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Source: *The American Political Science Review*, Vol. 72, No. 2 (Jun., 1978), pp. 506-522

Published by: [American Political Science Association](#)

Stable URL: <http://www.jstor.org/stable/1954107>

Accessed: 16/08/2013 12:08

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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*

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Within the last ten years a new conventional wisdom has surfaced in political science which tells us that presidents inexorably become less popular over time. Not much else matters. Neither the economy, nor the Vietnam War, not even Watergate seems to have had much independent effect on presidential popularity once time is taken into account. Before embracing these conclusions we need to reconsider the method that produced them. I argue that previous research too willingly accepted time as an explanatory variable, enshrouding it with theoretical meaning. To preserve its explanatory power alternative, substantive variables were shortchanged in their operational definitions and measurement. In this article I reverse the emphasis. Here, time is rejected as an explanatory variable and is employed only as a diagnostic indicator of the adequacy of the equations. A variety of alternative representations of real-world forces such as the economy and war are tested and some considerably improve the time-series correlation between the environment and presidential popularity. With these substantive variables I propose a simpler, if less glamorous, theory of presidential popularity consisting of two hypotheses: first, popularity is related to real events and conditions, and second, that it responds slowly to environmental change. Popularity is then both experiential and incremental. The findings for Presidents Truman through Nixon support this common-sense view. The Korean War (measured by U.S. casualties), the Vietnam War (measured by the number of bombing missions over North Vietnam and the U.S. war dead), the economy (especially six-month changes in consumer prices), Watergate, international "rally" events, and early term surges of approval all contribute independently to short-term fluctuations in presidential popularity. Moreover, as predicted, popularity appears to be autoregressive even when represented by an instrumental variables surrogate measure to minimize serial correlation. When the equations are specified in this way, time proves to be unnecessary in order to explain trends in presidential popularity.

Q. Could you tell me, please, the basis for your optimism going into the election? I mean, why are you confident that you will not only be your party's nominee, beating Reagan, and why you'll beat the Democrats?

A. You couldn't have asked a better question, Wally. I'm happy and I'm optimistic about the nomination and the election because I am convinced the American people feel that we've been successful in foreign policy, the Middle East, Europe, etc. I'm convinced that we're well on the road to a good economic situation in 1975, so when you

combine peace and prosperity, any incumbent president ought to be very happy.

Televised Press Conference with President Ford, November 3, 1975

Time may heal lovers' broken hearts, but it only opens new wounds for presidents. This is the main finding of several studies on the public prestige of presidents. Since the monthly opinion surveys on the president's performance began in the mid-1930s, every president except Eisenhower has left office less popular than when he entered. Regardless of what other variables are taken into account, the length of time since election or reelection to office uncannily remains the strongest correlate of the president's monthly trend in public approval. Why should this variable seemingly unrelated to a president's performance have such a powerful influence on popularity? This question has resulted in some highly imaginative theorizing.

John Mueller's study of presidential popu-

*There are many people to thank for their contribution to this paper at different stages of its development. I am especially indebted to John Mueller for giving me the popularity data. For their helpful comments I wish to thank Neal Beck, Robert Holt, Frank Lerman, H. Douglas Price, Craig Swan, W. Phillips Shively, Ed Tufte, and Aaron Wildavsky.

larity from Truman through Johnson is the most compelling work on the subject to date.¹ Since the findings presented here dispute those of Mueller, it is important to examine his analysis in some detail. Mueller relies heavily on time as his chief explanatory variable which requires that he identify some theoretically meaningful variable which time represents. He borrows a theme from Downs and argues that the president frequently loses public support even when his policy follows the preferences of the majority of the citizenry because the minority feels more intensely about the issue.² If one assumes that, as a president makes decisions he alienates more citizens than he pleases, it follows that the longer the president is in office, the less popular he becomes. Following Downs, Mueller calls this the "coalition-of-minorities" effect. If the president runs for a second term, he rebuilds his electoral coalition and the downward drift begins all over again. Time, Mueller argues, reflects presidential decision making, and the secular decline of approval reflects the accumulation of presidential decisions. The plausibility of this explanation is enhanced by the one president who successfully maintained his popularity. It may not be coincidental that among recent presidents Eisenhower championed the fewest causes or policies.³

Having suggested a theoretical underpinning for time, Mueller employs it to the fullest in explaining monthly variations in popularity. Each president's popularity is allowed to start at a different level and to decline at its own rate. This considerably improves the explanatory power of time. Next he permits different trends for each term of the two-term presidents

and arrives at the equation presented in Table 1. If one defines and tailors the "coalition-of-minorities" variable in this way, any trend in the president's popularity will be measured by time which, not surprisingly, now explains nearly 80 percent of the variance in popularity. But what has been explained? All we have in the end is a set of straight lines measuring the separate trends for each term. Does the steep decline in President Johnson's popularity during his second term ($b = -8.13$) mean simply that he was making more decisions than the other presidents, or does it reflect the special effect of the Vietnam War? Since whatever trend is present in the president's public standing is obviously captured by time, there is little variance left to be explained by more substantive variables. In Johnson's case, for instance, after controlling for the downward trend, Mueller declares that "the Vietnam War had no independent impact on President Johnson's

Table 1. Mueller's Final Equation
Using Time as an Explanatory Variable
(Unstandardized Regression Coefficients)^a

Intercept	72.38
Independent variables	
Rally round the flag	- 6.17
Economic slump	- 3.72
Dummy variables for terms	
Truman, second	-12.42
Eisenhower, first	- 2.41
Eisenhower, second	- 4.35
Kennedy	7.18
Johnson, first	4.02
Johnson, second	- 1.06
Coalition-of-minorities measured in years for each term	
Truman, first	- 8.92
Truman, second	- 2.82
Eisenhower, first	2.58
Eisenhower, second	0.22
Kennedy	- 4.75
Johnson, first	2.53
Johnson, second	- 8.13
Dummy variables for wars	
Korea	-18.20
Vietnam	0.01
$R^2 =$.86

¹John Mueller, "Presidential Popularity from Truman to Johnson," *American Political Science Review*, 64 (March 1970), 18-34.

²Mueller, 20; *An Economic Theory of Democracy*, ed. Anthony Downs (New York: Harper and Row, 1957), pp. 55-60. Mueller also notes "minus-sum games" which are described by Aaron Wildavsky in "The Empty-head Blues: Black Rebellion and White Reaction," *The Public Interest*, 11 (Spring 1968), 3-16.

³In 1956 when respondents were asked in the open-ended SRC interviews what they liked and disliked about Eisenhower, the ratio of personal evaluations to political judgments among positive responses was 2.74 to 1. This compares with ratios of 1.35 and 1.33 to 1 for Johnson in 1964 and Nixon in 1968, respectively. From James A. Stimson, "Public Support for American Presidents: A Cyclical Model," mimeographed, 1974, Table 2.

