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## THE EFFECTS OF GOVERNMENT-ISSUED TERROR WARNINGS ON PRESIDENTIAL APPROVAL RATINGS

Robb Willer  
Cornell University

### ABSTRACT

*This study investigates the possibility that government-issued terror warnings could increase support for the president. This contention is supported anecdotally by the large increase in presidential approval immediately following the attacks on the United States of September 11, 2001. Additionally, social identity theory suggests that fear of external attacks leads to increased support for standing leaders. To evaluate this proposition, I conducted several time-series analyses on the relationship between government-issued terror warnings reported in the Washington Post between February 2001 and May 2004, and Gallup poll data on Americans' opinions of President George W. Bush. Across several regression models, results showed a consistent, positive relationship between terror warnings and presidential approval. I also found that government-issued terror warnings increased support for President Bush's handling of the economy. Analyses intended to determine the duration of these effects were inconclusive.*

## INTRODUCTION

Following the attacks on the United States of September 11, 2001, all polls of President Bush's approval rating showed a huge and relatively immediate upward spike. For example, the percentage of Americans reporting approval of Bush's job performance climbed from 51% in the Gallup poll of September 10, 2001 to a remarkable 86% in the next poll released on September 15. This was the largest change between consecutive presidential approval polls ever reported by Gallup in more than 65 years. Similarly, the *Washington Post-ABC News* poll showed an increase in presidential approval from 55% reported on September 9, 2001, to 86% on September 13.

Though this sudden and unprecedented increase was reflected in all major national polls regarding the president, the reasons for such a spike are not immediately clear. The increase in approval for the president was so complete as to extend to aspects of his job performance not directly related to external attacks, or the 9/11 disaster in particular. Approval for President Bush's handling of the economy increased from 54% on July 11, 2001 to 72% on October 5, 2001, as reported by Gallup. This occurred even though the president was, understandably, focused on largely non-economic issues following September 11.

The sheer magnitude of the change in positive perceptions of the president following the terror attacks of September 11, 2001 suggests a strong underlying process. Theories from sociology and psychology suggest that there exists a general relationship between fear of external attacks and support for standing leaders. I present a theoretical account for this relationship based on social identity theory.

## THEORETICAL BACKGROUND

Social identity theory (Tajfel and Turner 1986) asserts that a fundamental cognitive tendency leads individuals to categorize groups, and other stimuli, in terms of opposites. Individuals tend to identify with a specific group to the extent that they see themselves as more similar to the members of the group than its salient out-group. Once individuals have identified with a group they engage in social comparison and manifest in-group biases. In-group biases help individuals maintain high self-esteem as members of their group. Social identity researchers have shown that individuals tend to identify with perceived in-groups and manifest significant biases towards them including tendencies to allocate more resources to fellow in-group members (Tajfel 1970). From the perspective of social identity theory, threats of attacks from other groups increase solidarity and in-group identification amongst Americans and support for aspects of the in-group, including its leadership, by increasing the salience of a hated out-group (foreign terrorists).

Further, research shows that when an out-group threat carries with it mortal terror, social identity effects will likely be magnified. Terror Management Theory (hereafter TMT: Rosenblatt et. al. 1989, Greenberg et. al. 1990, Greenberg, Solomon, and Pyszczynski 1997) has shown that mortality salience can increase in-group biases, including 1) increased in-group affiliation and biases (Harmon-Jones et. al. 1996), 2) increased hostility and aggression towards out-group members (McGregor et. al. 1998), and 3) increased liking of fellow in-group members who conform to cultural expectations (Greenberg et. al. 1990). TMT researchers have also argued that

terrorist acts can cause effects analogous to mortality salience (Pyszczynski, Solomon, and Greenberg 2003, Landau et. al. 2004, Study 2). TMT research has shown mortality salience can increase nationalism (Arndt, Greenberg, and Cook 2002). Recently, Landau et. al. found that reminding experimental subjects of 9/11 increased liking for President Bush (2004, Study 3). This research suggests that individuals may respond to reminders of their mortality, like terror warnings, by supporting standing leaders.

