

## Unemployment and Turnout\*

S. Erdem Aytaç

Eli Rau

Susan Stokes

saytac@ku.edu.tr

eli.rau@yale.edu

susan.stokes@yale.edu

Assistant Professor  
Koç University

Ph.D. Student  
Yale University

John S. Saden Professor  
Yale University

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## **Abstract**

A generation ago, Rosenstone (1982) showed that unemployed Americans were less likely to vote than employed ones. Those who lost their jobs shortly before the election were especially likely to abstain. Rosenstone attributed the unemployment effect to heightened opportunity costs that the unemployed faced for the time needed to vote, and the waning effect to an easing of these costs over time. By expanding the period under analysis from one election during a recession (1974) to 18 national elections (1974-2010), six of them during recessions, we show that the waning effect of unemployment on turnout is a feature of high-unemployment contexts. In low-unemployment contexts, people who lose their jobs even many weeks before an election remain less likely to vote than those holding jobs. To explain these patterns we have to broaden our focus beyond the opportunity costs of voting and take into account party conflict over the economy and the emotional fallout of job loss. When campaigns unfold in high-unemployment contexts, challengers politicize the jobs situation, inducing anger among the unemployed and hence increasing their willingness to participate. We offer additional evidence linking the emotional impact of unemployment to participation with surveys in the U.S. and Britain and from an original survey experiment of unemployed people in the U.S.

“Many Americans have given up on this president but they haven’t ever thought about giving up. Not on themselves. Not on each other. And not on America. What is needed in our country today is not complicated or profound. It doesn’t take a special government commission to tell us what America needs. What America needs is jobs. Lots of jobs.”

–Mitt Romney, Republican presidential candidate, 2012

## 1 Introduction

How do economic troubles influence mass participation? Studies that focus on job loss show that it depresses participation, but the effect is not simple. In a classic study, Rosenstone (1982) demonstrated that Americans who lost their jobs soon before an election were decidedly less likely to turn out, but those who lost them many weeks before bounced back, becoming increasingly likely to vote even though they remained unemployed. Rosenstone’s explanation for the *unemployment* effect was that those who had lost their jobs were too busy with immediate concerns – looking for a new job, applying for unemployment insurance – to bother voting. For the recently unemployed, the opportunity costs of the time needed to vote were prohibitive. His explanation for the *waning* effect was that these adjustments to the new status of unemployment consumed less time as the weeks and months went by.<sup>1</sup>

Rosenstone’s emphasis on the varying opportunity costs of participation was natural, given the prominence of economic models of turnout at the time that he wrote, models that remain influential today. Recall the factors that Riker and Ordeshook (1968) identified as influencing people’s turnout decisions: the costs of participation and a duty to vote. Whether a person thought there was much at stake in the outcome of the election (the “differential utility over outcomes”), or how contented or angry she was about the status quo; neither would play a

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<sup>1</sup>This “withdrawal” hypothesis was one of three that Rosenstone evaluated. The mobilization hypothesis was that unemployment would increase turnout, as those suffering economic misfortune would have greater incentives to vote and punish the government for their economic misfortune. And he evaluated a null-effect hypothesis, in which personal economic well-being would have no connection with turnout.

role. The reason was that no one's vote would be pivotal in securing their preferred outcome or in influencing the conditions that were at the root of their anger or contentedness. Nor would a "duty to vote" or other private benefits of voting vary from election to election. The only obviously moving part in the economic model of voting were the costs of participation.<sup>2</sup>

Yet we might have *a priori* doubts about whether people who lose their jobs suddenly find time to be tight. Even though job searches and applying for benefits are time-consuming, the recently unemployed suddenly find themselves with forty hours or so a week of "free time," not to mention the time saved from commuting. The opportunity-cost explanation is strained, as were similar explanations for higher turnout rates among the wealthy and educated than for the poor (an idea developed, for instance, by Rosenstone and Hansen (1993)). Surely the monetary opportunity costs of voting are at least as high for Wall Street bankers or college professors as they are for people in low-paying fields.

It is more fruitful to recognize that several psychological and social factors come into play in people's decisions whether to vote or abstain. By admitting of social-psychological factors, we are able to make sense of another pattern in the impact of unemployment on turnout, which our paper reveals. The waning effect that Rosenstone observed – the bounce-back, if you will, in the propensity to vote of unemployed people over time, so that the longer-term unemployed look more like the employed in their willingness to go to the polls – turns out not to hold generally in the U.S., but only at times when unemployment is high. People who lose their jobs in times of low unemployment remain less likely to go to the polls, whether they lost their job the day before the election or months earlier. It is doubtful that the opportunity costs of voting do not decline over time in low-unemployment contexts.

Our evidence points, instead, toward emotional reactions to job loss and to candidates' incentives to politicize unemployment – to blame the incumbent for high rates of unemployment but to ignore joblessness when unemployment is low (a state of affairs that could be seen as a sign of the government's competence in economic management). An example is the challenger Mitt

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<sup>2</sup>These problems are discussed at greater length in Aytaç and Stokes (2016).

Romney’s statement in the epigraph, boiling down what America needs to “jobs, lots of jobs.” During the 2012 presidential campaign the unemployment rate hovered around eight percent.

After reviewing related literature in the next section and offering a theory of context-sensitive turnout of the unemployed, in Section 3 we analyze large surveys that probe U.S. respondents’ employment status and voting behavior, collected over a nearly 40-year period. The advantage of these data, from the *Current Population Survey* (CPS), is that hundreds of thousands of people were interviewed, and they were asked detailed questions about their employment status. We are able therefore to home in on the political behavior of the unemployed. The disadvantage of the CPS surveys is that turnout is self-reported; nor do they probe people’s subjective responses to the economy. Therefore, in Section 4, we turn to public opinion polls with validated turnout, from the U.K., which do explore these responses (but with much smaller samples that include relatively few unemployed people). We also analyze similar polls from the U.S. which, though not verifying turnout, also probe subjective responses to the economy. In Section 5 we deploy a survey experiment of unemployed Americans, which allows us to confirm a fundamental mechanism at work: that campaign statements blaming joblessness on the government increase the anger of the unemployed. We conclude with comments about the broader significance of our study.

## **2 Related Studies and Theory**

Scholarship on the impact of the economy on electoral behavior is vast, and includes many relevant studies of unemployment and turnout.<sup>3</sup> In addition to the Rosenstone study already mentioned, another germane paper is by Arceneaux (2003). He studied American elections from 1990-1998, and found that, among those whose economic situation worsens, behavior is determined by the extent to which an individual blames the government for their economic misfortune. Those who suffer economically and blame the government are more likely to turn out; those who suffer economically and do not blame the government are less likely to turn out.

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<sup>3</sup>For a comprehensive review of the determinants of turnout, see Blais (2006).

Arceneaux in effect treats blame as an exogenous difference that can either lead people to participate or not, without linking this mindset with the broader economic context or the incentives they create for politicians.

In turn, a paper by Incantalupo (2011) develops the concept of “unemployment-in-context,” arguing – as we do – that the political impact of job loss depends on the overall jobs context. With CPS data he shows that involuntary job loss depresses turnout, both across elections and across U.S. states, as long as the rate of unemployment is low. Also relevant is a study by Burden and Wichowsky (2014). They examine unemployment and turnout at the state level, using data from each presidential election from 1976-2008. They find that states with higher unemployment rates also feature higher rates of turnout.

Our paper is also informed by a long line of research in social and political psychology linking subjective and emotional states with people’s propensity to join, or avoid, collective action. There is considerable evidence that anger mobilizes people to act in political contexts. It has been shown that experimentally induced anger (Valentino et al. 2011) and anger-evoking political messages (Weber 2013) encourage political participation.<sup>4</sup> Similarly, anger triggered by relative deprivation (Gurr 1970) or by perceived in-group advantage (Leach, Iyer and Pedersen 2006) encourages participation in political collective action.

## **2.1 Theory**

Rosenstone (1982: 41) attributed the waning impact of unemployment on turnout to varying opportunity costs of voting. “When the return from attending to an immediate, stressful personal problem, such as unemployment, is greater than the return from participating in politics, the opportunity costs of participation are higher. The higher the opportunity costs, the lower the possibility the citizen will participate in politics.” As time passes, however, individuals adjust to joblessness, and they make room for other concerns, including politics. He writes,

In the third jobless week the eligible start to receive their unemployment benefits and

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<sup>4</sup>Valentino et al. (2011) report the positive effect of anger on participation using data from a national survey of the 2008 electorate and pooled ANES data from 1980 to 2004.

the job search slows. Adjustment to unemployment begins and its displacement of other concerns, such as politics, declines. ‘You do eventually become accustomed to being unemployed, in the way you might accept a bad limp,’ recounts an unemployed person. ‘*And you gradually quit beating yourself. . . you recover some of your confidence*’” (1982: 36, emphasis added).<sup>5</sup>

Note the gap between Rosenstone’s economic explanation, which underscores the changing impact of job loss on time budgets, and words of the unemployed person whom he quotes, which underscore the changing emotional impact of job loss as time passes.