^aFrom John Mueller, *War, Presidents and Public Opinion* (New York: Wiley, 1973), Table 9.3, p. 224. It should be noted that these estimates differ from those reported in Mueller's *APSR* article and lend less support for the coalition-of-minorities thesis than do the earlier figures. Rather than becoming less popular, Johnson during his first term apparently increased his public support. See Mueller, "Presidential Popularity from Truman to Johnson," *American Political Science Review*, 64 (March 1970), 28.

popularity at all.”⁴ Of the various substantive short-run forces that should have a continuing effect on popularity, Mueller found only the Korean War during Truman’s administration and increasing unemployment during Eisenhower’s tenure correlated with the president’s popularity. Hibbs reanalyzed these data, correcting for serial correlation in Mueller’s estimates, and dismissed even these substantive relationships as unimportant.⁵

James Stimson has recently reexamined time, and although it remains the primary determinant of presidential popularity, its functional form is different, and a wholly different explanation for the relationship is proposed. While Mueller reports a linear relationship for time, Stimson finds that a quadratic relationship fits better for each term of every president except Kennedy.⁶ For a while presidents become less popular in a near-linear fashion, but eventually the decline bottoms out and their popularity may even improve although not to its former high level. Stimson suggests that Kennedy’s popularity, for which a linear trend works better, was about to level off at the time of his assassination.

To explain this relationship Stimson discards Mueller’s political explanation and relies instead on a psychological model of public opinion. He identifies persons who are “less partisan, less knowledgeable, and less involved in politics” as the segment of the public which should be most “fickle” in its support of a president.⁷ They initially hold a “naive admiration” for the new president because of his campaign promises and the uncritical media treatment during the honeymoon period. The “unrealistic expectations are followed by an inexorable disillusionment,” and thus the president’s popularity declines. Stimson views this pattern as inherent in the setting and largely beyond the president’s influence, and therefore differs sharply with Mueller who views the president’s

decline as a direct result of decision making. Stimson’s explanation for the small gain in public approval at the end of the president’s term depends on whether he seeks reelection or is a lame duck. In the former instance the president can stage events and advocate enticing policies to generate campaign momentum. If the president is about to leave office, Stimson suggests that the “disillusioned cynic perhaps recovers some of his early admiration when the president’s motives are no longer open to cynical interpretation.”⁸

Using a quadratic equation to test his curvilinear model, Stimson is able to explain over 87 percent of the variance in popularity with time. This is done, as with Mueller, by employing the statistical fit which works best for each term of each president. If the same statistical relationship were assigned all terms, adjusting only for individual differences among presidents in their initial level of approval, the quadratic model would explain about half of the variance.⁹ Thus, the special tailoring of the different trend lines to each term is important for the performance of the trend variable. Again Mueller’s war variable and unemployment rate have negligible additional effect on Stimson’s curvilinear popularity trends once time is taken into account.

The great difference between Mueller’s and Stimson’s explanations reveals the slippery nature of time. Time as a variable has no inherent theoretical meaning; time can be used to confirm any theory’s validity which predicts that a president’s popularity will tend to decline from its initial high level. If the “coalition-of-minorities” and “expectation-disillusionment-forgiveness” theories are to be persuasive, more compelling evidence is needed. The “coalition-of-minorities” could be more substantively measured by an index of the number and type of specific presidential policies. Another strategy might be to find different “minorities” dropping out on different occasions. Did President Kennedy lose the support of the business community, for example, during the steel price crisis in 1962? Stimson’s thesis rests primarily on the behavior of an identifiable group. Finding change in approval in the predicted direction more pronounced for citi-

⁴Mueller, 28. *Italics in original.*

⁵Douglas A. Hibbs, “Problems of Statistical Estimation and Causal Inference in Dynamic, Time-Series Regression Models,” paper prepared for the annual meeting of the American Political Science Association, Washington, D.C., 1972.

⁶Stimson, 6, Figures 1, 2. Also see James A. Stimson and Caroline LeGette, “Public Support for American Presidents: Does Anything But Time Matter?” paper presented at the annual meeting of the American Political Science Association, Washington, D.C., 1975.

⁷Stimson, 8.

⁸Stimson, 11.

⁹Stimson’s final preference to follow Mueller’s strategy of letting popularity for each term change at its own pace results in a table similar to Table 1 except the estimates are quadratic, rather than linear. See Stimson’s Table 4.

zens who are poorly informed and who participate less would make his theory far more persuasive.

A third interpretation of time—and the one preferred here—is that time measures time. Measuring a president's trend in popularity is descriptive rather than explanatory. A variety of short-run forces could produce a downward (or upward) trend in approval; time is a summary measure of these forces. As such it cannot serve as a discrete measure of any one of them. As more substantive variables are employed to explain variations in approval, time can usefully serve as a diagnostic to determine whether all relevant trend-producing variables have been identified. If the trend term remains after the effects of other forces have been controlled, this may indicate that there are either additional variables present in the environment which have been left out of analysis or that the variables under study have been improperly measured.¹⁰

Later I shall propose and test an alternative theory of the short-term movement of the president's popularity which suggests why presidents tend to become less popular. It is valuable for the subsequent analysis to ask here why such seemingly consequential forces as the Vietnam War and the state of the economy fail to show up in Mueller's and Stimson's studies as important determinants of popularity. The presence of the trend term in their regression equations supplies part of the answer, but I suspect that the failure of these variables also reflects the way in which they are measured. My complaint with their work is not that they have studied inappropriate events and conditions; to the contrary, we shall investigate the effects of precisely the same environmental forces. Rather my disagreement concerns how these variables are measured and related to popularity.

Measuring the Independent Variables. Often what appear to be and are treated as purely technical, methodological choices in defining variables are in fact substantive decisions which implicitly reflect investigators' assumptions and beliefs about how these variables operate in the real world. For each substantive variable in their analyses there is reasonable doubt as to whether it has been adequately measured. In

this section we shall scrutinize their operational definitions of the independent variables in some detail and test alternative measurements which seem to me to reflect more reasonable assumptions about the real world. Not only will this exercise provide better representations of environmental forces for the more elaborate analysis in the next section, but it should also yield a better description of the process by which experience is converted into political judgments. The environmental forces can be categorized under three headings: chronic problems, the economy, and short-term surge.

Chronic Problems. During the period under study three major chronic problems appeared to plague the incumbent president: Korea, Vietnam, and Watergate. Because the Korean and Vietnam Wars, as measured by most indices such as the number of American casualties, government expenditures, or visibility in the media, grew both in size and in political importance, they should be closely correlated with the trend term.¹¹ If the wars are measured as continuous variables and placed in the same equation with time, they would be so highly multicollinear, according to Mueller, that statistically meaningful estimates of their relative strengths would be impossible.¹² Mueller resolves this problem by measuring war as a qualitative, dummy variable. The variable becomes the "presence of war" and it is either switched "on" or "off." In defining war as dichotomous, Mueller tacitly decides to ignore the politically most relevant aspect of the Vietnam and Korean Wars, that is, their increasingly negative effect on the president's popularity. A dichotomous index assumes that their impact was the same from beginning to end. By 1968 Vietnam appears to have virtually destroyed Johnson's public prestige, quite unlike its effect during the summer of 1965. Although Vietnam's increasing significance for Johnson's

¹¹Richard Brody and Benjamin I. Page performed a content analysis of daily news stories and found that Vietnam news had the greatest impact on both Johnson's and Nixon's popularity. "The Impact of Events on Presidential Popularity: The Johnson and Nixon Administrations," in *Perspectives on the Presidency*, ed. Aaron Wildavsky (Boston: Little, Brown, 1975), pp. 143–45.

¹²Mueller, 23–24; Mueller only considers cumulative war indices such as the number of U.S. war casualties since the war began. Using cumulative totals rather than each month's increment obviously increases the degree of multicollinearity with time. Later we shall examine noncumulative indices of the war.

