers?'). In the past twenty years a growing debate has arisen over whether prospective (MacKuen, Erikson and Stimson, 'Peasants or Bankers?' Robert Erikson, Michael MacKuen and James Stimson, 'Bankers or Peasants Revisited: Economic Expectations and Presidential Approval', *Electoral Studies*, 19 (2000), 295–312) or a mix of prospective and retrospective (Harold Clarke and Marianne Stewart, 'Prospections, Retrospections and Rationality: The 'Bankers' Model of Presidential Approval Reconsidered', 38 (1994), 1104–23) evaluations of the economy best account for movement in the approval series. While these scholars have decomposed the Index of Consumer Sentiment into its constituent parts to examine the relative influence of its prospective and retrospective components, we follow the lead of Burden and Mughan and others and simply include the undifferentiated index as a control (e.g. Burden and Mughan, 'The International Economy and Presidential Approval'; Eichenberg, Stoll and Lebo, 'War President'). However, to insure that our results are not sensitive to the operationalization of the economic measures, we re-estimated all of our models in Table 1 first by disaggregating the ICS into its constituent parts and in a second robustness check by also adding the objective measures of unemployment and inflation. When using these disaggregated measures, consistent with MacKuen, Erikson and Stimson, we find that prospective evaluations of expected future economic performance are strong predictors of support for the president. And most importantly, in both alternative specifications all of our substantive findings in the variance equation remain virtually identical to those reported in Table 1.

[31] Mueller, 'Presidential Popularity from Truman to Johnson'; Charles Ostrom and Dennis Simon, 'Promise and Performance: A Dynamic Model of Presidential Popularity', *American Political Science Review*, 79 (1985), 334–58; Brace and Hinckley, 'The Structure of Presidential Approval'; Brody and Shapiro, 'A Reconsideration of the Rally Phenomenon in Public Opinion'; George C. Edwards and Tami Swenson, 'Who Rallies? The Anatomy of a Rally Event', *Journal of Politics*, 59 (1997), 200–12. But see Lian and Oneal, 'Presidents, the Use of Military Force, and Public Opinion'; Matthew Baum, 'The Constituent Foundations of the Rally-Round-the-Flag Phenomenon', *International Studies Quarterly*, 46 (2002), 263–98.

[32] There is considerable debate within the literature as to whether presidential approval is a stationary series. Augmented Dickey–Fuller Tests (ADF), GLS Dickey–Fuller tests (DFGLS) and Phillips–Perron (PP) tests all reject the null hypothesis of a unit root, $p < 0.01$, for each of our three partisan approval series. However, KPSS tests suggest that we can reject the null hypothesis that the series is stationary. Thus, all three of our approval series may be near-integrated (Suzanna DeBoef and Jim Granato, 'Near-Integrated Data and the Analysis of Political Relationships', *American Journal of Political Science*, 41 (1997), 619–40) or fractionally-integrated (Matthew Lebo and Harold Clarke, 'You Must Remember This: Dealing with Long Memory in Political Analyses', *Electoral Studies*, 19 (2000), 31–48). While such series are asymptotically stationary, in finite samples they may mimic integrated series and be susceptible to spurious regression results. One solution for analysing near-integrated data is to transform the approval series into first differences (DeBoef and Granato, 'Near-Integrated Data and the Analysis of Political Relationships'; Harold Clarke, Marianne Stewart, Mike Ault and Euel Elliot, 'Men, Women,

After running diagnostic ordinary least squares (OLS) regressions, Breusch–Godfrey tests for all three series show strong evidence of autocorrelation; autocorrelation and partial autocorrelation functions suggest an MA(1) error process.[33] After modifying our mean model to account for the MA(1) error process, we observe no further evidence of autocorrelation.

We now turn to the model for the variance. In the same way as a standard linear regression model, our model for mean approval assumes:

$$\text{Approval: } N \sim (\mu, \sigma^2)$$

$$\mu_t = X_t \beta.$$

But instead of assuming a constant variance ($\sigma^2 = \alpha_0$), we employ a multiplicative heteroscedastic model and reparameterize the variance as a linear function of explanatory variables, allowing it to change over time:[34]

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

However, as in Gronke and Brehm's study, Lagrange multiplier tests showed evidence that the variance at time t is conditional on the variance at time $t-1$ for all three partisan series.[35] Accordingly, we modify our parameterization of the variance term to account for a first order autoregressive conditional heteroscedastic (ARCH) process.[36] As a result, the

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(F'note continued)

and the Dynamics of Presidential Approval', *British Journal of Political Science*, 35 (2004), 31–51). Therefore, as a robustness check we reanalysed all three of our models using the change in presidential approval from the preceding to the current observation as the dependent variable. ADF, DFGLS and PP tests on all three first-differenced series reject a unit root, and KPSS tests cannot reject the null hypothesis that the resulting series are stationary. All results remain virtually identical to those presented in the text. Specifically, for members of the president's party, combat casualties in Vietnam and Iraq increased the variance in change in approval. Negative events were also positively correlated with increasing variance, though the coefficient failed to meet conventional levels of statistical significance. Among opposition party identifiers, positive rally events increased approval variance, while combat casualties in both wars decreased it. Variance also decreased considerably over the course of each presidency. And among independents, neither rally events nor casualties had any statistically significant effect on variance, and the coefficient for the month of term variable, while negative as expected, narrowly misses conventional levels of statistical significance. Because of this robustness check on the differenced approval series, we are confident that the results presented in the text and Table 1 are not spurious.