Rosenstone studied unemployment and turnout during a recession: 1974 was an election year that coincided with a 2.2% drop in real personal disposable income and a jump in unemployment from 5.6% to 8.5% in 1975. If he had been able to study a longer time series, he would have seen that the waning effect of unemployment on turnout appeared in some elections but not others. With few exceptions, those in which the waning effect is visible have in common that they were recession elections and the unemployment rate was high, as we demonstrate in the next section. To make sense of these patterns – and to make better sense of the emotional effects of unemployment evinced by the person Rosenstone quoted – we hypothesize that emotions and the economic context, specifically the overall level of unemployment, drive the relationship between the length of unemployment and likelihood of turnout.

Our argument is simple. Job-loss initially demobilizes people by inducing depression and withdrawal (Feather and O’Brien 1986; Hamilton et al. 1993; Linn, Sandifer and Stein 1985; Price, Choi and Vinokur 2002), emotions that discourage participation in collective action (Carver 2004; Ojeda 2015). However, people who lose their jobs in a context of high unemployment and during election campaigns are exposed to challengers’ claims (like Romney’s) that unemployment is the fault of the government. Hence withdrawal gives way to anger. Over time this anger mitigates the withdrawal effects of joblessness and makes the unemployed more likely to vote. But people who lose their jobs in a low-unemployment context are prone to blame (or “beat up

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<sup>5</sup>The interview with the unemployed person is from Halvorsen (1980).

on”) themselves, so the withdrawal effects persist.

This logic can be illustrated with a simple formalization. At time  $t = 0$ , assume that citizen  $i$  is employed and she votes with a probability  $v_0 = x$ . At time  $t = 1$ , she will either keep her job ( $E_1 = 1$ ) or lose it ( $E_1 = 0$ ). If she keeps her job, she continues to vote with probability  $v_1 = x$ . If she loses her job, she experiences withdrawal emotions and votes with a reduced probability of  $v_1 = x - d$ .<sup>6</sup>

An election occurs at time  $t$ . If  $E_t = 1$ , citizen  $i$  votes with probability  $v_t = x$ . If  $E_t = 0$ , citizen  $i$  votes with probability  $v_t = x - d + \ln(p)a$ , where  $a$  is the anger-inducing effect of politicization of unemployment. Unemployed people are much more sensitive to this effect than the employed,<sup>7</sup> and the effect is multiplied by  $\ln(p)$ , where  $p = t - \max(\tau, \text{s.t. } E_\tau = 1)$ . Thus, for each additional period in which citizen  $i$  is unemployed and exposed to politicization, she accumulates additional anger and  $v_t$  increases. If unemployment is low, it is not politicized, and  $a = 0$ . Figure 1 provides a graphical representation of turnout probabilities for a given instance of this framework. The figure looks a good deal like the probability of voting that we estimate for the unemployed in high-unemployment settings, as the next section explains.

### 3 Recessions and the Waning Effects of Unemployment: Evidence from CPS

The Current Population Survey is conducted monthly as a joint project of the U.S. Census Bureau and the U.S. Bureau of Labor Statistics to collect U.S. labor force statistics.<sup>8</sup> The percentage of the labor force that is unemployed in the CPS sample closely reflects the actual unemployment rate as estimated by the Bureau of Labor Statistics.<sup>9</sup>

The CPS sample size is very large, averaging about 112,000 interviews across the 18

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<sup>6</sup>We assume, for simplification of notation, that the individual loses her job at most once between time  $t = 0$  and the election.

<sup>7</sup>Employed people may perceive the unemployment rate as symptomatic of their own possibilities of losing their jobs, but it is reasonable to suppose that campaign discussions of unemployment are especially poignant for people who have lost their jobs.

<sup>8</sup>Another study of political behavior that makes extensive use of CPS data, as Rosenstone’s and Incantalupo’s, is Leighley and Nagler (2013).

<sup>9</sup>See Figure 8 in the appendix. Compared to the BLS November estimates, the CPS sample consistently underestimates the unemployment rate by a very small margin (on average, the rate within the sample is 8% lower than the BLS estimates).



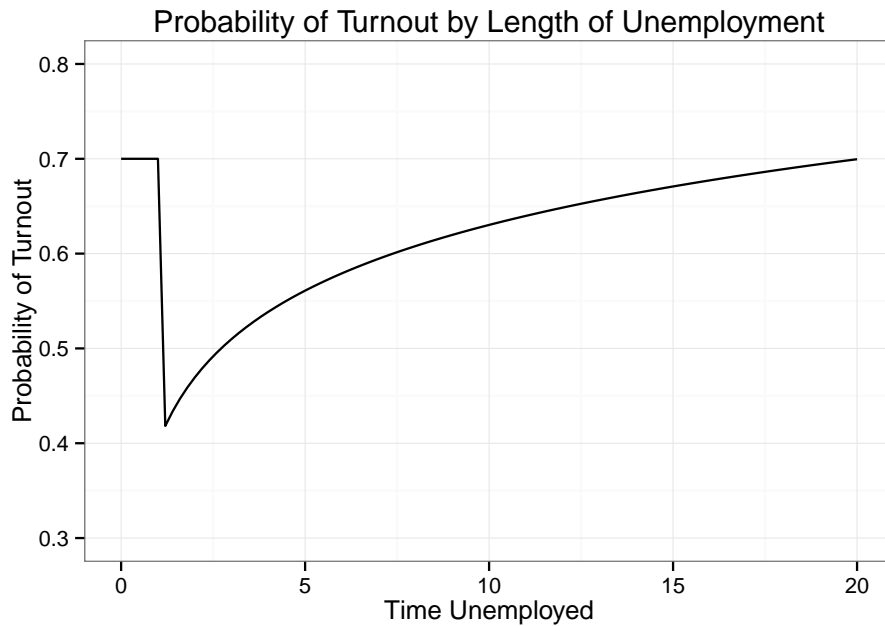


Figure 1: Hypothetical turnout probabilities as a function of the length of unemployment prior to an election, where  $x = 0.7$ ,  $d = 0.3$ ,  $a = 0.1$

studies we analyzed.<sup>10</sup> Therefore a sizeable number of unemployed people are interviewed. In the lowest unemployment year in the sample, 2000, the sample still included more than 2,300 unemployed people. (See Figure 6 in Appendix C.)

CPS collects data on voting and voter registration in November of election years (both mid-term congressional and presidential). Figure 7 in Appendix C compares the reported turnout in our sample to the actual turnout in each election. The reported turnout rate in the CPS sample is higher than actual turnout from 1974-1998 (by about 12 points annually) and lower than actual turnout from 2000-2010 (by about 20 points in presidential elections and about 10 points in midterms). It is unclear why the shift from over- to underestimating turnout occurred; but the gap between reported and observed turnout speaks to the value of surveys with verified turnout, such as recent British Election Studies, which we make use of in the following section.

We estimated 18 probit models, predicting probabilities that an individual would vote in each election from 1974-2010.<sup>11</sup> The dependent variable is self-reported turnout. Our key

<sup>10</sup>The range is from about 78,000 to 160,000, with a median of 99,000.

<sup>11</sup>1988 is excluded due to missing data.

independent variables are unemployment and length of unemployment. *Unemployed* is a binary variable, coded 0 if the respondent is currently employed and 1 if the respondent is currently unemployed and looking for work. Thus, our sample is limited to people in the labor force. Table 1 lists the effects of unemployment and the length of unemployment. For the sake of space and ease of interpreting our main results, we list only our key variables in Table 1, but these estimates come from regressions in which we control for income, education, age, and marital status and include dummy variables for student status, living in a southern state, and African-American voters. The full regressions with all controls are included in Appendix A, Tables 10-12.<sup>12</sup>

Table 1: Unemployment Effects on Voting: Key Variables

Year	1974	1976	1978	1980	1982	1984	1986	1990	1992
Unemployed	-0.228	-0.251	-0.272	-0.192	-0.220	-0.209	-0.196	-0.225	-0.144
<i>p</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Weeks	0.009	0.032	0.027	0.012	0.036	0.033	0.030	0.010	0.006
<i>p</i>	0.037	0.004	0.080	0.302	0.000	0.000	0.003	0.004	0.058
Weeks <sup>2</sup>	-0.008							-0.011	-0.005
<i>p</i>	0.169							0.007	0.145
Unem. Rate	6.6	7.8	5.9	7.5	10.8	7.2	6.9	6.2	7.4

Year	1994	1996	1998	2000	2002	2004	2006	2008	2010
Unemployed	-0.281	-0.209	-0.131	-0.212	-0.254	-0.15	-0.211	-0.112	-0.081
<i>p</i>	0.012	0.070	0.274	0.000	0.000	0.000	0.000	0.002	0.022
Weeks	0.030	-0.036	0.035	0.002	0.011	0.003	0.003	0.003	0.003
<i>p</i>	0.197	0.154	0.114	0.626	0.000	0.241	0.371	0.351	0.098
Weeks <sup>2</sup>	-0.037	0.076	-0.047	-0.002	-0.011	-0.002	0.001	-0.002	-0.002
<i>p</i>	0.507	0.193	0.283	0.746	0.001	0.470	0.756	0.388	0.183
Unem. Rate	5.6	5.4	4.4	3.9	5.9	5.4	4.5	6.8	9.8

<sup>12</sup>For the years 1974 and 1990-2010, length of unemployment is measured in weeks unemployed. For the years 1976-1986, we only have categorical data on length of unemployment, hence the larger-on-average coefficients during these years. The interpretation of the categorical variable in terms of weeks is listed in Table 2.