## **HYPOTHESES**

I will test the empirical claim that fear of terrorism leads to increased support for standing leaders, and another related claim. The specific hypotheses I will evaluate in the research follow:

Hypothesis 1: Government-issued terror warnings have a positive effect on presidential approval ratings.

Also relevant, the "halo effect" refers to individuals' failure to discriminate between distinct qualities in evaluation of another person (Thorndike 1920). The halo effect has been cited, for example, in the tendency to rate attractive people as superior on other, unrelated dimensions (Dion et. al. 1972). Based on this tendency, I would expect terror warnings to not only affect general evaluations of President Bush, but also evaluations of aspects of his job performance apparently unrelated to terrorism.

Hypothesis 2: Government-issued terror warnings have a positive impact on ratings of specific aspects of the president unrelated to terrorism, e.g. the president's handling of the economy.

I will also investigate the duration of the predicted effects, though I make no specific predictions for the results of these exploratory analyses. In the sections that follow I describe the data and methods, explain the results of my analyses, and discuss the findings.

## **METHODS**

I collected data on government-issued terror warnings and presidential approval ratings during the time period extending from February 1, 2001 to May 9, 2004. Beginning briefly after the attacks on the U.S. of September 11, 2001, various branches of the U.S. government (e.g. the Federal Bureau of Investigation, U.S. Attorney General, and Department of Homeland Security) occasionally warned the U.S. public of increased risks of terrorist attacks. Some, but not all, of these terrorism warnings were accompanied by an elevation of the Homeland Security Advisory System's Current Threat Level.[1] The data set begins prior to the attacks on the U.S. of September 11, 2001, and ends after the period of highest concentration of terror warnings.

### **Independent Variables**

I coded all government-issued terror warnings reported in the first section of the Washington Post during the period of study. In all I found twenty-six cases of a federal government agency reporting an increased threat of terrorist activity in the U.S. Some warnings were directed towards U.S. citizens, such as the increases to Homeland Security's Current Threat Level. Other

warnings were directed at local law enforcement officers and were thereafter reported in the media.

From these data I created a variable "Terror Warning Count" reflecting the number of terror warnings issued by the federal government in the week prior to a Gallup opinion poll on the president. I also created lagged versions of the "Terror Warning Count" variable for studying the duration of the effects of the independent variable. "Terror Lag 1" indicates the number of terror warnings occurring between 1 and 2 weeks prior to a Gallup opinion poll; "Terror Lag 2" indicates the number of terror warnings occurring between 2 and 3 weeks prior to a Gallup opinion poll. Studying the effects of these three variables will allow us to understand whether the effects of terror warnings tend to persist for weeks or not.

### **Dependent Variables**

The dependent variables were presidential approval level and presidential economic approval level. The presidential approval data were gathered by the Gallup Organization and are the results of telephone interviews with approximately 1,000 adults (18+ years old) conducted over 2-3 day periods. Periods between Gallup polls ranged from 0 to 19 days during the time period of the study. In all, 131 Gallup polls of presidential approval were conducted during the period of study. Presidential approval level reflects the percentage of people answering "Yes" to the following question: "Do you approve or disapprove of the way George W. Bush is handling his job as president?"

Presidential economic approval data were gathered intermittently in the same interviews. Forty-four Gallup polls of presidential economic approval were conducted during the period of study. Presidential economic approval level reflects the percentage of people answering "Yes" to the following question: "Do you approve or disapprove of the way George W. Bush is handling the economy?"