[33] As Nathaniel Beck notes, it is empirically difficult to distinguish MA from AR error processes (Nathaniel Beck, 'Comparing Dynamic Specifications: The Case of Presidential Approval', *Political Analysis*, 3 (1991), 51–88). All models were also re-estimated with an AR(1) error specification with virtually identical results. Most importantly, the signs and significance levels for all of our variables of interest in the variance equation remain unchanged.

[34] Gary King, *Unifying Political Methodology: The Likelihood Theory of Statistical Inference* (Ann Arbor: The University of Michigan Press, 1998); M. Davidian and R.J. Carroll, 'Variance Function Estimation', *Journal of the American Statistical Association*, 82 (1987), 1079–91.

[35] The Lagrange multiplier test statistics for all three series are as follows. For president's co-partisans, the statistic was 33.42; for partisan opponents it was 20.07; and for independents it was 15.79. All of these are higher than the chi-squared $p < 0.01$ critical value with one degree of freedom (6.64), leading us to reject the null hypothesis of no first order ARCH effects. Regression analysis of the squared residuals on multiple lags showed no evidence of higher order ARCH effects.

[36] Scholars have demonstrated that a variety of factors – from an omitted variable in the mean equation to residual autocorrelation – can cause an erroneous rejection of the null of conditional homoscedasticity. See Dick van Dijk, Philip Hans Franses and Andre Lucas, 'Testing for Arch in the Presence of Additive Outliers', *Journal of Applied Econometrics*, 14 (1999), 539–62; Robin Lumsdaine and

variance at a given moment is modelled as both a function of substantive variables of interest (Z_t) and of the squared residuals from the previous period (ε_{t-1}^2):

$$\sigma_t^2 = \exp(\alpha_0 + Z_t\gamma + \alpha_1\varepsilon_{t-1}^2).$$

To test our theory that the effect of an explanatory variable on variance will depend on whether it conflicts with or reinforces a group's partisan predispositions, the variance model includes the positive and negative major event variables and Vietnam and Iraq combat casualties. However, approval volatility may also change systematically over the course of a president's term. At the outset of a new administration, respondents have little information on which to base their evaluations of presidential job performance. As time passes, political learning may occur and the information available to respondents increases. If uncertainty can also produce approval variance, then volatility may be highest in the honeymoon period and decline over the course of an administration.[37] To account for this, we include a simple counter for the number of months elapsed in a presidential administration. Finally, the variance model also includes dummy variables for each president allowing the intercept to vary by administration. The complete variance equation is:

$$\begin{aligned}
\text{Variance} = \exp(&\alpha_1\varepsilon_{t-1}^2 + \beta_1\,\text{Positive Event}_{t-1} + \beta_2\,\text{Negative Event}_{t-1} \\
&+ \beta_3\,\text{Vietnam Casualties in the Last 6 Months} + \beta_4\,\text{Iraq Casualties in the} \\
&\text{Last 6 Months} + \beta_5\,\text{Month of Presidency} + \beta_{6-15}\,\text{Presidential Fixed Effects}).
\end{aligned}$$

To reiterate, the expected effects of the event and casualties variables on approval variance are conditional on whether each conflicts with or reinforces a group's partisan predispositions to support or oppose the president. For members of the president's party, negative events and combat casualties in Vietnam and Iraq all provide alternative bases on which to evaluate the president's job performance that conflict with these respondents' natural inclination to support a president of their own party. Such developments should increase approval volatility about the estimated mean. Conversely, positive events reinforce existing partisan predispositions and consequently may decrease variance in support.

For the president's partisan opponents, the expected effect of each variable on approval variance is essentially reversed. Positive events now clash with partisan and ideological predispositions to oppose a president from the other party. Negative events and mounting battle deaths, by contrast, reinforce these respondents' inclination to oppose the president. As a result, the same factors that increased variance for the president's co-partisans should decrease variance in his approval ratings among his partisan opponents.

For independents, who lack strong partisan predispositions one way or the other, there is little potential for conflict or reinforcement and hence we expect these factors to have no effect on their approval variance.

(F'note continued)
Serena Ng, 'Testing for ARCH in the Presence of a Possibly Misspecified Conditional Mean', *Journal of Econometrics*, 93 (1999), 257–79. Consequently, we also re-estimated all three models using only a multiplicative heteroscedastic parameterization of the variance, with no ARCH term. For each partisan series, the results are virtually identical to those reported in Table 1, greatly strengthening confidence in the robustness of our results.

[37] See Alvarez and Franklin, 'Uncertainty and Political Perceptions'; Alvarez and Brehm, 'Are Americans Ambivalent Towards Racial Policies?'

RESULTS AND DISCUSSION

Table 1 summarizes the results for all three partisan approval series. The results for the models of mean approval are virtually identical across the partisan series and strongly accord with previous research. In each case, combat casualties in the last six months, negative events (albeit a statistically insignificant effect for independents) and the unfolding of the Watergate scandal all decreased support for the president's job performance, while positive rally events and rising consumer sentiment increased popular support for the 'Chief Executive'.