We replicate Rosenstone’s finding of a waning negative effect of unemployment in the 1974 elections: although unemployment has a negative effect on voting, the duration of the spell of unemployment at the moment of the election has a positive effect. Thus, the more weeks people were unemployed, the more closely their probability of voting rebounds to the level of people who did not lose their jobs. Yet this is a variable result, as illustrated in Figure 2. It plots the effect of unemployment on probabilities of voting against the length of unemployment for two presidential elections in two years, 1992 and 2000. In 1992, the unemployment rate was 7.4%; in 2000 it was 3.9%, the lowest in our sample. The same waning effect that Rosenstone uncovered for 1974 appears in 1992. The marginal effect of unemployment is a decrease of 4.2 percentage points in the probability of voting. The marginal effect of an additional week of unemployment, however, is an increase of 0.2% points in the probability of voting (and  $\frac{\text{Weeks}^2}{100}$  has a marginal effect of -0.4%). According to our 1992 estimates, then, once someone has been unemployed for about 10 months, we expect them to vote with the same probability as they would have if they had been employed.

In 2000, when unemployment was very low, we find no waning. The equation that results from our 2000 estimates of marginal effects never yields a  $y$  of 0; unemployment decreases the probability of voting by 7% points, and weeks unemployed is associated with an increase of only 0.07% points, with a decrease of 0.05% points from the squared term. The maximum of the resulting equation is around 4.6, meaning that no matter how long someone has been unemployed, their probability of voting is at least 4.6% points lower than if they were employed (versus 7% when they have first lost their job). And it takes 70 weeks to reach this maximum.

Indeed, the correlation between the unemployment rate in election years and the existence

Categorical Value	Number of Weeks
0	0
1	1-4
2	5-6
3	7-10
4	11-14
5	15-26
6	27-39
7	40-51
8	52+

Table 2: Length of unemployment variable for years 1976-1986 in terms of weeks

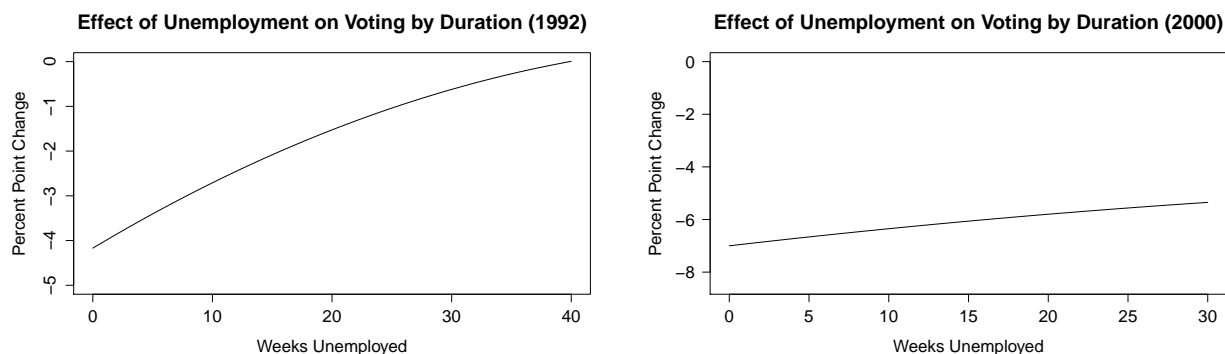


Figure 2: Marginal Effect of Unemployment by Duration: When unemployment has a waning effect (e.g., 2002), we see that the longer one is unemployed, the smaller the negative effect of unemployment on voting probability. Here we plot the expected change in the likelihood of voting from being unemployed for a given number of weeks versus being employed, holding all else constant.

of a waning effect is close. Figure 3 plots the unemployment rates in November of each election year. With the exception of two outliers, the graph can be partitioned into two sections, with all years above an unemployment rate of 5.7% exhibiting the waning effect of unemployment, and all years with an unemployment rate below this cutoff exhibiting no evidence of a waning effect. The boundary of this partition is not surprising, as the Federal Reserve’s estimate of the natural unemployment rate had a range of around 5-6% during the interval of time studied.

Our results are robust to changes in the reference point for the unemployment rate and to the functional form estimated. Figure 3 plots the unemployment rates for November of election years; but the graph is largely unchanged when we use the unemployment rates for different months leading up to the election or averages of the unemployment rates throughout the year leading up to the election. We also estimated models that substituted  $\ln(\text{Weeks} + 1)$  for  $(\text{Weeks} + \frac{\text{Weeks}^2}{100})$ . Using the natural log form, most of our results are unchanged – all of the years with waning effects remained significant, and a few additional years exhibited some evidence of a waning effect. The most surprising change was that the logged term attained statistical significance for the year 2000, our lowest unemployment year. But the substantive significance of the effect in 2000 was so small that a person would have to have been unemployed for 3,700 weeks to get to the point at which she would turn out with the same probability as a person who

never lost her job – 72 years! For all other years with a waning effect, the point of equal voting probabilities occurs in less than two years.

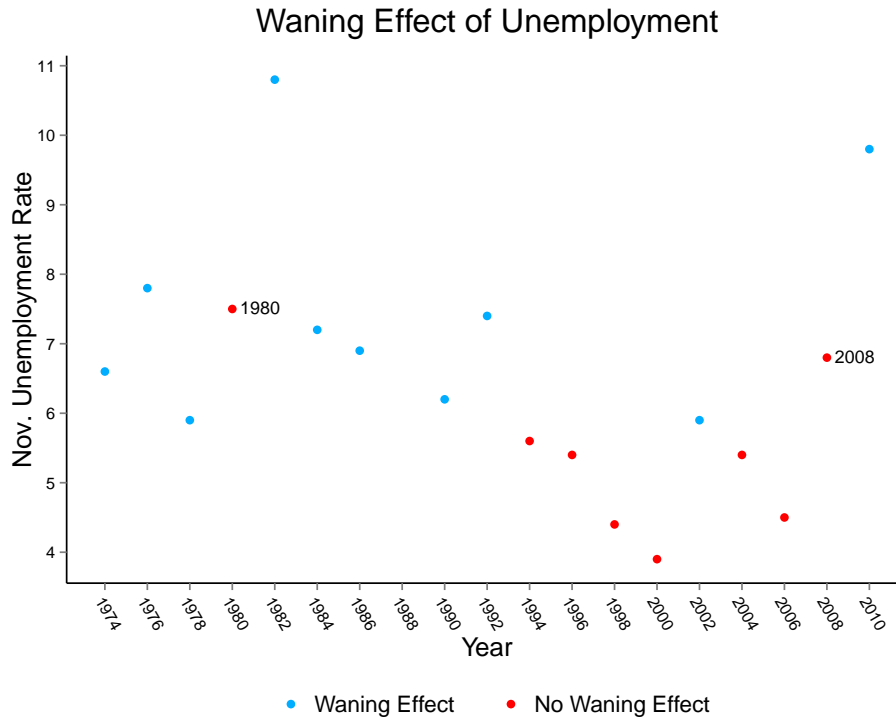


Figure 3: “Waning Effect” indicates that *Weeks Unemployed* is significant at the 10% level or lower.

One could imagine that not the level of unemployment and its politicization but the composition of the unemployed is what drives the dynamics of turnout. It might be that people who lose their jobs during recessions are more “employable” and anticipate that they will be re-employed soon, and therefore become less withdrawn from politics. But this hypothesis does not account for the initial negative effect of unemployment on turnout – people who lost their jobs during recession periods initially withdraw from politics as well. Also note that the statistical models we estimate with the CPS datasets include a large array of demographic controls, such as for race, the type of job previously held, age, income, marital status and several others that tend to be related to a person’s employability. And there is no systematic difference in terms of

respondents' average duration of unemployment across the years when we observe the waning effect and when we do not.

#### **4 Emotions and Turnout: American and British Election Studies**

We have shown that the job-market context matters in the political behavior of unemployed people in the U.S. In this section we turn to public opinion surveys to probe the connection between subjective reactions to the economy and turnout, in studies with verified voting, which greatly reduces the error in measuring the dependent variable. The data analyzed here also allow us to make useful comparisons – between a non-recession and Great Recession context in the U.K., and, cross-nationally, between the U.K. and the U.S. Since there is nothing exceptionally American in the logic of challengers' politicization of unemployment when the rate is high, or in the connection between anger and participation among voters, it is gratifying to find that our story travels well to the British context.