### **Controls**

I identified five significant shocks to the president's approval level: the attacks on the U.S. of September 11th (9/11/01), the beginning of military action in Afghanistan (10/7/01), the beginning of the Iraq War (3/20/03), the capture of Saddam Hussein (12/14/03), and the first television broadcast of the Abu Ghraib prison photographs (4/29/04). For each of these incidents I specified a control variable lasting for 4 weeks, except the attacks of September 11th, for which I specified a 12 week window. For example, the variable "Iraq War" has a value of "1" for opinion polls released from 3/20/03 until 4/16/04, and a value of "0" for all other opinion poll data. The September 11th control variable was longer than the others because I reasoned it had larger, more enduring effects on presidential approval than the other events.

### **Lags**

In addition to creating lags of the terror warning count independent variable for evaluating the duration of the predicted effects, I also created lags of the two dependent variables. Lags of independent and dependent variables should not be confused. Independent variable lags are used

to assess the duration of the effects of the independent variable, while dependent variable lags are used to control for past levels of the dependent variable. Controlling for past presidential approval levels focuses my time-series analyses on changes to the dependent variables. I created four lags of presidential approval level. These lags represent the presidential approval level in the most recent, second most recent, third most recent, and fourth most recent Gallup polls. I also created three lags of the presidential economic approval level representing the most recent, second most recent, and third most recent economic approval levels.

## **RESULTS**

To test the above hypotheses I conducted several time-series data analyses. I tested multiple regression models of the effects of recent government-issued terror warnings on presidential approval and presidential economic approval. Across several analyses I attempted to address alternative explanations and correct for possible methodological shortcomings.

Table 1 shows the results of four regression models with approval rating as the dependent variable. I first ran two models with limited controls to show the basic relationship between terror warnings and presidential approval. In Model 1 the only independent variables are the government-issued terror warning count the week before the polls, and the two terror lag terms. Model 1 shows that, without controls, both terror warning count and the first lag term are significant. This suggests that terror warnings from the past week, and from 1 to 2 weeks beforehand, were followed by increased presidential approval. In Model 2, I added controls for five events that could have significantly affected President Bush's approval level. Of these controls, both the attacks of September 11, 2001 and the release of the Abu Ghraib prison photographs had significant effects on presidential approval levels in the intuitive directions. In this model, both terror warning count and the first lag are significant, as in Model 1. A second lag of terror warning count was also significant, though marginally so.

Models 3 and 4 are the more discerning tests of the effects of terror warnings on presidential approval levels, over and above prior approval levels. In Model 3 I investigated the effects of terror warning count and lags of the terror warning count, while controlling for four previous presidential approval levels. Including lags of the dependent variable (presidential approval level) in the model allows me to focus my analysis on predicting poll to poll changes in approval level. Of the four lagged measures of presidential approval level, only the most recent was significant. In this model, terror warning count, but no lags of the terror warning count, was again significant. Terror warnings from the past week had a significant and positive effect on presidential approval levels, controlling for the most recent approval levels.

Model 4 provides the most controlled test of Hypothesis 1. In Model 4 I include all the control variables and lag terms from Models 2 and 3. This model controls for recent presidential approval and five significant events that likely affected presidential approval levels. Several of the control variables (9/11, the Afghanistan War, and the Iraq War) and three of the lag terms (most recent poll, 3rd most recent poll, and 4th most recent poll) were significantly related to presidential approval level. Most importantly, the terror warning count was again a significant predictor of President Bush's presidential approval level. Neither of the lagged terror warning counts was significant.

