Online Appendix

Sampling and Administrative Details

In the text, we note that we randomly sampled students at both The Ohio State University (OSU) and the University of Oregon (UO). More specifically, we did this by randomly generating brief letter strings and random numbers. We used the letter strings as the basis for name searches in the student directories; once we received a list of names for a given string of letters, we used the random numbers to select specific individuals to contact. We restricted the samples to undergraduate students.

In addition, there are a number of practical elements of the administration of our study that we do not describe in the text. First, we offered participants a $5 Amazon gift card for completing the time 1 survey. Our response rates for these surveys are as follows: 10.77% (87/808) responded in the before-game OSU condition, 13.04% (109/836) responded in the after-game OSU condition, 10.40% (105/1010) responded in the before-game UO condition, and 11.22% (113/1007) responded in the after-game UO condition. We discuss these differing response rates and whether they are a threat to causal inference later in this appendix.

We informed participants, when they consented to the initial time 1 survey, that they would be invited to complete a second survey one week after their original participation. When we sent invitations for the follow-up/time 2 survey, we informed respondents they would receive an additional $2 gift card for completing the time 2 survey. The initial invitation for the before-game condition follow-up was sent on January 17th, 2015, while the invitation for the after-game follow-up was sent on January 20th. The respective response rates at time 2 were: 66.67% (58/87), 63.30% (69/109), 52.38% (55/105), and 53.98% (61/113). We sent two reminders to each participant at each time point.

Our overall sample was 60% female and 77% white. The average party identification score, on a 7-point scale with higher scores indicating a move towards being a Republican, was 3.34; the average family income was just below the $70,000-$99,999 range; and the average age was 21.06 years old. We assessed the success of random assignment (within schools) with logit models comparing these co-variates, finding balance across conditions, within schools. The results of these logit models are as follows.

****Model for OSU**

```
logit Post i.female i.white i.pid i.income age if osu==1

Iteration 0:   log likelihood = -125.26122
Iteration 1:   log likelihood = -121.22918
Iteration 2:   log likelihood = -121.22347
Iteration 3:   log likelihood = -121.22347

Logistic regression                                     Number of obs   =        182
                                                        LR chi2(13)     =       8.08
                                                        Prob > chi2     =     0.8386
Log likelihood = -121.22347                             Pseudo R2       =     0.0322

------------------------------------------------------------------------------
        Post |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    1.female |   .3857972   .3216082     1.20   0.230    -.2445434    1.016138
     1.white |   .3818323   .3977902     0.96   0.337    -.3978221    1.161487
             |
         pid |
           2 |  -.6267822   .6302686    -0.99   0.320    -1.862086    .6085215
           3 |   .0486796   .5725036     0.09   0.932    -1.073407    1.170766
           4 |      .0983   .5510826     0.18   0.858    -.9818021    1.178402
           5 |   .1479919    .638057     0.23   0.817    -1.102577    1.398561
           6 |  -.2472178   .6621275    -0.37   0.709    -1.544964    1.050528
           7 |   .1780141   .7536498     0.24   0.813    -1.299112    1.655141
             |
      income |
           2 |   .3630286   .5346274     0.68   0.497    -.6848219    1.410879
           3 |  -.0435545   .5496323    -0.08   0.937    -1.120814    1.033705
           4 |  -.4450594   .5179053    -0.86   0.390    -1.460135    .5700163
           5 |   .0833403   .6367884     0.13   0.896    -1.164742    1.331423
             |
         age |  -.0124391   .0338648    -0.37   0.713     -.078813    .0539348
       _cons |   .0342936   .9291315     0.04   0.971    -1.786771    1.855358
------------------------------------------------------------------------------
```

****Model for UO**

```
logit Post i.female i.white i.pid i.income age if Oreg==1

note: 7.pid != 0 predicts success perfectly
      7.pid dropped and 2 obs not used

Iteration 0:   log likelihood = -132.82372
Iteration 1:   log likelihood = -126.09674
Iteration 2:   log likelihood = -126.07014
Iteration 3:   log likelihood = -126.07013

Logistic regression                                     Number of obs   =        192
                                                        LR chi2(12)     =      13.51
                                                        Prob > chi2     =     0.3333
Log likelihood = -126.07013                             Pseudo R2       =     0.0508

------------------------------------------------------------------------------
        Post |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    1.female |   .0628203   .3223597     0.19   0.845    -.5689931    .6946338
     1.white |  -.0584765   .4018124    -0.15   0.884    -.8460144    .7290613
             |
         pid |
           2 |  -.1599465   .4873637    -0.33   0.743    -1.115162    .7952689
```

```
           3  |   .1442533   .4505003     0.32   0.749     -.738711    1.027218
           4  |  -.4872467   .5016491    -0.97   0.331    -1.470461    .4959675
           5  |   .5564348    .601812     0.92   0.355    -.6230951    1.735965
           6  |  -.2146021   .6443186    -0.33   0.739    -1.477443    1.048239
           7  |           0  (empty)
              |
      income  |
           2  |  -.6346419   .4500346    -1.41   0.158    -1.516694    .2474097
           3  |   .5363735   .5064283     1.06   0.290    -.4562077    1.528955
           4  |  -.2574666   .5036103    -0.51   0.609    -1.244525    .7295914
           5  |   .5409012   .6917842     0.78   0.434     -.814971    1.896773
              |
         age  |   .0603934   .0545824     1.11   0.269    -.0465861     .167373
       _cons  |  -.9900133   1.257698    -0.79   0.431    -3.455056     1.47503
------------------------------------------------------------------------------
```