We turn first to the British Election Study of 2010. BES 2010 is one of the few nationally representative surveys with a validated turnout measure, and it includes questions about the respondents' feelings on politically salient issues. (But, unlike CPS, the sample is too small to pick up many unemployed people; therefore our analysis is of the employed and the unemployed.) A question in the pre-election wave of the BES 2010 probes respondents' emotional reactions towards the state of the economy, a very salient issue in the aftermath of the financial crisis of 2008-2009. Respondents were asked to indicate the words that describe their "feelings about the country's general economic situation," and offered the following options: angry, happy, disgusted, hopeful, uneasy, confident, afraid, and proud. In the context of the Great Recession, it is not surprising that many people declared feeling uneasy (58%), disgusted (25%), and angry (23%) about the state of the British economy.<sup>13</sup> The corresponding figures in the BES 2005, a period of better economic conditions, were much lower. A mere seven percent said they were angry about the economy in 2005.<sup>14</sup>

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<sup>13</sup>Respondents were able to choose multiple options.

<sup>14</sup>In 2005, 39% said they were uneasy (versus 58% in 2010), and nine percent said they were disgusted, against

We consider the effects of anger on turnout in Table 3. Model (1) presents a traditional model of turnout. Older individuals, those with higher incomes and more education, married people and union members were more likely to vote; people receiving unemployment benefits and belonging to minority groups were less likely to do so.<sup>15</sup> Having a sense of civic duty increases the likelihood of turnout as well.<sup>16</sup> These results are in line with what is known about the correlates of turnout. In Model (2) we add the variable *Anger*, a binary variable indicating respondents who report feeling angry about the economy, to the traditional specification. We see that even after controlling for the most widely-used correlates of turnout, respondents who felt angry about the economy were more likely to turn out to vote. The size of the effect of being angry on turnout is comparable to that of being married, about six percentage points increase in the probability of voting.<sup>17</sup>

Evidence for the relationship between feeling angry about a politically salient issue and turnout would be stronger if we could show that the mobilizing effect is stronger among individuals who feel this emotion more intensely. In BES 2010, while we can identify the individuals who feel angry about the state of the economy, there is no question that probes the intensity of the feeling. But respondents were asked to identify the “single most important issue facing the country at the present time,” an open-ended question. About 51% of respondents considered the economy as the most important issue.<sup>18</sup> It is reasonable to think that respondents who consider the economy as the most important issue *and* report being angry about it have more intense feelings than respondents who are angry about the economy but do not consider it as the most important issue. In Model (3) of Table 3 we limit the analysis to respondents who considered

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25% in 2010. Certainly the Great Recession took a toll on the nation’s economic mood.

<sup>15</sup>BES does not probe the employment status of respondents in the sample. The closest question that might tap the employment status of respondents is a question on the main source of income for the respondent at present, with “Jobseeker’s allowance / Unemployment benefit” being one of the answer choices. Respondents who do not consider themselves as “White British” are coded as minority.

<sup>16</sup>Civic Duty refers to respondent’s agreement or disagreement with the statement “it is every citizen’s duty to vote in an election,” coded from 1=strongly disagree to 5=strongly agree.

<sup>17</sup>The average predicted probability of voting calculated from Model (1) using the sample values of the other predictor variables is 0.68 for individuals who did not report being angry and 0.74 who did so.

<sup>18</sup>About 26% of respondents gave answers that were coded as “state of the economy”, 13% “the current financial crisis”, 10% “unemployment,” and 2% “inflation, prices generally.” Putting these answers together indicates that 51% of respondents gave economy-related answers.

Table 3: The Effect of Anger on Turnout – BES 2010

DV: Turnout	(1)		(2)		(3)	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Age	0.03***	(0.005)	0.03***	(0.005)	0.02**	(0.01)
Married	0.32**	(0.14)	0.30**	(0.14)	0.34*	(0.20)
Education	0.16***	(0.06)	0.17***	(0.06)	0.27***	(0.08)
Income	0.06***	(0.02)	0.06***	(0.02)	0.02	(0.03)
Union Member	0.46**	(0.19)	0.46**	(0.19)	0.45*	(0.24)
Unemp. Benefit	-0.68*	(0.37)	-0.71*	(0.38)	-0.82	(0.61)
Minority	-0.58**	(0.23)	-0.54**	(0.23)	-0.39	(0.34)
Civic Duty	0.40***	(0.06)	0.41***	(0.06)	0.42***	(0.09)
Angry (Economy)			0.33**	(0.17)	0.58**	(0.25)
Constant	-3.04***	(0.39)	-3.13***	(0.40)	-2.93***	(0.55)
Observations	1490		1490		786	

Logistic regressions with standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

the economy as the most important problem. We see that for these respondents the mobilizing effect of anger is stronger than in the overall sample – among the respondents who consider the economy as the most important problem, respondents who feel angry about the economy are about ten percentage points more likely to vote than respondents who did not feel angry.

In addition to the economy, a considerable portion of respondents in BES 2010 declared feeling angry about immigration (about 26%) and about the war in Afghanistan (about 31%).<sup>19</sup> Yet these issues were much less salient than the economy - only 14% and 6% of respondents considered immigration and the war in Afghanistan as the most important issue, respectively (compared to 51% for the economy). In Table 4 we test whether feeling angry about immigration (Model 1) and about the war in Afghanistan (Model 2) have independent effects on one's likelihood of voting after controlling for traditional correlates of turnout. They do not: even though a similar percentage of respondents were angry about immigration or about the war in Afghanistan as about the economy, feeling angry about the former two issues was not associated with increased likelihood of turnout. The likely reason is that these issues were not as salient as

<sup>19</sup> Respondents were also asked how they felt about the National Health Service, but only a small percentage of respondents (about 9%) declared feeling angry about it.



Table 4: The Effect of Anger on Turnout – BES 2010

DV: Turnout	(1)		(2)		(3)	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Age	0.03***	(0.005)	0.03***	(0.005)	0.04***	(0.01)
Married	0.32**	(0.14)	0.32**	(0.14)	0.45	(0.33)
Education	0.16***	(0.06)	0.17***	(0.06)	-0.003	(0.12)
Income	0.06***	(0.02)	0.06***	(0.02)	0.10*	(0.05)
Union Member	0.46**	(0.19)	0.46**	(0.19)	0.84**	(0.42)
Unemp. Benefit	-0.68*	(0.37)	-0.68*	(0.37)	-0.26	(0.75)
Minority	-0.58**	(0.23)	-0.58**	(0.23)	-0.59	(0.56)
Civic Duty	0.40***	(0.06)	0.40***	(0.06)		
Angry (Immigration)	-0.01	(0.17)				
Angry (War)			0.08	(0.15)		
Angry (Either)					0.50	(0.31)
Constant	-3.04***	(0.41)	-3.08***	(0.40)	-2.54***	(0.82)
Observations	1490		1490		291	

Logistic regressions with standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

the economy. This interpretation is bolstered by the observation that if we limit the analysis to the respondents who considered immigration or the war in Afghanistan as the most important issue (Model 3), the coefficient estimate for the effect of feeling angry about either of these issues on turnout is much larger and verges on statistical significance (0.50,  $p = 0.11$ ). A larger sample would probably result in a statistically significant result, given the size of the coefficient estimate.

It is instructive to compare BES 2010 with BES 2005. The 2005 British general election took place against a much more robust economy than in 2010. Whereas 51% of respondents in 2010 considered the economy as the most important issue facing Britain, a mere seven percent thought so in 2005. And many more respondents had negative feelings about the economy in 2010 than in 2005; conversely, more people reported upbeat feelings (e.g., happy, confident) in 2005 (Table 5).

We would expect the economy to elicit less anger and to play a smaller role in their turnout decision in 2005, given the low salience of the economy as a problem. In Table 6 we consider the effect of anger. In Model (1) we see that anger does not affect on respondents'

Table 5: Prevalence of Feelings about the Economy, BES 2005 and 2010

<i>Which, if any, of the following words describe your feelings about the country's general economic situation?</i>	<b>2005</b>	<b>2010</b>
Angry	7%	23%
Disgusted	9%	25%
Uneasy	39%	58%
Afraid	8%	17%
Happy	14%	1%
Hopeful	38%	25%
Confident	13%	3%
Proud	1%	0.4%

*Note:* Respondents could choose multiple feelings in both surveys.

likelihood of voting in the overall sample. In Model (2) we restrict the analysis to individuals who considered the economy as the most important issue facing Britain (7% of the sample), and now the coefficient of *Angry (Economy)* is much larger, although we are unable to estimate the parameter efficiently given the low sample size.