¹⁰For an interesting discussion on the value of time as a diagnostic variable, see Potluri Rao and Roger LeRoy Miller, *Applied Econometrics* (Belmont, Calif.: Wadsworth, 1971), pp. 99–104.

popularity goes unmeasured by the dummy variable, it is not wholly ignored. The impact of the war is conveniently picked up by the trend term representing the "coalition-of-minorities." Given these procedures, it is not at all surprising that the war variable fails to show up as an important determinant, while "coalition-of-minorities" does.

Since time is being intentionally ignored as a substantive variable in the present study, we do not face Mueller's dilemma of multicollinearity and are free to look for variables which accurately measure each war's effects without being constrained by their relationship with time. For the Korean War I selected the number of U.S. casualties during the month to index the war's intensity.¹³ Such a measure does not require public scrutiny of the casualty charts to be a meaningful cause of declining popularity.¹⁴ Instead casualty figures are designed to index the overall level of military conflict. After its initial phase, as the war continues to heat up, public support should drop off. As expected, this variable correlates at $-.68$ with popularity which indicates that the more casualties incurred in Korea, the lower Truman's public support became.¹⁵

For the Vietnam War two variables are available for measuring the progress of the war. The first is the number of monthly U.S. war dead which (like the Korean casualties variable) indexes the buildup of the ground war in the mid-1960s as well as the subsequent Vietnamization program with its reduction of U.S. combat responsibility. The second variable is the number of bombing missions over North Vietnam during the month which measures another stage of the war's intensification.¹⁶

¹³The monthly war casualties are drawn from Figure 2.1 of John Mueller, *War, Presidents and Public Opinion* (New York: Wiley, 1973), p. 36.

¹⁴Mueller reports survey evidence showing, in fact, that the public has generally inaccurate knowledge about war casualties. Mueller, *War*, pp. 35–62.

¹⁵The correlation is for the logarithmic transformation (base 10) of the casualty index. This works marginally better than the untransformed variable suggesting that comparatively small numbers of U.S. casualties during the early stage of the Korean War had a disproportionate negative impact on President Truman's popularity. Because the job performance question was asked intermittently between 1945 and 1949 and because data for some of the other independent variables are missing during this period the analysis will be restricted to Truman's second term commencing in January, 1949.

¹⁶Both of these indices are drawn from Jeffrey

These variables correlate with Johnson's popularity at $-.78$ and $-.84$ respectively, and together they explain 77 percent of the variance in approval. Although they are rather strongly correlated with each other at $.69$, each contributes independently to popularity.

Stimson retains Mueller's war dummies and apparently follows the same procedure for Watergate. After employing the best-fitting curve, he notes there are no additional "discontinuities" in the downward trend after McCord's letter on the Saturday night massacre. I tested alternatives to the dichotomous variable but each presented special problems and none performed any better than a Watergate dummy variable which correlates with Nixon's popularity at a remarkably strong $-.89$.¹⁷

The Economy. Given the role of modern government and in particular the modern presidency in monitoring and regulating the economy, it would be surprising to find that the public ignores economic conditions in evaluating the current incumbent's job performance. After all, as Katona observes,

Whenever unfavorable developments in the economy are discussed, the American people speak of the responsibilities of the government. The remedies for unemployment, recession, or inflation are to be found, in the opinion of most people, in the government's "doing something."¹⁸

Mueller's analysis, however, discovered that only for Eisenhower did economic conditions affect his popularity in the hypothesized manner. Dissatisfied with the overall $+.39$ correlation between the current unemployment rate and popularity which is in the wrong direction, Mueller recalculated this variable as the difference between the current level of unemploy-

Milstein, *Dynamics of the Vietnam War* (Columbus: Ohio State University Press, 1974), Appendix.

¹⁷After Watergate became recognized as a serious threat to President Nixon, the Gallup Poll began asking respondents their opinion about Nixon's involvement. Did he participate in the burglary and/or the cover up, just know about it, or "did he have no known knowledge about the bugging and spoke up as soon as he learned about it?" Over the year and a half period during which the question was asked the percent answering "no knowledge" shrunk from 23 percent to 11 percent. *The Gallup Opinion Index*, September, 1974, p. 16. The percentage believing the president was innocent correlated at $.61$ with Nixon's popularity.

¹⁸George Katona, *The Mass Consumption Society* (New York: McGraw-Hill, 1964), p. 143.

ment and the level when the president's term began. Still he found that the economy did not systematically contribute to popularity. Not wholly persuaded by these findings, Mueller closed his article with the suggestion that different economic indicators and different measurement techniques might work better.¹⁹ His afterthought clearly seems correct.

A variable of such theoretical importance deserves more careful consideration. Three monthly economic indices have been tested. In addition to the unemployment rate, I examined the monthly consumer price index and total personal income. This last variable is similar to the one successfully employed by Kramer, Tufte, and Bloom and Price in their separate research into the economic determinants of congressional voting.²⁰ Largely duplicating the effects of unemployment and inflation, total personal income performs weakly under statistical controls and therefore will be dropped from subsequent analysis.

The underlying variable which these "hard" economic indicators represent is the public's perception of the economy. Mueller persuasively argues that public perceptions of how the economy is changing is more important in evaluating the president's performance than is the absolute level of the unemployment rate or consumer price index. A six-percent unemployment rate may benefit an incumbent president if it had been hovering around a much higher figure or tarnish his prestige if it represents a significant rise. If we accept that *change* in these monthly indices more closely parallels the public's evaluative process, the central issue becomes one of discovering the appropriate time intervals for measuring this change. Mueller prefers to use the unemployment rate at the beginning of the president's term as the benchmark for public evaluations. While this base has the attractive quality of being the first point of the president's responsibility, such a comparison requires that the public be able to recall

what the unemployment (or inflation) rate was as long as four years ago. Perhaps his failure to find meaningful relationships between unemployment and popularity reflects this feature of the operational definition. The public more likely evaluates the relative change in the economy over a much briefer interval.

To find a more proximate benchmark for economic evaluations, I have tested several different moving average comparisons.²¹ Unemployment and consumer prices generally correlated better with popularity when change was measured over a six-month period than for other time spans. To test their validity on an external criterion I correlated these indices with the public's perceptions of the economy. The national Harris survey taken during a three-year period from 1971 until early 1974 asked respondents if they thought the U.S. was in a recession and whether prices were rising more or less rapidly than a year ago. In Table 2 we see that six-month changes in unemployment and consumer prices are closely correlated with perceptions of the current economic conditions.

²¹Three different averages were tested for unemployment and consumer prices: 2, 3, 4; 5, 6, 7; and 11, 12, 13 previous month averages. The six-month moving average was found to work best. This agrees with Henry C. Kenski's report after testing a large number of economic measures. "The Impact of Economic Conditions on Presidential Popularity," *Journal of Politics*, 39 (August 1977), 764-73.

Table 2. The Correlation of "Hard" Economic Indicators with the Public's Perception of the Economy

	Percent Change in Index Over 6 Months	
	Consumer Prices	Unemployment Rate
Prices rising more rapidly ^a	.84	.05
In recession ^b (N=16)	.07	.64

^a"Do you feel that prices of most things you buy are rising more rapidly than a year ago, about as rapidly as they were then, less rapidly than a year ago, or are they going down?" Scored percent saying "more rapidly."

^b"Do you feel the country is in a recession today or not?"

Responses to these questions were obtained from monthly publications of *Current Opinion* in 1973 and January, 1974.

¹⁹Mueller, *War*, p. 238.