However, Table 1 makes plain that many of these same factors' influence on the volatility of approval is not uniform, but rather depends critically on each group's partisan

TABLE 1   *Factors Driving the Changes in the Mean and Variance of Presidential Approval Disaggregated by Party, 1953–2006*

Independent variables	President's party	Opposition party	Independents
Mean Model			
Positive events	2.14***	3.58***	3.65***
	(0.39)	(0.85)	(0.71)
Negative events	−1.09**	−1.62***	−0.91
	(0.45)	(0.63)	(0.60)
Index of Consumer Sentiment	0.05***	0.04***	0.07***
	(0.01)	(0.01)	(0.01)
Watergate	−3.58***	−3.03***	−3.09***
	(0.70)	(0.65)	(0.61)
Vietnam casualties in last 6 months (1,000s)	−0.40***	−0.30**	−0.37***
	(0.13)	(0.13)	(0.12)
Iraq casualties in last 6 months (100s)	−0.29***	−0.80***	−0.79***
	(0.07)	(0.17)	(0.15)
Approval$_{t-1}$	0.87***	0.89***	0.88***
	(0.02)	(0.02)	(0.02)
Moving average (Θ)	−0.38***	−0.30***	−0.40***
	(0.04)	(0.05)	(0.04)
Variance model			
Positive events	0.11	1.11***	0.44
	(0.24)	(0.33)	(0.29)
Negative events	0.31	−0.22	0.14
	(0.22)	(0.33)	(0.26)
Vietnam casualties in last 6 months	0.18***	−0.21**	−0.02
	(0.06)	(0.09)	(0.10)
Iraq casualties in last 6 months	0.16**	−0.16**	−0.03
	(0.07)	(0.08)	(0.07)
Month of presidency (10s)	−0.05*	−0.08*	−0.06**
	(0.03)	(0.04)	(0.03)
ARCH term (α_1)	0.16***	0.09***	0.13***
	(0.06)	(0.03)	(0.05)
Log-likelihood	−2,732.82	−3,117.68	−3,090.72
N	1,020	1,020	1,020

Note: All significance tests are two-tailed; all models report robust standard errors; all models of the mean and variance include fixed effects for each administration.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

affect towards the president. The first column examines the factors driving variance among the president's co-partisans. While positive events, which should reinforce these respondents' partisan predispositions to support the president, had no statistically significant effect on variance, the coefficient for negative events is positive and only narrowly fails to reach conventional levels of statistical significance. Because they pose conflicting considerations on which the party faithful may judge their standard bearer, negative events inject volatility into their support for the president. Thus, although the effect of negative events on mean approval is rather modest, the model results raise the possibility that negative events may further weaken the president by undermining the stability and predictability of his approval among his partisan base.

Also consistent with theoretical expectations, American combat casualties raise variance among the president's partisan base. The coefficients for both Vietnam and Iraq casualties in the preceding six months are positive and strongly statistically significant.[38] Like other negative events, American battle deaths provide co-partisans with a highly salient alternative basis on which to evaluate the president that conflicts with their partisan predisposition to support him. In so doing, casualties pose a dual problem for the president: they both depress his mean level of support and increase the variance in his support among his partisan core.

The results also suggest that approval volatility decreases over the course of a presidential term, as the coefficient for the month of administration counter variable is both negative and statistically significant. And finally, the unreported presidential fixed effects show that Ford and Carter had the highest levels of approval volatility among their partisan allies while George W. Bush has enjoyed the most stable support from his partisan identifiers. This latter finding dovetails nicely with recent research emphasizing the remarkable stability of Bush's support among his partisan base.[39]

To explore the substantive impact of each variable on approval variance, the first column in Table 2 presents a series of first differences showing the change in the standard deviation of the distribution of 1,000 approval simulations from the model in column 1 of Table 1 produced by a shift of each independent variable from its 10th to 90th percentile (0 to 1 for dummy variables), while holding all other variables constant at their means

TABLE 2   *First Differences Illustrating Changes in the Standard Deviation of Approval Caused by 10th to 90th Percentile Shift in Each Variable*

Independent variable	President's party, change in s.d.	Opposition party, change in s.d.
Positive events	0.11	**3.65**
Negative index	0.34	−0.51
Vietnam casualties	**2.60**	**−4.07**
Iraq casualties	**0.84**	**−1.45**
Month of presidency	**−0.28**	**−1.12**

Note: Changes that are statistically significant, $p < 0.10$, are in bold.

[38] Moreover, the significant, positive relationships for both Vietnam and Iraq casualties are robust across specifications and operationalizations of casualties (e.g. last month, quarterly, cumulative).
[39] Gary C. Jacobson, *A Divider, Not a Uniter: George W. Bush and the American People* (New York: Pearson Longman, 2006).

or medians.[40] Although the negative event coefficient narrowly missed conventional levels of statistical significance, substantively its estimated effect on approval variance is considerable; each negative event increased the standard deviation of the president's co-partisans' support by more than a third of a point. Similarly, casualties greatly increased the variance in approval, as 10th to 90th percentile shifts in Vietnam and Iraq casualties boosted the standard deviation in co-partisan support for the president by 2.60 and 0.84 points respectively.