#### 4.1 American National Election Survey

The ANES 2010 survey asks a series of questions about emotions with regard to the current direction of the country. They follow the format of “Generally speaking, how [Emotion] do you feel about the way things are going in the country these days?” Each is coded from 1-5.

The survey also asks specifically about economic concerns. *Financial Worry* asks respondents how worried they are about their own financial situation. *Economic Prediction* asks respondents about their expectations about the state of the economy one year later – will it be better (1), the same (2), or worse (3)? We ran a series of regressions where the dependent variable is likelihood of voting in the upcoming election, self-reported as a percentage, and find that anger makes one more likely to vote, while concern for one’s own financial situation makes one less likely to vote (Table 7). We also ran regressions replacing anger with fear and hope; fear also has a positive coefficient, though the magnitude is only about 60% of that of anger, and fear is only

Table 6: The Effect of Anger on Turnout – BES 2005

DV: Turnout	(1)		(2)	
	Coefficient	SE	Coefficient	SE
Age	0.03***	(0.004)	0.03**	(0.01)
Married	0.45***	(0.11)	-0.12	(0.42)
Education	0.09**	(0.04)	0.15	(0.14)
Income	0.04**	(0.02)	0.12*	(0.07)
Union Member	0.23*	(0.13)	0.70**	(0.48)
Unemp. Benefit	-0.39	(0.32)	0.64	(1.02)
Minority	-0.52***	(0.18)	-0.70	(0.65)
Civic Duty	0.40***	(0.05)	0.38*	(0.21)
Angry (Economy)	-0.01	(0.20)	1.01	(0.81)
Constant	-3.11***	(0.30)	-3.96***	(1.08)
Observations	3052		230	

Logistic regressions with standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

significant at the 0.05 level rather than 0.01. Hope is insignificant with a coefficient only about 25% of the anger coefficient. When all three emotions are included in the same regression, anger maintains its significance and approximate coefficient. Fear loses significance and shows a large drop in magnitude. Hope attains significance at the 0.05 level, and increases in magnitude to about 60% of the anger coefficient. Thus, across models, anger is best predictor of reported turnout among the emotions tested.

Consistent with our expectations, then, in the 2010 ANES, anger about the government and country in general increases reported intent to turn out, whereas concern for one's own financial situation decreases turnout. Moreover, negative expectations for the economy are also negatively correlated with turnout.

## 5 Politicization and Anger Among the Unemployed: A Survey Experiment

To more directly test the politicization and anger mechanism proposed by our theory, we conducted a survey experiment with a convenience sample of self-identified unemployed and

Table 7: Likelihood of Voting in 2010 US Elections

	(1)	(2)	(3)	(4)
Income	0.339* (0.183)	0.327* (0.184)	0.363** (0.184)	0.356* (0.183)
Age	0.0441** (0.0213)	0.0461** (0.0214)	0.0456** (0.0214)	0.0426** (0.0213)
Education	4.233*** (0.697)	4.218*** (0.700)	4.106*** (0.702)	4.158*** (0.698)
Black	1.095 (2.686)	0.650 (2.698)	-0.410 (2.723)	0.370 (2.710)
Hispanic	-12.73*** (3.192)	-13.02*** (3.204)	-13.15*** (3.211)	-12.89*** (3.190)
Other, non-white	-5.248 (3.445)	-6.008* (3.452)	-6.538* (3.465)	-5.650 (3.447)
Republican	8.038*** (1.674)	8.098*** (1.685)	8.644*** (1.688)	8.263*** (1.680)
Democrat	4.168** (1.656)	3.693** (1.657)	3.158* (1.672)	3.765** (1.666)
Financial Worry	-1.618** (0.641)	-1.479** (0.651)	-1.021 (0.634)	-1.638** (0.650)
Economic Pred.	-1.761* (0.990)	-1.334 (0.998)	-0.334 (1.018)	-1.243 (1.033)
Anger	2.709*** (0.622)			2.858*** (0.759)
Fear		1.684** (0.657)		0.398 (0.802)
Hope			0.701 (0.799)	1.780** (0.833)
Constant	61.92*** (4.297)	64.40*** (4.269)	64.58*** (4.868)	55.52*** (5.233)
Observations	1,522	1,522	1,522	1,522
R-squared	0.087	0.080	0.076	0.090

Standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

underemployed individuals,<sup>20</sup> on Amazon’s online platform, Mechanical Turk. We randomly assigned individuals to one of three vignette-based treatments, designed to mimic the effects of distinct unemployment contexts. A fourth group was randomly assigned to a control, where they answered the outcome questions without reading the vignettes. The first vignette probed whether people’s emotional reactions and willingness to participate were sensitive to their perceptions of the level of unemployment, without any further prompting to think about joblessness as a political issue. The second vignette emphasized the human cost of unemployment; again we were interested in whether such emphasis on its own produced an angry response among the unemployed and made them more likely to participate. The third treatment used the same language as the second one and also blamed the government for unemployment. Our theoretical expectation was that the third treatment would elicit greater anger among our unemployed subjects and boost their willingness to vote in the upcoming election.

Respondents (except those in the control group) read one of the following vignettes and then answered questions about their emotional states and their likelihood of voting in the 2016 U.S. general presidential election.

*Treatment 1: The official unemployment rate, as reported by the U.S. Department of Labor, is misleading. If you, a family member or anyone is unemployed and has given up on finding a job, you are not counted officially as unemployed. Taking into account people who have tried to find a job but given up, the unemployment rate is not 5 percent, but closer to 11 percent.*

*Treatment 2: Please read the following excerpt from a newspaper report about a woman who lost her job: “From May until November, Ms. Smith worked a seasonal job at the parks department. She spends her days sending out resumés that emphasize her bachelor’s degree, which she received in January 2008, and her computer skills. ‘I have to keep telling myself that I’m not a loser,’ she said.”*

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<sup>20</sup>Our sample of underemployed people consists of those who indicated that they are currently working part-time and seeking full-time work.

*Treatment 3: Please read the following excerpt from a newspaper report about a woman who lost her job: “From May until November, Ms. Smith worked a seasonal job at the parks department. She spends her days sending out resumés that emphasize her bachelor’s degree, which she received in January 2008, and her computer skills. ‘I have to keep telling myself that I’m not a loser,’ she said.”*

*Some economists emphasize that there is a lot that the government can do to help create jobs and support firms that would like to hire workers. Rather than being a purely economic issue, unemployment is mainly a political issue—so if the level of unemployment is high and there are lots of people who lost their jobs, politicians and the government share much of the blame.*

To evaluate how our treatments influenced the emotional state of our respondents, we draw on a tool widely used by psychologists, the Positive and Negative Affect Schedule (PANAS) (Watson, Clark and Tellegen 1988). We asked respondents to think about their current unemployed status and indicate the extent to which they feel a number of emotions, including anger, on a five-point scale, ranging from “very slightly/not at all” (coded 1) to “extremely” (coded 5).

Table 8: Treatment Effects on Unemployed/Underemployed People

	Anger	Gov. power	Unem. Level	Vote 2016	Vote 2016
Treatment 1	-0.1023 (0.1371)	0.0099 (0.05915)	0.4411*** (0.1245)	-0.0004 (0.1084)	0.0854 (0.0914)
Treatment 2	-0.1487 (0.1373)	0.0254 (0.0588)	0.2184 (0.1435)	-0.0933 (0.1090)	-0.0207 (0.0926)
Treatment 3	0.2874** (0.1416)	-0.0080 (0.0607)	0.2508* (0.1506)	-0.0230 (0.1123)	0.0464 (0.0960)
Vote 2012					1.0943*** (0.0700)
Intercept	2.1487*** (0.0974)	0.6515*** (0.04142)	3.4000*** (0.1018)	3.473*** (0.0769)	2.6983*** (0.0816)
DF	578	500	361	564	539

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Key results are reported in Table 8. As predicted, people in Treatment 3 reported higher average levels of anger than in the control group; and this was the only treatment that led to a spike in anger. Yet notice also that the reason was not that they had a greater appreciation for the role of government in unemployment: when we asked the following question, post-treatment, the average response of people in the third treatment group did not significantly differ from the average in the control group.

(Variable: *Gov. Power*)

*Question: Some think that there isn't much a government can do about the level of unemployment in a country, that it is mainly an issue of economics. Others disagree, thinking that unemployment is mainly a political issue—something that governments can do much about. Which of these two views are you closest to?*

Hence the emotional response of people in Treatment 3 appears to have been driven not by information but by salience, a point we return to in the discussion.

Post-treatment, we asked respondents to indicate how high they believe the current unemployment rate is (on a scale from very low to very high). We posed this as a manipulation check for Treatment 1. And indeed, those who received Treatment 1 did see the unemployment rate as higher than those in the control; the difference is statistically significant at the 0.001 level.<sup>21</sup> Yet, thinking about the rate as high, without any mention of government and politicians' responsibility, did not translate into higher levels of anger. This same phenomenon is visible among the second treatment group: being reminded of the human costs of unemployment did not elicit these subjects' anger; the added ingredient of politicians' responsibility for unemployment, only present in Treatment 3, was necessary to spark their anger.