²⁰Their studies used real income which is not available monthly; see Gerald Kramer, "Short-term Fluctuations in U.S. Voting Behavior, 1896-1964," *American Political Science Review*, 65 (March 1971), 131-43; Edward Tufte, "Determinants of Outcomes of Mid-term Congressional Elections," *American Political Science Review*, 69 (December 1975), 812-26; Howard S. Bloom and H. Douglas Price, "Voter Response to Short-run Economic Conditions: The Asymmetric Effect of Prosperity and Recession," *American Political Science Review*, 69 (December 1975), 1240-54.

When unemployment is measured by percent change over the last six months rather than simply its current rate, it generally behaves better in its zero-order relationship with popularity. The improvement is not uniform, however. In Table 3 the signs of the transformed rate run in the wrong direction for the Truman and Nixon ratings. Under adequate statistical controls, the strong positive correlation of change in unemployment with Truman's popularity is eliminated.²² Even for Kennedy the bivariate correlations fail to reveal the full impact of this transformation on the relationship. In the regression equations to be examined later, percent change in unemployment emerges as an important correlate of Kennedy's popularity. Transforming unemployment has the most dramatic effect on Johnson's popularity where the correlation shifts from strongly positive to negative.

The consumer price index is also measured in percent change since each month's index will be (almost by definition) some increment larger than the one for the previous month. Change in the consumer prices appears in the table to be a primary candidate for explaining each president's popularity.²³ During the 1950s and early 1960s the U.S. enjoyed an annual inflation rate of near 2 percent. As inflation has grown at a faster pace over the last ten years, so too has its apparent influence on the public prestige of presidents according to the large correlations for Johnson and Nixon.

²²This occurs when controlling for Korean War casualties, Early Term effect, and Rally, all of which are examined below. In the final regression equations in Table 5, change in unemployment is omitted for Truman since it fails to approach statistical significance.

²³Kenski also finds inflation to be a probable cause of popularity. See "Impact of Economic Conditions," 25-27.

Rather than being an unimportant contributor to popularity as Mueller and Stimson found, the state of the economy appears to be a hardy variable, capable of explaining a significant proportion of the variance in popularity. Finding that a six-month time perspective of the economy is most closely correlated with popularity has a certain practical significance as well. For example, the economy's impact on a president's reelection chances in November probably reflects the public's comparison of the economy at the election with conditions during the preceding spring. No wonder President Ford's economic advisers were complaining in the spring of 1976 that the Bureau of Labor Statistics' seasonal adjustments inappropriately made unemployment look as though it would worsen during the summer.²⁴

Short-Term Surge. Students of public opinion have noticed over the years that during periods of international crisis the public tends to rally behind the president. Nelson Polsby summarizes the evidence: "Invariably, the popular response to a president during international crisis is favorable, regardless of the wisdom of the policies he pursues."²⁵ As Kennedy noted after the Bay of Pigs incident, "The worse I do, the more popular I get." If the economy affects popularity, it will probably do so gradually over

²⁴A Bureau of Labor Statistics official recalled, "The Council of Economic Advisors felt there was too much good news earlier in the year and too much deterioration later in the year." Edward Cowan, "Jobless Rate: Elusive Statistic," *New York Times*, January 13, 1978, p. A-11.

²⁵Nelson Polsby, *Congress and the Presidency* (Englewood Cliffs, N.J.: Prentice-Hall, 1964), p. 25. In the second edition he lists the "before-after" effects of international crises on the president's popularity, p. 44, Table 1. See also Mueller, "Presidential Popularity," 21.

Table 3. Zero-order Correlations of Unemployment and Consumer Prices with Presidential Popularity

	Unemployment Rate	Percent Change Over 6 Months:	
		Unemployment	Consumer Prices
Truman*	.45	.63	-.64
Eisenhower	-.64	-.26	-.22
Kennedy	.48	-.36	-.51
Johnson	.88	-.19	-.83
Nixon	-.28	.11	-.82

*Because of missing observations, all relationships reported here and in subsequent tables for Truman are for his second term only.

an extended period. Rally events, on the other hand, should produce immediate bursts of support but of short duration. Explaining the significant bumps on the popularity trend should not only improve the overall explanatory power of our equations but also enhance the influence of those variables which are durable contributors to popularity.

Mueller developed a useful list of rally events which were international in origin, directly involved the United States, and were "specific, dramatic, and sharply focused."²⁶ He also included presidential inaugurations among the rally events for "analytic convenience." As we shall see the inclusion of what he recognized to be "arbitrarily designated" rally points has a dramatic effect on the explanatory power of this variable.²⁷ In order to ascertain the contemporary public salience of these events, I performed a systematic content analysis of the front pages of three metropolitan newspapers for the week in which each event received maximum coverage. Almost all of the events made the front page for at least five consecutive days, which would seem to be sufficient exposure to guarantee widespread public awareness.²⁸

Mueller estimated the effects of these events for each month's approval rating as the length of time since the last rally point. By this method a high score for a given month means that there has been no recent event. While every observation after the first rally event is given some value, this still leaves the problem of what values to assign those periods before the first event occurs. Mueller found it necessary to begin *each* term as a new rally point, which worked to inflate the correlation of this variable with popularity since at the beginning of

his term the president enjoys widespread public approval.²⁹

In order to avoid confusing the effects of international events from the early term "halo," Mueller's coding procedure for this variable has been altered in two ways. First, we shall assume that rally events have a decreasing impact on popularity over a five-month period only. After that period their effect is assumed to be nil and the rally variable is scored zero.³⁰ Second, the rally point designated at the beginning of each term has been dropped and only international events are used. The new rally variable takes on a value of zero until the first event occurs. Certainly something is happening to popularity at the outset of the president's term which needs to be tapped, but to include it as part of the rally variable only prevents us from appreciating the effects of international affairs on the president's popularity.

In Table 4 we can examine the effects of each of these reforms of the rally variable on its correlation with popularity. Except for some reduction in the correlation for Presidents Kennedy and Nixon, limiting rally events to five months (column 2) has little substantive impact on the relationships. (Note that the change from a negative to positive sign from column 1 to 2 in Table 4 is wholly an artifact of the scoring procedure.) When the inauguration rally points are eliminated (see column 3), the relationships are radically altered. For

²⁹Mueller, "Presidential Popularity," 22. Technically, it was not necessary for Mueller to begin each term as a rally point. For the second term the count since the last rally point could have continued uninterrupted by the reelection of the president. Mueller's rally variable correlates at $-.11$ with popularity.

³⁰Such a procedure is admittedly arbitrary. Several other scoring procedures were tested but without important changes in the relationships. It is interesting that a linear decline in the effect of an event over five months works as well as the learning curve.

²⁶Mueller, "Presidential Popularity," 21.

²⁷Mueller, "Presidential Popularity," 22.

²⁸The three newspapers examined were the *Atlanta Constitution*, the *Chicago Tribune*, and the *San Francisco Chronicle*.

Table 4. Zero-order Correlations of Rally and Early Term Variables with Presidential Popularity

	Mueller's Rally	Rally Rescored	New Rally	Early Term
Truman	-.31	.34	-.01	.67
Eisenhower	-.03	.10	-.01	.36
Kennedy	-.85	.68	.60	.20
Johnson	-.09	.01	-.31	.59
Nixon	-.78	.52	.41	.38

Johnson, and to a lesser degree for Truman and Eisenhower, the correlations contradict the hypothesis. These negative correlations may mean that the rally events had a net negative impact on these presidents' popularity. Or it may simply be that they occurred more often during periods of relatively low popularity. Only for Kennedy and Nixon do these zero-order correlations suggest the benign effects of international events on the president's popularity. Although a final judgment must await examination of the relationships under appropriate controls, it may well be that not all "specific, dramatic, and sharply focused" international developments benefit the incumbent president.