To illustrate the effects of such shifts on approval variance graphically, Figure 1 presents kernel density plots of two sets of simulations, varying the levels of American casualties suffered in Vietnam in the preceding six months from 0 to 8,100 (90th percentile) while holding all other variables constant at their means or medians. Each curve represents the expected distribution of answers Gallup may observe if it asked the approval question of 1,000 different groups in identical political and economic environments. The shapes of these distributions can be as politically important as their means for they provide important information about the predictability of support for the president in the current political context. Dispersed distributions suggest considerable variance around the model's predicted mean, while distributions with lower standard deviations suggest that observed levels of support for the president rarely deviate wildly from the model's predicted mean value.
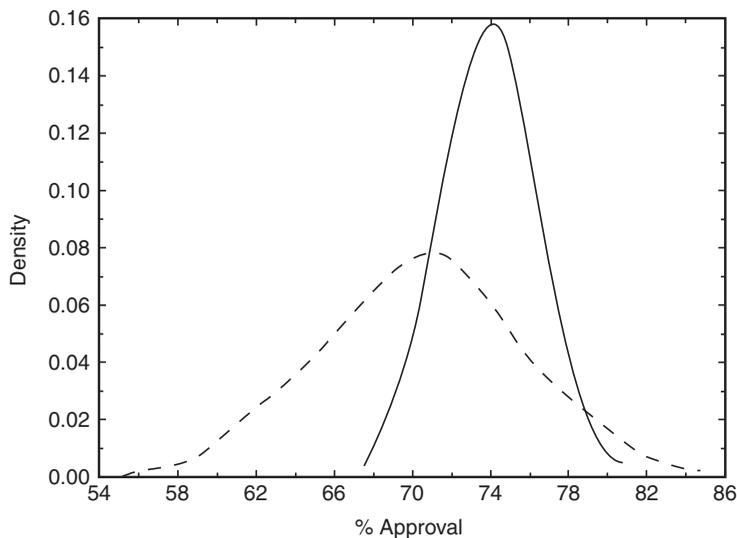
Fig. 1. Kernel density of simulated approval ratings among president's co-partisans with varying levels of combat casualties in Vietnam in the preceding six months
Notes: Solid line = No casualties. Dashed line = 8,100 casualties (90th percentile).

Among the president's co-partisans, the effect of this shift in Vietnam casualties on mean approval is quite modest, approximately a 3 percentage point decline. However, the effect of this shift in casualties on the shape of the two distributions is dramatic.

[40] All first differences in Table 2 are estimated for the George W. Bush presidency, except for the Vietnam casualties effects, which were estimated for the Johnson presidency. The positive and negative event first differences were estimated for the pre-Iraq period in the twenty-fourth month of the Bush presidency. The month of presidency first difference was also estimated with Iraq casualties set equal to zero.

The simulations suggest that before war erupted in the jungles of Southeast Asia, Democrats' support for the Johnson administration clustered tightly in the mid 70s. Only on rare occasions would we expect to observe a rating in the 60s and, absent an exogenous shock, the probability of observing a rating in the 50s is virtually nil. However, after full-fledged American intervention in Vietnam, high casualties inject considerable volatility and unpredictability into co-partisan support for the president. In these simulations, the expected value for Democratic support for Johnson remains around 70; however, simulated observations in the mid to low 60s are common and a number even dip into the 50s. Thus, perhaps the greatest effect of the Vietnam War on support for Johnson among his partisan base was not its direct impact on the mean level of approval he enjoyed but its dramatic effect on the volatility and predictability of Democratic support for his job performance around that mean.

The second column in Table 1 shows the starkly different effects of the very same explanatory factors on approval variance among opposition party identifiers. Whereas the model for approval among the president's co-partisans showed no relationship between positive rally events and changes in variance, the coefficient for partisan opponents' approval is strongly positive, substantively large and highly statistically significant. Thus, when viewed from a variance perspective, the long-studied rally effect takes on a new dimension. Consistent with Matthew Baum's findings, the mean models show that in the immediate aftermath of a positive event the president's partisan opponents, who by virtue of their much lower base levels of support have the greatest potential for movement, give presidents a strong boost in support as they rally around the flag.[41] However, this new evaluative frame is in direct conflict with their partisan predispositions to oppose the president. The presence of conflicting internal considerations and the resulting ambivalence should render this increase unstable; accordingly, at the aggregate level we observe higher levels of variance around the model's slightly higher expected mean value.

Furthermore, a variance perspective dovetails with Richard Brody and Catherine Shapiro's emphasis on elite discourse and the size and duration of a popular rally.[42] When opposition party elites criticize administration policy they trigger respondents' pre-existing reasons for disapproving of the president and exacerbate the internal conflict within those who may have initially rallied behind the White House. Such a strategy may both decrease the mean level and inject more volatility into the president's support, weakening his ability to leverage any sustained, consistent gains to his political advantage.

Also consistent with theoretical expectations, the coefficient for negative events, which had a strong positive impact on variance in the partisan identifiers' approval series, is negative, albeit statistically insignificant, in the model of opposition party approval. If anything, negative events seem to reinforce opposition identifiers' partisan predispositions not to support the sitting president.