**Table 1: Regression Coefficients for Four Models, Dependent Variable = Presidential Approval Level, Standard Errors in Parentheses**

	Model 1	Model 2	Model 3	Model 4
Terror Warning Count	8.78**** (2.01)	6.49*** (1.95)	2.00** (1.01)	2.75*** (.848)
Terror Lag 1	5.86*** (1.75)	4.09** (1.59)	0.06 (0.81)	0.11 (0.67)
Terror Lag 2	3.98 (2.83)	4.69* (2.50)	0.54 (1.30)	1.53 (1.06)
9/11		22.90**** (3.98)		14.60**** (1.84)
Afghanistan War		-10.80 (6.81)		-11.50**** (2.95)
Iraq War		5.40 (3.63)		5.48**** (1.62)
Hussein Capture		-3.80 (5.09)		3.99* (2.12)
Abu Ghraib Photos		-14.00** (6.17)		-3.84 (2.51)
Most recent approval level			0.84**** (0.09)	0.53**** (0.08)
2nd most recent approval level			-0.05 (0.12)	-0.06 (0.10)
3rd most recent approval level			0.07 (0.12)	0.20* (0.10)
4th most recent approval level			0.06 (0.10)	0.20** (0.09)
Constant	62.00**** (1.01)	61.50**** (0.93)	4.47* (2.58)	7.42*** (2.19)
N	130	130	126	126
R Square	0.22	0.43	0.86	0.91

\* =  $p < .10$ , \*\* =  $p < .05$ , \*\*\* =  $p < .01$ , \*\*\*\* =  $p < .001$

In all four models terror warning count had a significant and positive impact on presidential approval level. Of these, supportive evidence from Models 3 and 4 is most convincing since these models held constant past approval levels to analyze recent changes. In the full model (Model 4), each terror warning from the previous week corresponded to a 2.75 point increase in the percentage of Americans expressing approval for President Bush. These findings support Hypothesis 1: terror warnings increase general approval levels.

I was also interested in investigating the duration of the effects of terror warnings on presidential approval levels. In both Models 1 and 2 the first terror lag term was significant, suggesting that the effects of terror warnings persisted for more than a week, but less than two weeks. However, it's worth noting that Models 3 and 4 allow for a more exacting test of Hypothesis 2; in both

models neither of the lagged terror variables was significant while the terror warning counts from the previous week were. This suggests that the effects of terror warnings last for no more than a week. Models 3 and 4 provide more discerning analyses of the persistence of effects since they control for past approval levels. Thus, evidence is mixed, allowing for no strong conclusions, but on balance suggests that the effect of terror warnings on presidential approval levels is of relatively short duration.

### **Analyzing Economic Approval Levels**

Hypothesis 2 predicts that, due to a halo effect, terror warnings will have a positive impact on evaluations of aspects of the president unrelated to handling of external attacks, including the president's handling of the economy. In order to evaluate Hypothesis 2 I ran four more time series analyses similar to those presented above with presidential economic approval level as the dependent variable. Again, Models 1 and 2 are presented primarily to show a full picture of the relationship between terror warnings and presidential economic approval levels, while Models 3 and 4 offer more discerning tests that control for past economic approval levels. Table 2 shows the results of four regressions with economic approval level as the dependent variable. In Model 1 terror warning count and the two terror lag terms are regressed onto presidential economic approval. In this first model, terror warning count and the second lag have a statistically significant, positive impact on presidential economic approval.

In Model 2 I added the five variables designed to control for extraneous events that may have impacted the president's economic approval level. Of these only the release of the Abu Ghraib torture photographs had a significant effect on the dependent variable. Consistent with prediction, the terror warning count from the previous week had a positive and significant impact on presidential economic approval in Model 2.[2] The second terror warning lag term also had a significant and positive effect.

Model 3 tests the effects of terror warning count, and lags of the terror warning count, while controlling for three lagged measures of the presidential economic approval level. By controlling for past levels of the presidential economic approval level, Model 3 allows for analysis of the relationship between the independent variables and recent change in economic approval level. As Table 2 shows, the first two lags of presidential economic approval level were significant, the second marginally so. The first terror lag term was also marginally significant. Most importantly, Hypothesis 2 received further support as the terror warning count again had a positive and significant impact on presidential economic approval. This result indicates that terror warnings were followed by increases in the president's economic approval level.