In order to measure the early administration surge in popularity, we have created a separate Early Term variable which begins with a value of 6 and declines one unit per month, becoming 0 as the president begins his second six months in office. In Table 4 (column 4) this modestly conceived variable accounts for a prominent share of the variance in popularity.³¹

Presidents begin office as ambiguous stimulus objects. Experimental and field research in social psychology strongly suggests that ambiguity fosters positivity.³² As the president becomes better known, citizens form judgments on the basis of more specific and contextual information. This argument fails, however, to explain why the same pattern reemerges for the second term as well. The public presumably now has ample information on which to base opinions.

Another explanation which comes via a different body of experimental research in social psychology is that the surge of approval at the outset of the term represents a "bandwagon" or, as some have preferred, a "fait accompli" effect. In a well-known study of student responses to the 1952 election, I. H. Paul concluded that "people's impressions of the personalities of presidential candidates

change following the election and this change involves an increase in the attractiveness of the winner."³³ Other studies in subsequent elections employing different test instruments have corroborated Paul's early finding. Even when the winner is an incumbent, immediately following his reelection his earlier detractors become more approving.³⁴

Also, for Presidents Truman and Johnson for whom these correlations are very large, there appears to have been the special effect of succeeding a president who died in office. A literature has emerged since the Kennedy assassination which agrees in finding a highly emotional public response following his death.³⁵ It is not unlikely that these feelings spill over into initial evaluations of the new president. Whatever the source, clearly the president begins his term with widespread public admiration.

Problems With the New Conventional Wisdom.

Current research on presidential popularity is marred by several analytic shortcomings. First, there is the problem of ad hoc theorizing. Time is found to correlate closely with popularity and with some tailoring can be made to produce extraordinarily large R^2 's. In order to give these relationships substantive import, theories surfaced. But on closer inspection we find that Mueller's "coalition-of-minorities" and Stimson's "attraction-repulsion" theories do not explain much about the behavior of presidential popularity beyond the information used to construct them. Neither theory explains why popularity declines (or improves) at different rates for different presidents and even for different terms.

The second problem is misplaced emphasis.

³³I. H. Paul, "Impressions of Personality, Authoritarianism, and the *Fait Accompli* Effect," *Journal of Abnormal and Social Psychology*, 53 (November 1956), 341. For a summary of the prominent findings in this area of research see Sears and Whitney, *Political Persuasion*, pp. 12-17.

³⁴Lynn R. Anderson and Alan R. Bass, "Some Effects of Victory or Defeat Upon Perception of Political Candidates," *Journal of Social Psychology*, 73 (October 1967), 227-40; Bertram H. Raven and Philip S. Gallo, "The Effects of Nominating Conventions, Elections, and Reference Group Identification upon the Perception of Political Figures," *Human Relations*, 18 (August 1965), 217-29.

³⁵Martha Wolfenstein and Gilbert Kliman, *Children and the Death of a President* (Garden City, N.J.: Doubleday, 1965), and Harold Orlansky, "Reactions to the Death of President Roosevelt," *Journal of Social Psychology*, 26 (November 1947), 225-66.

³¹The index is crude in that it picks up whatever is occurring to the president's popularity during the first six months. It ignores the possibility that some "early term" periods will last longer than others. For example, the surge in support at the outset of the second term may be of shorter duration than for the first. The coefficient for Early Term will represent an "average" effect for these two periods, perhaps being too weak for the first and too strong for the second.

³²David O. Sears and Richard E. Whitney, *Political Persuasion* (Morristown, N.J.: General Learning, 1973), pp. 12-17.

When time is emphasized as the primary explanatory variable, other substantive variables are crudely defined to avoid the problem of multicollinearity. It is especially inappropriate to conclude from the failure of these intentionally crude operational definitions that the real-world forces are unimportant. Such a procedure is about the only way the Vietnam War, for example, could fail to be a primary determinant of Johnson's prestige.

The third problem is inadequate measurement. Although including time in the equations will reduce the strength of the estimates for such variables as the economy and war, with proper measurement significant relationships may still have resulted. We have seen that when reasonably measured, the real world does in fact shape public evaluations of the country's most prominent political leader.

Back to the Old Conventional Wisdom

The President helps people make sense of politics. Congress is a tangle of committees, the bureaucracy is a maze of agencies. The President is one man trying to do a job—a picture much more understandable to the mass of people who find themselves in the same boat. Furthermore, he is the top man. He ought to know what is going on and set it right. So when the economy goes sour, or war drags on, or domestic violence erupts, the President is available to take the blame. Then when things go right, it seems the President must have had a hand in it.³⁶

The traditional view of close observers of the presidency described in the above passage is supported by the simple bivariate relationships reported in the preceding section. Having rejected Mueller's and Stimson's novel theories of popularity for conceptual and methodological reasons, we return to a more realistic, if somewhat less glamorous, view of presidential popularity. The model we shall examine in this article contains two propositions (or hypotheses) which to a varying degree are founded on intuitive or common-sense ideas about how the president's popularity behaves.

Proposition 1. *Short-term fluctuations in the president's popularity will be largely determined by contemporary events and conditions.* Unlike the "coalition-of-minorities" theory, it is not so much presidential decision making to which the public responds as it is the results of those decisions. Outcomes in the form of

current events and conditions are more visible, easier to grasp, and can be more readily appreciated by the citizen in their impact on personal welfare and values. By examining outcomes such as increased war casualties or the price of food, the citizen obtains better information at a lower cost. Increasingly expensive gasoline can be more easily discerned and evaluated than can a presidential decision to veto a price ceiling on the production of "old" domestic crude oil. The evidence presented above suggests that changing economic conditions, war, international crises, and scandal are the types of outcomes which the public examines in forming evaluations of the president's performance.

Although judging the president according to one's satisfaction with current conditions may reduce information costs, this judgment may sometimes be misdirected. The president frequently does not have sufficient control over events to produce favorable outcomes to problems for which he is likely to be held responsible. Even so, such a criterion creates an important functional benefit for the political system. The president's realization of his assigned responsibility should prompt the system's most powerful actor to engage in problem solving. The president needs to know that there is little advantage in ignoring problems even when they originate elsewhere.

Proposition 2. *The president's current popularity reflects the level of approval during the preceding month.* This proposition suggests that the president's popularity will respond sluggishly to environmental forces. During the brief intervals between observations, many citizens will maintain their assessment of the president's performance regardless of intervening events. The built-in inertia of popularity is revealed by the fact that the best information available for predicting an individual's future evaluation of the president is his or her current evaluation. This continuity will be reflected in marginal shifts in the aggregate opinion as well. Perhaps this explains why Stimson fails to find that any of the Watergate disclosures or incidents had a noticeable impact on Nixon's popularity. Where one might expect to discover a sudden bump or dip in the trend reflecting a new disclosure, such as indictment or conviction of Watergate participants, or perhaps a presidential denial of alleged involvement, Stimson finds only a continuation of a smooth and sharp downward trend.³⁷

³⁶James D. Barber, *Presidential Character* (Englewood Cliffs, N.J.: Prentice-Hall, 1972), p. 5.

³⁷Stimson, 30–33.