In a similar vein, the effect of wartime casualties was dramatically different for opposition party identifiers from what it was for the president's co-partisans. Whereas high levels of combat casualties in both the Vietnam and Iraq eras increased approval variance for the president's partisan allies, they decreased variance in support among his partisan opponents. For this group of respondents, the negative frame provided by high war costs reinforces group partisan predispositions to oppose the president. Thus, for wartime presidents,

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[41] Baum, 'The Constituent Foundations of the Rally-Round-the-Flag Phenomenon'.
[42] Brody and Shapiro, 'A Reconsideration of the Rally Phenomenon'; Richard A. Brody, *Assessing the President: The Media, Elite Opinion, and Public Support* (Stanford, Calif.: Stanford University Press, 1991).

casualties pack a double punch, slashing both the mean level of his support among the partisan opposition and decreasing the level of volatility around this lower mean.

Finally, for opposition partisans the results again suggest that approval volatility decreases over the course of a presidential administration. The logic here may mirror that of the 'rally round the flag' effect. During the honeymoon period, even partisan opponents may rally around the new president; yet, as time progresses, information about the new denizen of the Oval Office accumulates. As opposition partisans update their evaluation of the president's job performance accordingly, approval volatility decreases.

With respect to the presidential intercept variables, the most interesting trend is that, on average, across administrations the base level of variance is considerably higher for the president's partisan opponents than for his co-partisans. For members of the opposition party, the innate compulsion to rally round the president as the 'Chief of State', a national symbol and often the most visible and revered leader of the federal government, conflicts with their basic partisan incentives to oppose him.[43] As such, the base level of approval volatility is considerably higher for this group than for the president's partisan supporters.

The second column of first differences in Table 2 examines the effect of each variable on approval variance among opposition party identifiers. Positive events dramatically increased the standard deviation of the error variance by over 3.5 points. Conversely, combat casualties in Vietnam and Iraq substantially depressed volatility in support for the president by approximately −4 and −1.5 points respectively. And finally, *ceteris paribus*, the standard deviation of opposition party approval was almost a full point lower in the fifth year of a presidential administration than in the first.

To illustrate the effects of rally events and wartime casualties on opposition party approval variance graphically, Figures 2 and 3 present kernel density plots of two sets of simulations adjusting the positive rally event and Iraq casualties variables while holding all other variables constant at their means or medians. The solid line curve in Figure 2 shows the distribution of simulated approval ratings estimated with no rally event, while the dashed line curve reveals the distribution of simulated approval ratings if a positive rally event occurred. While rally events do give presidents a small boost in approval on average, they also dramatically increase the unpredictability of opposition party identifiers' approval of the president. The simulations suggest that in the wake of a rallying event repeated queries may show a much wider range of aggregate support for the president among his partisan opponents, sometimes considerably higher than the mean value and sometimes considerably lower. Thus, while presidents do enjoy a boost in support from rallying events, this benefit is tempered by increased volatility around the new expected mean value.

Finally, Figure 3 focuses on the impact of Iraq War casualties on variance in Democratic support for President George W. Bush. The solid curve represents simulations of Democratic approval if there were no casualties in Iraq in the preceding six months, while the dashed curve summarizes simulations with 456 casualties (90th percentile) in otherwise identical political and economic circumstances. The two curves illustrate the double effect of Iraq on Democratic support for the president: casualties both decreased the expected mean level of Democratic support for Bush and made the density curve of simulated approval ratings more tightly clustered around this lowered mean. While

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[43] Fred Greenstein, *The Hidden Hand Presidency: Eisenhower as Leader* (New York: Basic Books, 1982).
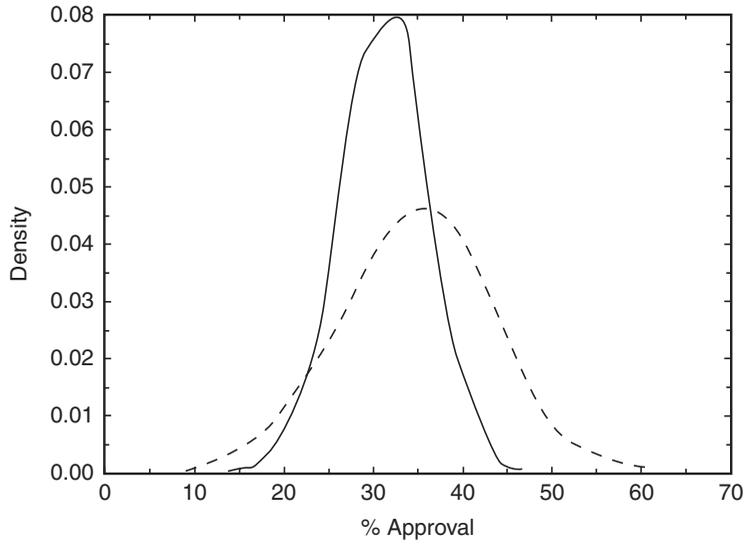
Fig. 2. *Kernel density of simulated approval ratings among president's partisan opponents with and without a positive rally event*
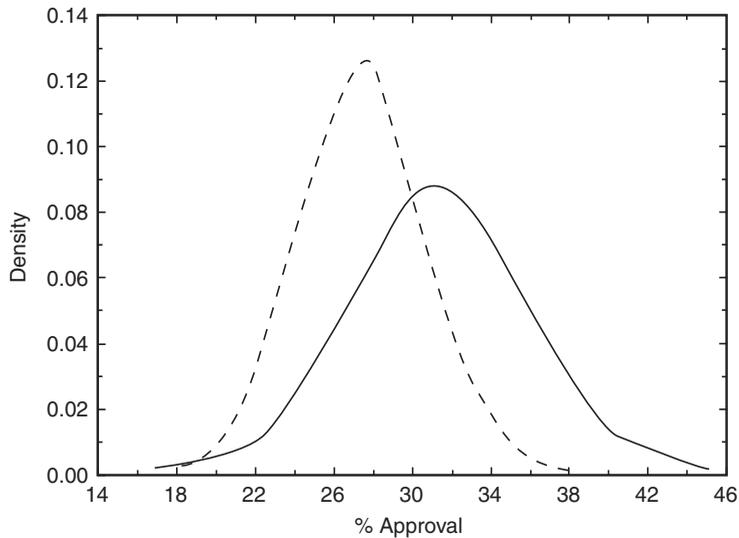*Notes:* Solid line = No rally event. Dashed line = Rally event.