Notice as well that people in the *blame-the-government*, third treatment group also, on average, viewed the unemployment rate as higher than those in the control. The effect was not as strong as in Treatment 1, in which the subjects were explicitly told that the unemployment rate

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<sup>21</sup>Among the sample of unemployed/underemployed people, the effect was a 0.44 point increase on the 5-point scale.

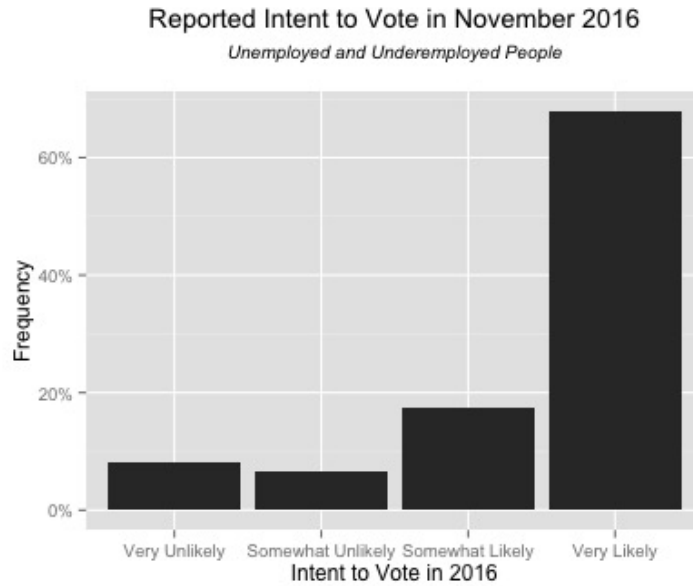


Figure 4: Well over 50% of respondents indicated that they were “Very Likely” to vote in the 2016 elections, leaving limited variation in intent to turn out.

was higher than is usually reported.<sup>22</sup> But this impact on perceptions, as well as the predicted one on emotional reactions, is notable. We return to this point in the conclusions.

We were unable to identify any effects of the treatments on intent to vote in the November 2016 election. The likely reason, as Figure 4 illustrates, was the lack of variation in reported intent to vote. The setting may be important: we conducted the survey in April 2016, at the height of an attention-grabbing primary season. Approximately 67% of respondents indicated that they were “Very Likely” to vote in the upcoming election, the highest value on our 4-point scale.

Respondents in Treatment 3 indicated overall higher levels of anger than the control group and both of the other treatments (See Figure 5 in Appendix B).<sup>23</sup> Table 9 shows the treatment effects on anger with demographic and political controls. Treatment 3 maintains a positive and significant effect on anger, controlling for basic demographic characteristics, past turnout (whether respondents voted in the 2012 election), level of interest in politics, and a pre-treatment

<sup>22</sup>The difference in perceptions of the unemployment rate between Treatments 1 and 3 is significant at the (p=0.146) level.

<sup>23</sup>The mean for Treatment 3 was 2.44, versus 2.06 across all other groups. Within the control group, the mean value for anger was 2.15; for Treatment 1, the mean was 2.05; for Treatment 2, the mean was 2.



question about whether they believe the country is headed in a good or bad direction.

Table 9: Treatment Effects on Anger with Controls

	Anger	Anger	Anger	Anger
Treatment 1	-0.0306 (0.1384)	-0.0893 (0.1359)	-0.0366 (0.1382)	-0.0459 (0.1416)
Treatment 2	0.3168** (0.1447)	0.2791** (0.1402)	0.3098** (0.1445)	0.3183** (0.1466)
Treatment 3	-0.1302 (0.1396)	-0.1387 (0.1361)	-0.1246 (0.1394)	-0.2108 (0.1425)
Sex	0.0905 (0.0981)	0.1417 (0.0943)	0.1061 (0.0983)	0.1525 (0.1004)
Age	-0.0002 (0.0048)	-0.0031 (0.0047)	-0.0011 (0.0048)	-0.0069 (0.0049)
Education	0.1055*** (0.0386)	0.1092*** (0.0371)	0.1047*** (0.0386)	0.1083*** (0.0390)
Vote 2012	0.0518 (0.1081)		-0.0066 (0.1132)	0.0751 (0.1158)
Interest in Politics		0.1280** (0.0646)	0.1178* (0.0689)	0.1205* (0.0706)
Country's Direction				-0.2723*** (0.0670)
Intercept	1.5273*** (0.2449)	1.2099*** (0.3020)	1.2038*** (0.3092)	1.8758*** (0.3513)
DF	550	574	549	519

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## 6 Conclusions

We began by noting a gap between Rosenstone's economic interpretation of the impact of unemployment on participation and the emotional words of an unemployed person whom he quoted. Whereas Rosenstone wrote about "the return" from attending to unemployment being greater than the "return from participating in politics," and therefore "the opportunity costs of participation" being higher, the man who had lost his job talked about gradually quitting "beating yourself" up and recovering "some of your confidence." Our evidence suggests that it is not time budgets but psychological processes that account for the dynamics of turnout among the unemployed. It's not so much that the weeks after losing one's job are busy as that they are a period of withdrawal and self-doubt, as has been copiously shown by social psychologists. Undoubtedly there is some natural adjustment to the new status quo, like (in the words of the man cited) the adjustment to a new limp. But the shift from withdrawal to more active emotions can be much accelerated by ambitious politicians. Challengers see high rates of joblessness as an opportunity to blame the government. This framing can transform withdrawal into anger, and angry people are much more easily mobilized people.

Our research design enables us to delve into the mechanism underlying the differential effects of unemployment on turnout and to rule out some rival explanations. For example, Incantalupo (2011: 7) also makes a distinction between low-unemployment and high-unemployment contexts, and argues that "unemployment becomes a socially-centered and politicized issue in high-unemployment contexts and should contribute to political mobilization." While he acknowledges the role of politicization, he does not explain how it works on unemployed would-be voters (or abstainers). Our survey experiment shows that telling unemployed people that there are many others in their same situation (our first treatment) does not necessarily spark their anger by itself; nor does emphasizing the human costs of job loss. Only offering a political target to blame, in the form of politicians and the government, triggers their anger.

Our experiment produced some unexpected and intriguing results. We designed the

*blame-the-government* vignette so as to shape respondents' beliefs about the connection between politicians' actions and job-market conditions and thus elicit their anger. But the treatment angered them *without* changing their beliefs. It seems that salience, rather than new information or beliefs, was the key effect of the treatment. And though there was nothing in the politicization treatment to encourage people to think of the unemployment rate was high, it did in fact have this effect. In this case it may be that the emotion (anger) induced the factual perception (high unemployment), rather than the other way around. As students of political behavior delve more deeply into the human psychology of participation, we still have much to learn about subjective states, factual perceptions, and action.

## Appendix A: Full CPS Regression Results

Table 10: Probit Results: Probability of Voting, 1976-1984

Year	1974	1976	1978	1980	1982	1984
Unemployed	-0.228*** (0.0401)	-0.251*** (0.046)	-0.272*** (0.0539)	-0.192*** (0.044)	-0.220*** (0.0337)	-0.209*** (0.0378)
Weeks	0.00934** (0.00447)	0.0322*** (0.0112)	0.0270* (0.0154)	0.0116 (0.0112)	0.0363*** (0.00766)	0.0332*** (0.00909)
Weeks <sup>2</sup>	-0.00814 (0.00592)					
Income	0.0583*** (0.00261)	0.0494*** (0.00373)	0.0392*** (0.00392)	0.0314*** (0.00371)	0.0445*** (0.00234)	0.0532*** (0.00244)
Education	0.00391*** (0.0000898)	0.00561*** (0.000129)	0.00459*** (0.000133)	0.00579*** (0.00014)	0.00453*** (0.0000957)	0.00570*** (0.00011)
Age	0.0450*** (0.00266)	0.0285*** (0.00339)	0.0428*** (0.00343)	0.0313*** (0.00338)	0.0463*** (0.00266)	0.0262*** (0.00292)
Age <sup>2</sup>	-0.0161*** (0.00319)	0.00145 (0.00406)	-0.0103** (0.00402)	-0.00158 (0.00399)	-0.0156*** (0.00317)	0.00501 (0.00354)
Age x Unmarried	-0.318*** (0.0388)	-0.303*** (0.047)	-0.337*** (0.0456)	-0.335*** (0.0457)	-0.416*** (0.0354)	-0.384*** (0.038)
Sex	0.0593*** (0.0125)	0.0888*** (0.0161)	0.0407** (0.0169)	0.111*** (0.0168)	0.0738*** (0.0121)	0.171*** (0.0129)
South	-0.285*** (0.0132)	-0.0844*** (0.0168)	-0.253*** (0.0182)	-0.177*** (0.018)	-0.310*** (0.0133)	-0.155*** (0.0141)
Black	0.0922*** (0.0217)	0.116*** (0.0243)	0.151*** (0.0257)	0.118*** (0.0244)	0.273*** (0.0204)	0.316*** (0.0217)
Student						
Constant	-2.606*** (0.0554)	-2.196*** (0.0719)	-2.626*** (0.0739)	-2.165*** (0.0725)	-2.457*** (0.0548)	-2.076*** (0.0593)
Observations	48773	28469	26431	25990	49888	44846