In statistical parlance such a relationship is described as autoregressive, and it can be measured by including the previous month's popularity in the regression equations as one of the independent variables among the environmental forces. If popularity does behave autoregressively, whatever forces contributed to change in popularity in the recent past will continue to be felt through the previous month's popularity. As diagrammed below, previous environmental conditions, x at t_2 and to a lesser degree at t_1 , will influence current popularity, P_{t3} , through the previous month's score, P_{t2} . In this way, the lag of popularity acquires the variance produced by those exogenous (environmental) variables which influenced popularity in the past.³⁸

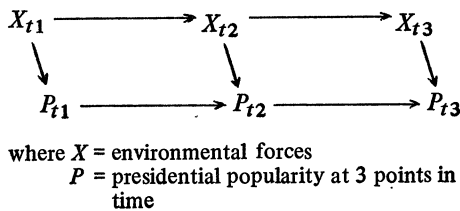


Figure 1. Autoregressive Model of Presidential Popularity

Unfortunately, there are a couple of special problems in estimating the statistical relationships for an autoregressive model. For one, the normal practice of evaluating the relative merits of alternative estimation equations by comparing their overall explanatory power (R^2) can be misleading since the lag popularity variable will pick up the effects of any variables inappropriately left out of the analysis. We can safely assume that the greater the number and importance of the environmental forces omitted from the regression equations, the greater the strength of the lag term. The general dictum to specify one's equations fully is especially important when examining autoregressive models.

³⁸Brody and Page view presidential popularity as autoregressive as well and incorporate and lagged variable into their analysis. In fact it is this variable and not their news indices which appears to explain most of the variance in popularity. Their rationale for treating popularity as autoregressive is somewhat different from the one employed here. To them it represents a base which in the absence of intervening events dictates the next month's approval level. Brody and Page do not consider the issue of serial correlation; "The Impact of Events. . ."

A related problem common to all time-series analysis but more severe for autoregressive models is serial correlation of the error term. This can introduce several biases into the regression estimates. The standard errors for all the independent variables will be smaller than normal, which means that the reliability of the estimates will generally be lower than indicated. Also, the regression coefficients for the exogenous variables may be depressed while the value of the lagged popularity variable will be inflated since it taps much of the autocorrelation. A "shock" to one month's popularity score, for example, may continue to be felt over a series of subsequent observations, and although the cause of disturbance will remain unnoticed, the correlation of the lag and current popularity will be strengthened. Or variables in the analysis may be misspecified (such as the crudely measured Early Term, Rally, and Watergate variables), resulting in systematic disturbances of popularity remaining unmeasured. Either way serial correlation of the error term is a likely result.

The Durbin-Watson statistic which is the conventional technique for detecting serial correlation is inappropriate for autoregressive equations, and weaker tests such as the run of signs produced indeterminate results in a preliminary analysis of the relationships. Given the brief interval between observations and the likely susceptibility of our dependent variable to a large number of environmental forces, we shall take a conservative approach and assume that serial correlation is present. In order to correct for this I have followed a technique proposed by Malinvaud of creating an "instrumental variable" representation for the lagged popularity term.³⁹ Essentially it requires that we substitute the *estimated* lag popularity score based on the exogenous variables in the equation for the *actual* lag score. If we are to obtain reasonable estimates, it now becomes doubly important that the model be fully specified. (For a discussion of the rationale procedures, and limitations of this approach and two alternative estimation procedures see the Appendix.)

The Findings

After an examination of a number of regression equations for each president, the specifications presented in Table 5 were found to

³⁹E. Malinvaud, *Statistical Methods of Econometrics* (London: North-Holland, 1970).

Table 5. Testing an Autoregressive Model of Presidential Popularity
(Unstandardized [b] and Standardized [beta] Regression Coefficients; D.V. = Percent Approving the President)

	% Change Unemployment ^a	% Change Prices ^a	Rally	Early Term	Watergate (Dummy)	Killed or Casualties	N.V. Bombing	Lag of Popularity ^b	Intercept	R ²
Truman										
b	-	-99.6	1.45	1.00	-	-1.05	-	.53	17.8	.83
beta	-	-.22 (65.6) ^c	.26 (.72)	.10 (2.3)	-	-.17 (1.53)	-	.58 (.30)		
Eisenhower										
b	-.65	-94.5	.27	.44	-	-	-	.88	8.0	.30
beta	-.03 (2.9) ^c	-.10 (109.5)	.07 (.39)	.08 (.91)	-	-	-	.44 (.38)		
Kennedy										
b	-19.1	-	1.11	1.92	-	-	-	.54	28.9	.67
beta	-.18 (13.8) ^c	-	.35 (.44)	.35 (.63)	-	-	-	.48 (.18)		
Johnson										
b	-28.8	-427.4	.42	.35	-	-.004	-.003	.54	32.1	.93
beta	-.11 (17.7) ^c	-.24 (207.1)	.06 (.33)	.04 (.50)	-	-.15 (.002)	-.09 (.0002)	.53 (.17)		
Nixon										
b	-	-199.0	1.06	1.3	-16.1	-	-	.11	52.2	.86
beta	-	-.24 (82.1) ^c	.14 (.45)	.14 (.54)	-.53 (3.6)	-	-	.10 (.11)		

^aScored as decimals rather than percents.

^bThis is the "instrumental variable" representation of popularity described in the Appendix.

^cThe numbers in parenthesis are the standard error of the slope. Regression coefficients which are twice the standard error are statistically significant at .05.

perform best in producing theoretically meaningful relationships and explaining overall variance in popularity. In a preliminary analysis, each of the variables in the equations were significantly related to popularity prior to the inclusion of the lagged popularity term. On the whole the relationships given in Table 5 support the old conventional wisdom. Environmental forces do contribute to short-term fluctuations in the president's popularity, and the trends generally display a large autoregressive component. Only for Eisenhower does the equation fail to explain a substantial share of fluctuation in his public support. What appears to have happened is that Eisenhower's popularity during his eight years in office was so stable that a greater share of the month-to-month fluctuation in his popularity reflects random sampling error of the surveys. There is simply little systematic variance available to be explained. After evaluating the significance of each of the exogenous variables on presidential popularity, we shall test the adequacy of these equations in explaining the downward trends measured by other scholars, and speculate on the implication of these relationships on presidential politics.

The Economy. The zero-order correlations in Table 3 gave little cause for optimism that change in unemployment would be a major determinant of the president's popularity, and these suspicions are confirmed with the multiple regression estimates. Only for Kennedy and Johnson does unemployment seem to have been a contributing factor, and even here the coefficients are neither large nor significant. A one-percent change in the unemployment rate over a six-month period altered Johnson's popularity by only .3 of one percent. Part of the problem of unemployment is that it is negatively correlated with war. As the Korean and Vietnam wars intensified, the unemployment rate declined along with the president's popularity.⁴⁰ Change in consumer prices, which if anything increases during war, is more closely related to popularity. For four or five presidents, the coefficients are sizable with a one-percentage-point change in prices over six months affecting popularity from .9 of a percentage point for Eisenhower to 4.3 points for Johnson. The *betas* demonstrate that infla-

tion explains a sizeable share of variance in popularity.