Fig. 3. *Kernel density of simulated approval ratings among president's partisan opponents with varying levels of combat casualties in Iraq in the preceding six months*
Notes: Solid Line = No casualties. Dashed Line = 456 casualties (90th percentile).

observations of Democratic approval in the mid 30s and even 40s are common in the zero casualties simulations, they are virtually non-existent in the high casualties variant.

The third column in Table 1 replicates an identical model on approval among independents. Because independents do not possess strong partisan predispositions toward the president which positive or negative developments can conflict with or reinforce, our

theory suggests these factors should have little influence on approval variance. The results largely accord with this theoretical expectation. None of the events or casualties coefficients in the variance model are statistically significant. The coefficient closest to statistical significance is for positive rally events, which suggests that rally events may have an effect on independents that mirrors their influence on opposition partisans. While positive events do produce a non-trivial boost in independent approval, this increase may come at the cost of increased volatility around this higher expected value. Such an effect would be consistent with the extensive scholarly literature warning about the transience and unpredictability of many 'rally around the flag' effects. The only significant effect is for the month of administration variable. This negative relationship suggests that approval volatility for independents, as for partisan opponents and co-partisans, may also decline over the course of a president's tenure in office. And finally, the unreported fixed effects show that the average base level of variance for independents, as for partisan opponents, is significantly higher than for the president's co-partisans.

MODELLING INDIVIDUAL-LEVEL APPROVAL VOLATILITY

The preceding models strongly suggest that approval variance at the aggregate level rises or falls in accordance with whether major domestic, international or military events are in conflict with or reinforce a group's partisan predispositions toward the incumbent. Faced with adverse developments, such as high combat casualties or a negative world event, the president's co-partisans have new, conflicting bases on which to judge him. We argued that these individuals are less stable in their support for the president, which in turn generates greater variance at the aggregate level. By contrast, these same developments confirm the president's opponents in their negative partisan assessments. Such individuals, we hypothesize, should be quite steadfast in their opposition, decreasing approval variance. However, with aggregate-level data alone we cannot conclude that the hypothesized mechanisms at the individual level are driving the observed variance in the aggregate model.[44]

    To explore these theoretical micro-foundations directly, we shift from the aggregate to the individual level and investigate whether respondents with conflicting partisan, economic and foreign policy considerations are indeed more volatile in their approval choices over time. While there is a dearth of panel data on presidential approval, the 1980 National Election Study, which asked the approval question of the same panel of respondents three times over the course of the election season, does afford an important

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[44] Indeed, there are other potential explanations for why aggregate-level approval variance increases or decreases in the manner observed. For example, the effect of combat casualties on presidential support among members of his party may be conditional. In some cases, his co-partisans may rally behind the 'Commander in Chief'; in others, they may remain steadfast in their previous levels of support; and in still other conditions, as we are now beginning to witness with the war in Iraq, some co-partisans may begin to drift away from their party leader. On average, we observe a modest decline, as captured in the model of mean approval; however, because the effect of casualties is conditional on other factors not captured in the model, we observe greater levels of uncertainty and variance around that mean estimate. If this alternative dynamic is driving aggregate level variance, then the observed variance is a result of model misspecification, not increased volatility in individual level support for the president. New theory would be needed to illuminate our understanding of how the impact of traditional explanatory variables, such as casualties and positive and negative events, on approval is contingent and varies across environmental and political conditions. We thank an anonymous reviewer for suggesting this alternative to us.

opportunity to examine whether respondents with conflicting considerations on which to judge the president's job performance were more volatile than their peers. Because the United States was not at war in 1980, we cannot perform a direct test of the relationships between casualties and variance observed at the aggregate level. However, we are able to examine how individuals' opinions on the two most important issues of the day – the state of the economy and the president's handling of the hostage crisis in Iran – interacted with partisanship to drive approval instability from survey to survey.