**Table 2: Regression Coefficients for Four Models, Dependent Variable = Presidential Economic Approval Level, Standard Errors in Parentheses**

	Model 1	Model 2	Model 3	Model 4
Terror Warning Count	18.30**** (3.30)	15.10*** (4.58)	10.60**** (2.47)	5.21* (2.65)
Terror Lag 1	0.84 (2.60)	-0.80 (3.51)	2.81* (1.65)	-0.86 (1.79)
Terror Lag 2	9.41** (3.62)	9.50** (3.70)	3.71 (2.61)	3.47 (2.08)
9/11		7.90 (7.40)		17.20**** (3.92)
Afghanistan War		-1.80 (9.01)		-7.80 (5.17)
Iraq War		0.77 (4.19)		4.77** (2.25)
Hussein Capture		5.03 (6.86)		9.41** (3.65)
Abu Ghraib Photos		-8.77** (4.28)		-2.27 (2.26)
Most recent economy level			0.45*** (0.14)	0.31** (0.14)
2nd most recent economy level			0.29* (0.17)	0.34** (0.14)
3rd most recent economy level			-0.07 (0.14)	0.14 (0.13)
Constant	49.30**** (1.02)	49.80**** (1.10)	14.98*** (4.94)	9.25** (4.44)
N	43	43	40	40
R Square	0.50	0.58	0.83	0.91

\* =  $p < .10$ , \*\* =  $p < .05$ , \*\*\* =  $p < .01$ , \*\*\*\* =  $p < .001$

Finally, Model 4 includes all control and lag variables from Models 2 and 3. As above, this model provides the most discerning test of Hypothesis 2 since it analyzes the effects of terror warnings on presidential economic approval while controlling for recent economic approval levels and five significant events that could also have affected it. In this final model, three of the control variables (9/11, the Iraq War, and the Hussein Capture) and two of the lag terms (most recent poll and 2nd most recent poll) had significant effects on presidential approval level. In Model 4, the terror warning count had a marginally significant ( $p=.059$ ), positive effect on presidential economic approval. Neither terror lag term was significant.

In all four models, the terror warning count from the previous week had a significant and positive effect on presidential economic approval, though this effect was only marginally significant in Model 4. Even Models 3 and 4 that focus analysis on change to presidential economic approval over time supported Hypothesis 2. These results are surprisingly consistent



given the small number of Gallup polls conducted in the sampled time period that asked respondents about presidential economic approval.

As in the previous assessment of the duration of effects of terror warnings, the present evidence is mixed on the duration of terror effects on attitudes towards the president. Terror lag terms were at least marginally significant in Models 1, 2 and 3, suggesting the persistence of terror warning effects for more than a week. However, in Model 4, the most controlled analysis, neither lag term was significant, indicating no persistence of effects beyond a week. These findings are ambivalent on the duration of effects of terror warnings on presidential economic approval.

## **DISCUSSION**

There is a clear pattern in these data supporting the central prediction that a tendency exists for people to support standing leaders after threats of external terror, and specifically President Bush after government-issued terror warnings. A series of regression models with various controls converged on this finding. The present research also found support for the claim that terror warnings can affect evaluations of the president that are largely irrelevant to terrorism, in this case evaluations of his handling of the economy. Evidence was mixed regarding the duration of these effects.

## **LIMITATIONS OF PRESENT RESEARCH**

At a methodological level, the irregular polling intervals used by the Gallup organization are somewhat disquieting. While there were stretches of up to 19 days between some polling periods, others began the day after the last ended. I could have inadvertently over-sampled a particular time period in the data wherein the relationship between terror warnings and presidential approval was high. The result would be the conclusion that this relationship existed across the entire period when it only applied to an over-sampled period. The spacing of the polling intervals, while irregular, was not excessively concentrated in any particular period of the study, which suggests that uneven sampling is unlikely to be driving our results.