Although interpretation must be tentative since the relationships generally fail to satisfy conventional significance requirements, the pattern is consistent with our image of these historical periods. With the Korean war present throughout Truman's second term, it seems unlikely that unemployment would constitute a significant political issue. Similarly for Eisenhower, with the exception of the 1957–58 recession, unemployment and inflation do not appear to have been highly salient public concerns. The weak relationships here may also reflect Eisenhower's apolitical image. He may have simply been held less responsible than other presidents for conditions in the political environment. At the outset of the Kennedy administration, rising unemployment, not the modest rate of inflation, was the nation's primary concern. The 1961 tax cut was designed to stimulate consumer demand and production, not reduce it. Conversely, during Nixon's tenure, at least into the spring of 1974, the primary economic issue was rampant inflation dramatically manifested initially with the meat "boycott" in 1973 and later with the escalation in fuel prices. Not surprisingly, consumer prices emerge as the important economic variable. *While the relationships presented in Table 5 fail to establish the Iron Law of the Economy, they do inform us that changing economic conditions can have an important effect on the president's public standing.*

Rally and Early Term Effects. The new Rally variable is consistently related to approval in the predicted direction for all of the presidents. The strength of the relationships vary greatly, depending on the general overall plateau of popularity upon which they are operating and the political significance of the events themselves. Some events are simply more important than others. The effects of international events on Truman's, Kennedy's and Nixon's popularity are particularly strong. During the first month of a rally event, each president's popularity sharply improved by about 5 to 7 percentage points on the average. Perhaps Truman's surges in large part reflect his low popularity when crises occurred. There were simply more disapprovers available to rally. Much of the strong public support Kennedy enjoyed during the first two years in office appears to have been largely a product of a series of dramatic international crises. The relationship between the Rally variable and Johnson's popularity is positive although weak,

⁴⁰Unfortunately for our understanding of the Truman and Johnson trends, there are too few observations prior to the start of the wars to obtain an independent estimate of unemployment.

whereas the zero-order correlation presented earlier was sizable but in the wrong direction ($-.36$). In the multivariate analysis the Vietnam War variables—U.S. Killed and N.V. Bombing—are explaining the sharp descent of Johnson's popularity leaving Rally to pick up the temporary, minor surges of approval which occurred whenever he initiated a departure from existing war policy.⁴¹

The Early Term variable is related to each president's popularity in the correct direction but in three instances it is not statistically significant. Controlling for the other forces present in the political environment, we find the president gifted with extra support at the beginning of his term. The serious anomaly among these relationships is the weak Early Term value for Johnson. Entering office on the death of Kennedy and being elected by a huge majority should have provided an ideal setting for a large early-term surge. An analysis of the residuals suggests that the first early term period had a genuine surge effect, but the second did not since Johnson enjoyed strong public approval going into the election. The weak estimate represents the "average" effect of the two early term periods.⁴²

Chronic Problems. The Watergate dummy variable confirms what we already know. Watergate

hurt Nixon; by this conservative estimate the plateau of his public support dropped 16 percentage points. And as expected, the *betas* show that Watergate was by far the most important determinant of Nixon's loss of public esteem. The Korean War (a logarithmic transformation of U.S. casualties) had a continuing negative influence upon Truman's popularity. Although the relationships are not statistically significant and any interpretation must therefore be tentative, it appears from the *betas* that increasing prices were a slightly more important cause of Truman's low public support than the monthly war casualties. The two Vietnam War indices demonstrate the importance of properly measuring one's variables. Under extreme controls (including the companion war index) each variable independently exhibits a strong negative effect on Johnson's popularity. The unstandardized regression coefficients in Table 5 may appear deceptively small, but one must remember the unfortunate size of indices by which they are multiplied. The average monthly number of U.S. war dead was 478 and the average monthly bombings of North Vietnam was 4,692, and these figures include the year and a half of Johnson's administration before the war began, during which they had scored zero. Multiplying the coefficients by these averages gives a 3-percentage-point decline in Johnson's approval level for an "average" month. Obviously, this finding strongly disputes Mueller's conclusion that "the Vietnam War had no independent impact on President Johnson's popularity at all."⁴³ Even with extensive statistical controls, the war variables continue to be among the primary contributors to Johnson's downfall in the polls.

The findings differ substantially from the previously published research on presidential popularity. *Contrary to existing reports events and conditions which intuitively seem to be important determinants of a president's popularity are in fact the primary explanatory variables.* The traditional wisdom expressed in Proposition 1 has been affirmed.

The Estimated Previous Month Popularity. The second proposition posits that popularity will shift marginally from one month's observation to the next with the impact of current conditions on popularity mediated by the lingering effects of past conditions. The coefficient for the instrumental variable representation of presidential popularity confirms this prediction.

⁴¹One study of public opinion toward Vietnam War policies has shown that regardless of whether the respondent identified himself as a "hawk" or "dove" any change in policy would be greeted with at least temporary approval. See Sidney Verba et al., "Public Opinion and the War in Vietnam," *American Political Science Review*, 51 (June 1967), 317–33.

⁴²The arbitrary measurement of the Early Term and Rally probably reduces the explanatory power of the model and introduces serial correlation. This scoring procedure works as well as any other, but the problem lies in applying the same attrition model to qualitatively different types of events. All international events will obviously not have the same impact on public opinion. Moreover, attrition over subsequent months will vary according to the event's intensity and duration. Some, therefore, should last only a few months while others should perhaps be extended over a longer period. Unfortunately, we currently have little independent basis for weighting events to tap their differential significance. An example of its potential effect on correlations of the residual term is the Nixon Vietnamization speech in November 1969. Even with a high rally score assigned to this event, Nixon's actual popularity was some 12 percentage points greater than estimated. For the next several months the estimated popularity was less than the actual, tending to produce a correlation of the residuals.

⁴³Mueller, "Presidential Popularity," 34.

For each president except Nixon, the *estimated* previous month's popularity based on the exogenous variables in the equation is the strongest determinant of the president's current status. The failure of the lag term to perform as well during the Nixon administration suggests the direct hold of Watergate and rising prices on his public support.⁴⁴

What Happened to Time? Earlier, time was offered as a useful diagnostic for detecting whether any trend-producing variables have been inadvertently left out of the analysis. Mueller with his "coalition-of-minorities" and Stimson with his mass psychological shift explanation enshroud with theoretical significance the downward drift in approval. The appropriate question to ask here is whether the traditional view of popularity I have proposed satisfactorily explains why presidents become less popular. Does time matter? To test this I have regressed the residuals (the differences in the actual and estimated popularity) on time, and these relationships are reported in Table 6. Only for the Nixon administration does a statistically significant downward trend persist.⁴⁵ Very likely, the relationship here results

from the cumulative effects of Watergate which remain untapped by the Watergate dummy variable. The failure of time suggests that the relationship found by Mueller and Stimson may have largely been a product of the autoregressive nature of popularity. It also suggests that no substantive trend-producing variables have been mistakenly excluded from the equations. Using our model of presidential popularity, time is of little substantive value. *Mutatis mutandis, tempus fugit!*

Summary and Conclusion

In this article I have developed and tested a model of presidential popularity. Although some of the relationships have large standard errors or differ from the expected, the bulk of the evidence contained in the equations in Table 5 clearly favors the two propositions describing the model. The president does not simply become less popular. Instead, fluctuations in his prestige can be located in observable events and conditions present in the political environment. Peace and prosperity, just as President Ford noted at the opening of this article, are the foundations of a popular president. Moreover, popularity responds sluggishly to environmental forces, which is to be expected, given that we are examining brief changes of an index representing the opinions of a large, heterogeneous citizenry. Like budgeting, presidential popularity is experiential and incremental.