In total, over a third of the panel respondents changed their approval answer at least once during the three polls, while almost 10 per cent of respondents did so twice.[45] Our theory suggests that the probability of switching approval choices is not uniform across all citizens. Rather, respondents whose views on the economy and Iran conflicted with their partisan predispositions to support or oppose Carter should be the most unstable in their approval choices and consequently the most likely to switch.[46] By contrast, respondents whose views on the state of the economy and Carter's handling of the Iranian crisis reinforced their partisan predispositions should be least likely to exhibit volatility in their approval choices.

To measure respondents' opinions on these two dimensions on which they might evaluate Carter's job performance, we utilized two questions from the NES panel. The first question asked respondents whether their incomes had outpaced the cost of living in recent years of high inflation. For Democrats, a positive personal economic situation reinforces their partisan predispositions to support Jimmy Carter and should render their support more stable. By contrast, for Republicans a favourable personal economic outlook contrasts with their partisan incentives to oppose the sitting president. These Republicans should be more volatile in their approval choice and more susceptible to change over time than their partisan peers.

The second question investigated individuals' evaluations of Carter's handling of the single most important ongoing international development of 1980: the crisis in the Middle East precipitated by Iranian revolutionaries' seizure of hostages from the American Embassy in November 1979. Again, the effect of a respondent's support for Carter's handling of the Iranian crisis on his or her job approval volatility should be conditional on partisanship. For Democrats, support for Carter's Iran policy reinforces partisan incentives to rally behind the president and should decrease volatility. Conversely, Republicans who supported Carter's handling of the Iran crisis possess conflicting bases on which to evaluate him and the result should be greater volatility in their approval responses across polls.

Table 3 affords a preliminary analysis of the effect of holding an evaluation of Carter on each of these two dimensions that either reinforced or conflicted with respondents' partisan predispositions on the average number of switches within that group. The first column reports the difference in means between respondents who either were gaining economically or approved of Carter's handling of Iran and those who did not, disaggregated by partisanship. The second column presents a measure of statistical significance for each difference in means between the two groups.

Even this simple bivariate analysis supports many of our theoretical expectations. Republicans whose personal economic fortunes and evaluation of Carter's handling of the Iranian hostage crisis conflicted with their partisan predispositions switched their

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[45] These overall levels of volatility are consistent with other studies of approval instability across repeated panel surveys; see Kent Tedin, 'Change and Stability in Presidential Popularity at the Individual Level', *Public Opinion Quarterly*, 40 (1986), 555–62; Charles Ostrom and Dennis Simon, 'The President's Public', *American Journal of Political Science*, 32 (1988), 1096–119.

[46] These respondents' attitudes on the economy and Iran were constant across all three surveys.

TABLE 3   *Difference in Average Number of Approval Switches Between Conflicted and Non-Conflicted Partisans*

	Difference in means	t test (p-value)
GOP × Income Increased	0.10	0.15
Dem × Income Increased	−0.02	0.43
GOP × Approve of Iran Policy	0.06	0.36
Dem × Approve of Iran Policy	−0.23	0.02
GOP Very Conflicted	0.64	0.00
Dem Very Conflicted	0.13	0.07

Note: GOP = Republican.

approval choice more frequently across surveys than did their partisan peers. Conversely, Democrats who enjoyed rising incomes and who approved of Carter's dealings with Iran switched their approval choices fewer times than did their fellow Democrats. The last two rows in Table 3 push the analysis a step further and investigate whether individuals with conflicting opinions and partisan predispositions on both dimensions, whom we label 'very conflicted', switched their approval choices most frequently across surveys. Among Republicans, these individuals both approve of Carter's Middle East policy and enjoy rising incomes. The opposite marks conflicted Democrats. Theoretically, we expect such jarring incongruities between economic circumstances, opinions on foreign affairs and partisanship to produce heightened response instability. And the differences in means tests strongly support this hypothesis. Very conflicted Republicans switched over 0.6 more times on average than other Republicans, while very conflicted Democrats switched on average 0.13 more times than other Democrats across the three surveys.

As a further test, the ordered logit models in Table 4 examine the effect of being in each of these six groups on approval switching while controlling for a number of other factors including respondent partisanship, gender, race and education levels.[47] The first model examines the effect of holding economic and foreign policy views conflicting with partisan predispositions separately. The second model examines whether individuals who held views conflicting with their partisanship on both dimensions were especially likely to shift their opinion of President Carter.

Beginning with the economy, the coefficient for Republicans whose incomes had out-paced inflation is indeed positive as expected but misses conventional levels of statistical significance. However, the size of the estimated effect is substantively quite large. Simulations suggest that Republicans who had enjoyed personal economic success during Carter's tenure were 10 per cent more likely to switch their approval choices at least once over multiple surveys than were their partisan peers. By contrast, the coefficient for strong personal economic fortunes for Democrats is substantively trivial.

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[47] In the reported analysis, we define a switch as any change in approval response – including for example a shift from no opinion to support, or from disapproval to no opinion (less than 2 per cent of all switches were of this type). Although the number of approval switches is essentially a count variable, not an ordinal one, it has an upper bound of two, which raises concerns about whether a Poisson model is appropriate. However, replicating the analyses in Table 4 with a Poisson event count model yields virtually identical results in both specifications. Moreover, the predicted values from this model for all observations are within the bounds of 0 and 2. As a further robustness check, we also created a binary variant of the dependent variable (switchers v. non-switchers) and estimated the same specifications with a logit model. These models, too, yielded virtually identical results.