Second, because of the small number of cases for economic approval ratings I was not able to integrate as many relevant statistical controls as I would have wanted. Ideally, I would control for significant fluctuations in the stock market and nationally reported unemployment and growth data. Without controls for significant economic events, and in light of the small number of data points, Hypothesis 2 is only cautiously accepted.

A third methodological limitation of this research has been the use of Gallup poll totals, rather than Gallup respondents' actual responses, as data points in the preceding analyses. The result is a relatively conservative test. Disaggregating the Gallup poll approval data is unlikely to produce divergent results, but will allow for more statistical power. Future research should pursue this avenue in order to produce conclusions with greater confidence.

Future research could also integrate more opinion poll data from sources besides the Gallup organization. Ideally, the effects of terror warnings would be analyzed with opinion poll data for

every day of President Bush's term. While that may be impossible, the great number of national polling groups makes it realistic to obtain at least semiweekly approval poll data.

## CONCLUSION

The present research sought to evaluate whether the threat of terrorism increases support for standing leaders. To test this idea I investigated Gallup poll data on presidential approval to see if it increased following government-issued terror warnings. I found consistent evidence supporting the hypothesis that government-issued terror warnings led to increases in President Bush's approval levels. Further, I found evidence that the threat of terror may lead to more positive evaluations of the president on a dimension largely irrelevant to terrorism, his handling of the economy. I was unable to establish how long these effects typically last. I leave that question, and further exploration of the empirical regularities observed, to future research.

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**APPENDIX**

**Table 3: Means, Standard Deviations, and Correlation Matrix for Key Variables.[3]**

	Mean (SD)	1	2	3	4	5	6	7	8
Approval Level	64.99 (11.04)	---							
Economic Approval Level	51.75 (8.13)	.90**	---						
Terror Warning Count	0.15 (0.43)	.36**	.64**	---					
9/11	0.06 (0.24)	.53**	.54**	.29**	---				
Afghanistan War	0.02 (0.15)	.32**	.37*	.42**	.60**	---			
Iraq War	0.05 (0.21)	.10	-.06	.01	-.06	-.03	---		
Hussein Capture	0.02 (0.15)	-.06	.04	-.05	-.04	-.02	-.03	---	
Abu Ghraib	0.02 (0.12)	-.20*	-.29	-.04	-.03	-.02	-.03	-.02	--

\* = p < .05, \*\* = p < .01

**ENDNOTES**

1. The Homeland Security Department's Advisory System is best known for its color-coded warning system. From the inception of the advisory system on March 12, 2002, through the

period of study, the alert level was always Orange ("High," indicating "High Risk of Terrorist Attacks") or Yellow ("Elevated," indicating "Significant Risk of Terrorist Attacks").

2. I was concerned by the insignificance of the 9/11 term in Model 2. I thought it was possible that the increased approval ratings following 9/11 were somehow feeding the significance of the terror warning count variable, which were frequent after 9/11, when they were really the result of 9/11. To be careful that the significant effect of terror warnings on presidential economic approval ratings was not in fact a result of 9/11 I ran a regression identical to Model 2 except for two changes: 1) I only analyzed the post-9/11 period extending from January 1, 2002 to May 9, 2004, and 2) I dropped the now irrelevant controls for 9/11 and Afghanistan. The results of this revised model were qualitatively the same as Model 2. Specifically, the terror warning count was significant at the same level.

3. Data file available from the author (Willer@cornell.edu) upon request.

### **AUTHOR'S NOTE**

Edward J. Walsh made substantial contributions to the formulation of the project, archival research, and data acquisition. I would also like to thank Stephen Benard, Shelley Correll, David Grusky, Michael Macy, Brent Simpson, David Strang, Arnout van de Rijt, and Kim Weeden for feedback on earlier versions of this paper.

### **AUTHOR BIOGRAPHY**

Robb Willer is a Ph.D. student in the Department of Sociology, Cornell University. His primary research interests are collective action, status, social networks, and power. His e-mail address is: Willer@cornell.edu.