These findings agree with our image of the modern presidency. The increased function and size of the national government, the gravity of international affairs, and the president's access to the public guarantee his prominence in national policy making. While most observers focus on the president's expanded authority and capacity for leadership, the evidence presented here reveals that with authority comes responsibility. The Full Employment Act of

⁴⁴The fact that each of the coefficients rests between 0 and +1 informs us that popularity approaches a stable equilibrium. This means that in a constant political environment popularity will gradually move to an equilibrium level probably reflecting in part the partisan division of the electorate. For an example of the interpretation of equilibrium behavior from autoregressive terms, see Duff Spafford, "A Note on the 'Equilibrium' Division of the Vote," *American Political Science Review*, 65 (March 1971), 180-83.

⁴⁵It is curious that when time is included in the equation for the Nixon administration the coefficients for the other variables—including Watergate—improve: Pop = 1.5(Rally) - 284(Prices) - 19(Watergate) - .6(Early Term) - .04(lag of popularity) - .03(Time) + 68.6. $R^2 = .89$.

Table 6. Testing Time Against the Residuals of the Regression Estimates

	Time as Independent Variable		
	b(slope)	Standard Error*	Percent of Variance in Residuals Explained
Truman	-.006	.007	2
Eisenhower	.004	.005	1
Kennedy	-.011	.008	6
Johnson	-.001	.003	.1
Nixon	-.177	.005	18

*Estimates which are twice their standard error are significant at .05.

1946 may have acknowledged overall governmental responsibility for managing the economy, but public opinion makes the president personally responsible. The buck does indeed stop at the White House. These data also reveal that for brief but important periods the public suspends critical judgment and gives the president its support. At the outset of the president's term and during international crises, his prestige surges offering him in the first instance an opportunity to establish successful relationships with other elites and in the second the necessary flexibility to respond to international exigencies.

Sensing that the public is holding him responsible, the president is encouraged to engage in active problem solving. His decisions on policy do not affect his popularity so much as their results. Counter to the "coalition of minorities" explanation, the theory presented here argues that presidential inaction on occasion may be more costly in public support than action. No president wishes to have to deal with an energy crisis, but since it will not simply go away, he must deal with it. He knows that the consequences of public disapproval can be severe. A president's effectiveness in bargaining with other elites will be impaired, his capacity to lead public opinion will be reduced, and his party's fortunes at the polls will suffer.⁴⁶ The fact that these monthly job performance evaluations are rooted in real events and conditions—and not just in time—should in the long run enhance the quality of presidential performance.

Appendix. Statistical Procedures for Correcting for Serial Correlation

Instrumental variables is a procedure similar to two-stage least squares in which the "systematic" aspect of the variance in the lagged popularity variable is separated from the auto-

correlation component. This is done by regressing lagged popularity on the exogenous variables in the equation.⁴⁷ The new representation of lagged popularity is then inserted in the original equations in lieu of the observed rating. The degree to which it adequately represents the systematic component will reflect the completeness of the equation and precision with which the exogenous variables have been measured. Malinvaud in simulations has determined that ordinary least squares (Table A.1) gives better results than estimation with the instrumental variables when the samples are small (around 20 observations).

Hibbs suggests a further correction of the Instrumental Variables estimates.⁴⁸ Since the I.V. estimates are consistent, they can be used to determine the correlation of the errors and less biased estimates can be developed by applying "generalized least squares." Examining the Durbin-Watson statistic for the I.V. equations indicated that the residuals were strongly correlated for the Eisenhower term ($p = .75$) and indeterminate for Kennedy and Johnson. A correlogram analysis of these three time-series suggested a first-order autoregressive process. In Table A.2 each of the equations has been reestimated, correcting for potential serial correlation.

The main difference between these estimates and those provided in Table 5 is that the lagged popularity value for Eisenhower is almost wholly eliminated and the overall explanatory power of this equation reduced to 11 percent. The estimates for the other equations suffer as well but to a lesser degree.

Tables 5, A.1, and A.2 offer three alternative estimation procedures for testing the model. At each successive stage technical corrections become more complex and the estimates less interpretable. Malinvaud's sober conclusion of these procedures is appropriate here: "This examination of the various possible methods for treating autoregressive models with serially correlated errors leads to rather a pessimistic conclusion. When the available series are short, none of the proposed methods allows precise estimation of the serial correlation of the errors. In these conditions, direct least squares fitting certainly gives the best estimates of the coefficients. But the distribution of the estimated coefficients cannot be determined very well. So the tests and confidence intervals are necessarily very approximate."⁴⁹

⁴⁷Hibbs, "Problems of Statistical Estimation."

⁴⁸Hibbs.

⁴⁹Malinvaud, p. 569.

⁴⁶See for example Neustadt, *Presidential Power* (New York: Wiley, 1960), ch. 5; George Edwards, "Presidential Influence in the House: Presidential Prestige as a Source of Presidential Power," *American Political Science Review*, 70 (March 1976), 101–13; Samuel Kernell, "The Truman Doctrine Speech: A Case Study of the Dynamics of Presidential Opinion Leadership," *Social Science History*, 1 (Fall 1975), 20–44; and Samuel Kernell, "Presidential Popularity and Negative Voting: An Alternative Explanation of the Midterm Congressional Decline of the President's Party," *American Political Science Review*, 71 (March 1977), 44–66.

Table A.1. Original Regression Estimates With the Untransformed Values for Lag of Popularity

	% Change Unemployment ^a	% Change Prices ^a	Rally	Early Term	Watergate (Dummy)	Killed or Casualties	N.V. Bombing	Lag of Popularity ^b	Intercept	r ²
Truman	-	-104.22 (60.07) ^a	1.14 (.55)	-.94 (1.85)	-	-.457 (1.10)	-	.64 (.17)	13.0	.89
Eisenhower	- 1.34 (1.69)	-125.44 (64.56)	.25 (.27)	.62 (.45)	-	-	-	.72 (.07)	64.2	.65
Kennedy	-10.0 (9.8)	-	1.05 (.29)	.62 (.63)	-	-	-	.70 (.11)	17.7	.83
Johnson	-33.31 (14.52)	-484.89 (159.38)	.41 (.31)	.49 (.46)	-	-.004 (.001)	-.0003 (.0002)	.48 (.11)	36.2	.94
Nixon	-	-166.90 (57.88)	.78 (.31)	.59 (.44)	-4.88 (2.83)	-	-	.60 (.09)	24.3	.93

^aThe figures in parenthesis are the standard errors of the slope. Regression coefficients which are twice the standard error are statistically significant at .05.

Table A.2. Regression Estimates Correcting for Serial Correlation^a

	% Change Unemployment	% Change Prices	Rally	Early Term	Watergate (Dummy)	Killed or Casualties	N.V. Bombing	Lag of Popularity	Intercept	r ²
Truman	-	-123.21 (89.55)	1.70 (.58)	-.24 (2.19)	-	-1.62 (1.13)	-	.17 (.135)	20.10	.58
Eisenhower	- 2.61 (3.75)	-111.67 (125.26)	.56 (.32)	1.26 (.76)	-	-	-	.04 (.05)	21.79	.11
Kennedy	- 3.70 (15.45)	-	1.10 (.36)	-.05 (1.46)	-	-	-	.66 (.18)	13.5	.59
Johnson	-49.10 (15.38)	-730.85 (165.93)	.48 (.32)	.49 (.54)	-	-.0059 (.0016)	-.00019 (.00024)	.27 (.10)	37.7	.88
Nixon	-	-331.99 (91.73)	1.09 (.39)	.99 (1.01)	-10.6 (3.7)	-	-	.06 (.08)	30.8	.75

^aAll values for the independent and dependent variables have been transformed for a 1st order autocorrelation process. Lag of Popularity is the instrumental variable transformation.