TABLE 4   *Ordered Logit Models of Approval Switches Across Three 1980 NES Surveys*

Independent variables	Model 1	Model 2
GOP × Income increased	0.36	–
	(0.31)	
Dem × Income increased	0.05	–
	(0.29)	
GOP × Approve of Iran policy	0.59*	–
	(0.45)	
Dem × Approve of Iran policy	−1.22***	–
	(0.36)	
GOP very conflicted	–	1.87***
		(0.50)
Dem very conflicted	–	0.60***
		(0.25)
Republican	−0.76***	−0.67***
	(0.23)	(0.21)
Democrat	−0.26	−0.22
	(0.23)	(0.22)
Education	0.03	0.03
	(0.04)	(0.04)
Male	−0.33*	−0.36**
	(0.17)	(0.17)
Black	0.52*	0.56**
	(0.33)	(0.32)
Log-likelihood	−528.18	−530.85
N	619	619

Note: All significance tests are one-tailed; all models report robust standard errors. GOP = Republican.
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

With respect to individuals' views on Iran, we again find that internal conflict leads to greater approval instability, while reinforcing foreign policy and partisan considerations decrease variance. Republicans who supported Carter's handling of the hostage crisis were considerably more conflicted and unstable in their approval judgements than were their fellow partisans. Simulations suggest that these Republicans were 15 per cent more likely to switch their approval at least once over the three surveys than were their peers who opposed Carter's stance towards Iran. By contrast, the effect for Democrats of approving of the administration's Iran policy on approval volatility was diametrically opposite. For these Democrats, the president's foreign policy actions reinforced their partisan predispositions to support him, and their likelihood of switching their approval responses one or more times decreased by 25 per cent accordingly.

The second model in Table 4 examines whether 'very conflicted' respondents, whose views on both dimensions conflicted with their partisan predisposition, were particularly likely to switch their approval choices across surveys. For both partisan groups, coefficient estimates, as seen in column 2, are strong and highly significant. These effects are also substantively impressive. Simulations suggest that 'very conflicted' Republicans were more than twice as likely to switch their evaluations of Carter at least once than were their co-partisans, while 'very conflicted' Democrats were 14 per cent more likely to change

their approval answer one or more times than their peers. Consistent with both theory and aggregate data analysis, collision between partisanship and 'the real world' breeds response instability.

Control variables perform similarly across models. We find strong evidence that Republicans were considerably less volatile across the three 1980 approval surveys than were Democrats. While this result is in conflict with our findings at the aggregate level, which suggested that on average across fifty years of presidential history approval variance is lowest among the president's co-partisans, the reasons for the divergence are clear. Democrats in 1980 were hopelessly torn between their partisan loyalties to Carter and external realities undermining Carter's presidency: stagflation, the energy crunch, Iran, and the Soviet invasion of Afghanistan first and foremost among them. All of these same developments, by contrast, reinforced Republicans' predispositions to oppose the incumbent president. As a result, the considerably lower levels of Republican volatility accord closely with theoretical predictions, if not with the aggregate level results for all presidencies.

Finally, the models provide no evidence that volatility varies with a respondent's educational attainment or with other measures of political information estimated in alternative specifications. The models do find some differences along demographic lines and suggest that African Americans were particularly volatile in their support for Carter, while men were less volatile on average in their approval choices than women.

In sum, results from these individual level analyses of approval volatility across the three 1980 NES panel approval queries strongly accord with theoretical expectations. Republicans whose personal economic fortunes and judgement of the president's performance in the Iran hostage crisis conflicted with their partisan predispositions to oppose the president were more volatile in their approval choices than their peers. Conversely, Democrats who supported Carter's Iran policies were considerably less volatile in their approval responses than were other Democrats who opposed the president's actions. Finally, Democrats and Republicans whose personal finances and foreign policy views both conflicted with their partisan predispositions were the most unstable in their approval decisions.

CONCLUSION

Public opinion scholars have long focused almost exclusively on changes in the mean of a time series at the expense of a systematic analysis of the factors driving changes in its variance. This omission is particularly striking in the expansive literature on public support for the president, given the clear political importance of approval volatility.

Recently, a few studies have begun to investigate changes in approval volatility, yet they have largely failed to explore how partisanship moderates many factors' influence on variance. The preceding analysis of approval volatility at both the individual and aggregate levels demonstrated the critical importance of alternative frames on which to evaluate the president that either conflict with or reinforce respondents' partisan predispositions. For the president's co-partisans, adverse developments, such as negative events and combat casualties, that conflict with their partisan attachments to the president render their opinions less stable and consequently inject greater uncertainty around the model's predictions for their aggregate level of support. Conversely, positive evaluative frames that reinforce partisan predispositions either have no effect or even decrease approval variance. For opposition party identifiers, the same negative developments decrease variance, while positive events increase the volatility of their support.

Future research should continue to examine the forces driving volatility in presidential approval at both the aggregate and individual levels, as well as in popular attitudes to other major issues of political import. For example, changes in the volatility of support for withdrawing American forces in Iraq or for various other aspects of the president's foreign and domestic programmes may be as substantively and politically important as changes in the mean.