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Table 11: Probit Results: Probability of Voting, 1986-1998

Year	1986	1990	1992	1994	1996	1998
Unemployed	-0.196*** (0.0417)	-0.225*** (0.0379)	-0.144*** (0.0369)	-0.281** (0.112)	-0.209* (0.115)	-0.131 (0.12)
Weeks	0.0304*** (0.0103)	0.0104*** (0.00364)	0.00552* (0.00292)	0.0296 (0.0229)	-0.0359 (0.0252)	0.0353 (0.0223)
Weeks <sup>2</sup>		-0.0113*** (0.0042)	-0.00481 (0.0033)	-0.0365 (0.055)	0.0764 (0.0587)	-0.0473 (0.044)
Income	0.0326*** (0.00254)	0.0333*** (0.00172)	0.0476*** (0.00193)	0.0436*** (0.00194)	0.0453*** (0.00211)	0.0373*** (0.00217)
Education	0.00437*** (0.000108)	0.00455*** (0.0000894)	0.00213*** (0.0000364)	0.00629*** (0.000132)	0.00194*** (0.0000377)	0.00150*** (0.0000357)
Age	0.0431*** (0.00291)	0.0538*** (0.00271)	0.0303*** (0.00291)	0.0507*** (0.00288)	0.0351*** (0.00322)	0.0500*** (0.00317)
Age <sup>2</sup>	-0.0115*** (0.00342)	-0.0256*** (0.00314)	-0.00279 (0.00343)	-0.0217*** (0.00327)	-0.00575 (0.00375)	-0.0186*** (0.00359)
Age x Unmarried	-0.459*** (0.0367)	-0.479*** (0.0312)	-0.432*** (0.0341)	-0.484*** (0.0324)	-0.501*** (0.0357)	-0.509*** (0.034)
Sex	0.0729*** (0.0132)	0.114*** (0.0109)	0.149*** (0.0118)	0.0868*** (0.0115)	0.136*** (0.0127)	0.0749*** (0.0124)
South	-0.167*** (0.0144)	-0.156*** (0.012)	-0.137*** (0.0129)	-0.191*** (0.0126)	-0.102*** (0.0139)	-0.216*** (0.0137)
Black	0.247*** (0.0209)	0.200*** (0.0197)	0.189*** (0.0211)	0.122*** (0.0212)	0.289*** (0.0235)	0.321*** (0.0228)
Student		0.171*** (0.0312)	0.471*** (0.0308)	0.276*** (0.0332)	0.437*** (0.0341)	0.299*** (0.0361)
Constant	-2.507*** (0.0611)	-2.673*** (0.0569)	-4.325*** (0.0766)	-2.620*** (0.0615)	-4.515*** (0.0841)	-4.497*** (0.0833)
Observations	41134	60473	59411	54012	47424	46884

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Table 12: Probit Results: Probability of Voting, 2000-2010

Year	2000	2002	2004	2006	2008	2010
Unemployed	-0.212*** (0.0464)	-0.254*** (0.04)	-0.150*** (0.0388)	-0.211*** (0.0463)	-0.112*** (0.0366)	-0.0813** (0.0354)
Weeks	0.00211 (0.00434)	0.0113*** (0.00295)	0.00342 (0.00292)	0.00331 (0.00371)	0.00253 (0.00271)	0.00309* (0.00187)
Weeks <sup>2</sup>	-0.00154 (0.00475)	-0.0111*** (0.00321)	-0.00215 (0.00298)	0.00118 (0.00379)	-0.00249 (0.00288)	-0.00231 (0.00174)
Income	0.0493*** (0.00196)	0.0391*** (0.00188)	0.0419*** (0.00173)	0.0371*** (0.00182)	0.0446*** (0.00181)	0.0343*** (0.00159)
Education	0.00692*** (0.000129)	0.00608*** (0.000116)	0.00738*** (0.000124)	0.00626*** (0.000119)	0.00709*** (0.000126)	0.00556*** (0.000108)
Age	0.0410*** (0.00287)	0.0400*** (0.0028)	0.0345*** (0.00271)	0.0397*** (0.00279)	0.0274*** (0.00269)	0.0417*** (0.00244)
Age <sup>2</sup>	-0.0202*** (0.00327)	-0.0134*** (0.00315)	-0.0162*** (0.00308)	-0.0122*** (0.0031)	-0.00952*** (0.00301)	-0.0195*** (0.00263)
Age x Unmarried	0.369*** (0.0323)	0.416*** (0.0288)	0.329*** (0.0302)	0.348*** (0.029)	0.128*** (0.0302)	0.314*** (0.0253)
Sex	0.164*** (0.0118)	0.0963*** (0.0108)	0.179*** (0.0112)	0.116*** (0.0112)	0.176*** (0.0115)	0.0626*** (0.0103)
South	-0.0297** (0.013)	-0.0511*** (0.0123)	-0.0783*** (0.0125)	-0.152*** (0.0124)	-0.0528*** (0.0128)	-0.131*** (0.0114)
Black	0.245*** (0.0204)	0.189*** (0.0195)	0.215*** (0.0204)	0.198*** (0.0208)	0.371*** (0.0215)	0.212*** (0.0178)
Student	0.209*** (0.0289)	0.162*** (0.0301)	0.255*** (0.0272)	0.245*** (0.0305)	0.187*** (0.0287)	0.251*** (0.0294)
Constant	-2.562*** (0.0603)	-2.791*** (0.06)	-2.197*** (0.0568)	-2.757*** (0.0606)	-2.044*** (0.0581)	-2.726*** (0.0552)
Observations	53270	63081	60502	58860	56566	68268

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## Appendix B: Survey Coding and Additional Information

*Interest in Politics:* In general, how interested are you in politics and public affairs?

1. Not interested at all
  2. Not very interested
  3. Somewhat interested
  4. Very interested
- NA. Don't know

*Country's Direction:* Generally speaking, do you think our country is headed in a good direction or a bad direction?

1. Very bad direction
  2. Somewhat bad direction
  3. Somewhat good direction
  4. Very good direction
- NA. Don't know

*Vote 2012:* Did you vote in the 2012 presidential election?

0. No
  1. Yes
- NA. Don't know

*Employment Status:* What is your current employment status?

1. Employed, full-time
2. Employed, part-time
3. Retired
4. Unemployed and looking for work
5. Student
6. Unemployed but not looking for work
7. Don't know

*Unemployed*

- 1 if *Employment status* = 4
- 0 otherwise

*Unem. Memory:* [Only asked if *Unemployment*=0] Was there a time when you were unemployed and actively seeking work?

0. No
1. Yes

*Treatment 1:* The official unemployment rate, as reported by the U.S. Department of Labor, is misleading. If you, a family member or anyone is unemployed and has given up on finding a job, you are not counted officially as unemployed. Taking into account people who have tried to find a job but given up, the unemployment rate is not 5 percent, but closer to 11 percent.

*Treatment 2:* Please read the following excerpt from a newspaper report about a woman who lost her job: "From May until November, Ms. Smith worked a seasonal job at the parks department. She spends her days sending out resumés that emphasize her bachelor's degree, which she received in January 2008, and her computer skills. 'I have to keep telling myself that I'm not a loser,' she said."

Some economists emphasize that there is a lot that the government can do to help create

jobs and support firms that would like to hire workers. Rather than being a purely economic issue, unemployment is mainly a political issue—so if the level of unemployment is high and there are lots of people who lost their jobs, politicians and the government share much of the blame.

*Treatment 3:* Please read the following excerpt from a newspaper report about a woman who lost her job: “From May until November, Ms. Smith worked a seasonal job at the parks department. She spends her days sending out resumés that emphasize her bachelor’s degree, which she received in January 2008, and her computer skills. ‘I have to keep telling myself that I’m not a loser,’ she said.”

*Anger:*

If *Unemployed*=1: Thinking about your current employment status as unemployed, the scale below consists of a number of words that describe different feelings and emotions. Please read each item and then select the appropriate answer. Indicate to what extent you feel this way right now, that is, at the present moment.

If *Unem. Memory*=1: Now please think of a time when you were unemployed. The scale below consists of a number of words that describe different feelings and emotions. Please read each item and then select the appropriate answer. Indicate to what extent you recall feeling these emotions when you were unemployed.

Otherwise: Now please imagine that you have lost your job. The scale below consists of a number of words that describe different feelings and emotions. Please read each item and then select the appropriate answer. Indicate to what extent you feel these emotions in thinking about being unemployed.

1. Very slightly/Not at all
2. A little
3. Moderately
4. Quite a lot
5. Extremely

*Gov. Power:* Some think that there isn’t much a government can do about the level of unemployment in a country, that it is mainly an issue of economics. Others disagree, thinking that unemployment is mainly a political issue—something that governments can do much about. Which of these two views are you closest to?

0. Unemployment is mainly an issue of economics – there isn’t much governments can do about it

1. Unemployment is mainly a political issue – governments can do a lot about it

*Vote 2016:* How likely is it that you will vote in the upcoming presidential election in November 2016?

1. Very unlikely
2. Somewhat unlikely
3. Somewhat likely
4. Very likely

*Unemployment Level:* How high do you think the unemployment rate is right now?

1. Very low
2. Somewhat low
3. About normal
4. Somewhat high
5. Very high



## Anger by Treatment

*Unemployed and Underemployed People*

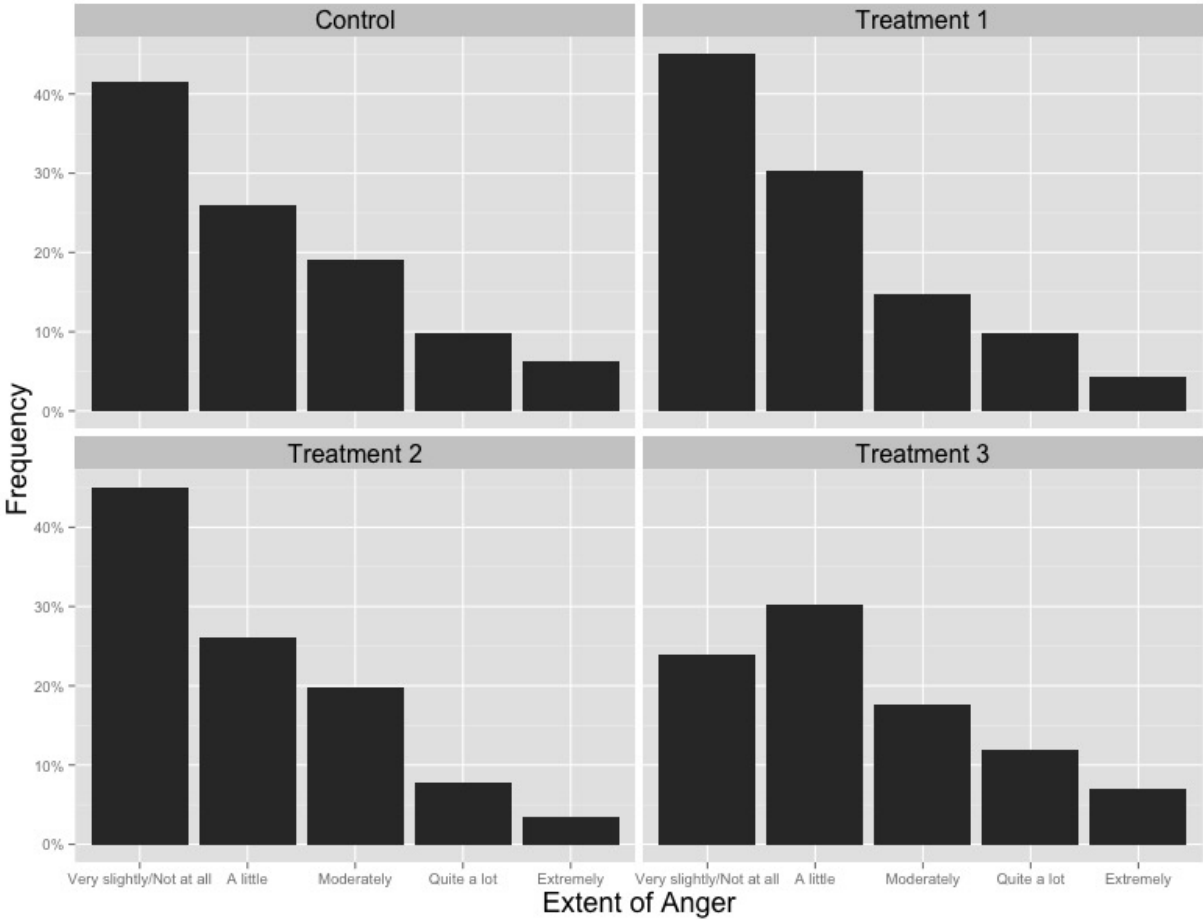


Figure 5: Unemployed and underemployed respondents were asked to indicate the extent to which they currently feel anger in thinking about their employment status

## Appendix C: CPS Data

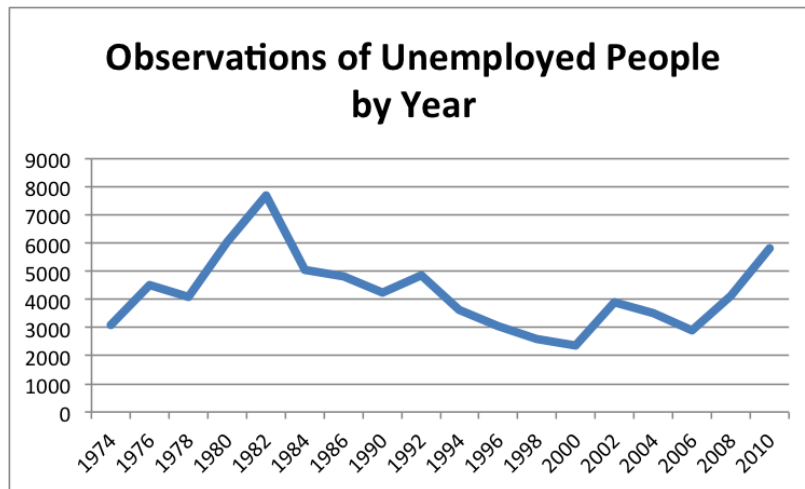


Figure 6: Number of unemployed people seeking work in the CPS sample for each election year

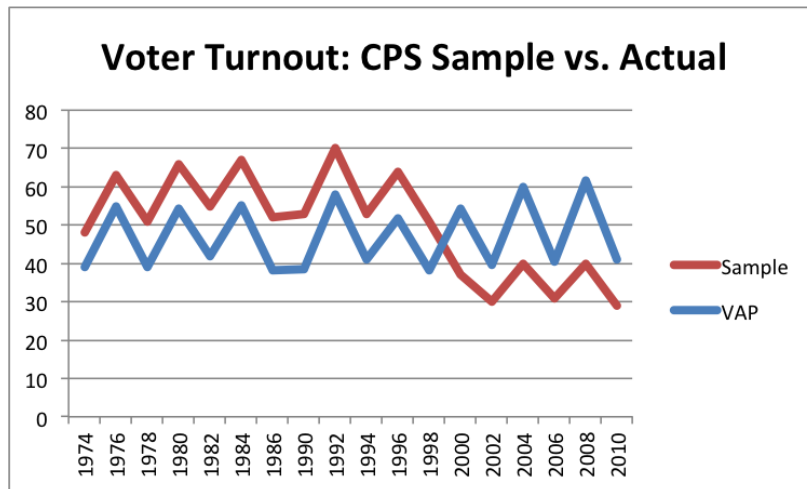


Figure 7: Reported turnout rate within the CPS sample versus actual turnout rate in presidential and midterm elections 1974-2010

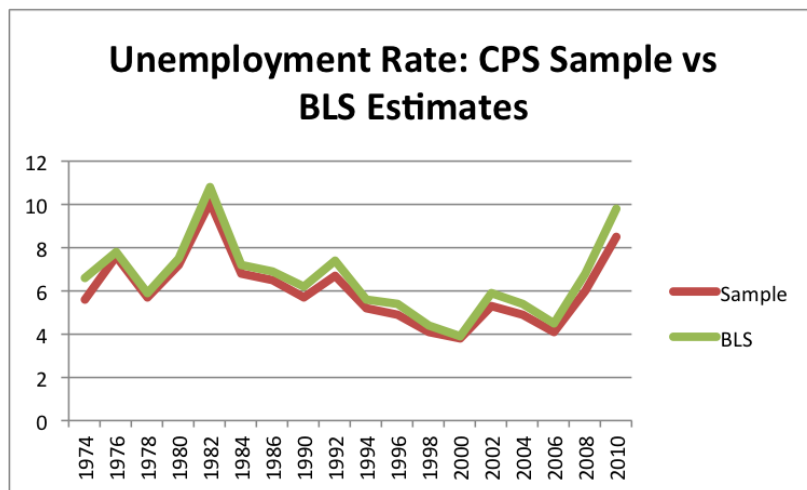


Figure 8: We compare the unemployment rates for our sample and the US population. The BLS line reflects the unemployment rate for November of each year, estimated by the Bureau of Labor Statistics. The sample line reflects the percentage of those in the labor force who are unemployed within the CPS dataset for each election year.

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