Mood Versus Emotion

In the paper, we focus on mood (positive and negative) rather than discrete emotions (anger, anxiety, enthusiasm, etc.) as mood coheres with prior related work (e.g., Schwarz and Clore 1983, 2013); mood is a general state of feeling that lacks a clear referent whereas emotions inform us about the world around us and suggest a cause. Mood, therefore, is more conceptually linked to irrelevant event effects as they require that the connections between the event, corresponding mood, and status quo evaluations remain outside of conscious awareness.

Additional Outcome Measures

Economic Evaluations

In addition to presidential approval (the primary dependent variable in this study), we also added another status quo assessment by asking respondents about the state of the present economy ("What do you think about the state of the economy these days in the United States?") on 5-point fully-labeled scale (with increasing scores indicating better assessments). This variable served as a way to expand our knowledge of the boundaries of irrelevant effects and to explore an alternative measure of this phenomenon. On this measure of status quo evaluations, for OSU, we find a nearly identical pattern of results as with presidential approval. For UO, however, we failed to find significant differences on this variable between the before- and after-game groups. Tables A.1 and A.2 below present these findings. Our mixed results accentuate the need for future work to delve into the sources of possible differences and why some status quo assessments may be affected while others are not (and whether that depends on whether the event is positive or negative).

Table A.1: Effects on Ohio State (Winning Team) Respondents

	Before-Game	After-Game
Evaluation of the economy (5-point scale)	3.03 (1.05; 86)	3.38* (1.10; 109)

**$p \leq .01$, *$p \leq .05$, for one-tailed tests.

Table A.2: Effects on Oregon (Losing Team) Respondents

	Before-Game	After-Game

Evaluation of the economy (5-point scale)	2.71 (1.03; 105)	2.57 (.94; 113)

$^{**}p \leq .01$, $^{*}p \leq .05$, for one-tailed tests.

Social Media

We also included a measure of spread of these effects in social networks. A growing literature documents the transference of one person's emotions and moods to other individuals through inter-personal interactions (a phenomenon referred to as emotional contagion); this can occur in face-to-face interactions or via social media platforms like Facebook (e.g., Bond, Fariss, Jones, Kramer, Marlow, Settle, and Fowler 2012). In keeping with this literature, we asked respondents the following:

> We are interested in how your friends react to your feelings. If you use Facebook, are you willing to post about how you currently feel on your Facebook page and include a link to our study?
>
> _____ _____
> *yes* *no*
>
> If you are willing to post, you can simply post comments about how you feel with the following statement:
>
> "I am posting this as part of my participation in a study by researchers at **XXXX**. If you would like to participate in a part of that study you can follow this secure and encrypted link: **XXXX**. Participation would entail completing a brief survey and you would then be entered into a drawing for one of twenty $25 gift cards to Amazon."

Unfortunately, only a small number of people agreed to post their feelings and we received very few responses from these Facebook postings. This made it impossible for us to study contagion. Nonetheless, we can use the data to explore the *possibility* of mood contagion by reporting, by condition, the percentage of respondents who stated they posted how they felt on Facebook. Note these data are all self-report data we cannot verify. Table A.3 presents these results.

Table A.3: Facebook Posting

	Before-Game Percentage Posting	After-Game Percentage Posting
OSU	7.3%	15.5%*
UO	9.5%	9.3%

$^{**}p \leq .01$, $^{*}p \leq .05$, for one-tailed tests.

We find one notable result in this table: the after-game OSU respondents are significantly more likely to report posting than the before-game OSU respondents. That the result only occurred among the group with elevated positive mood complements Coviello, Sohn, Kramer, Marlow, Franceschetti, Christakis, and Fowler's (2014, 4) finding that positive messages appear to be more contagious than negative ones. These results suggest that positive moods generate more posts and could spread more as a result. Of course, the results are preliminary at best but highlight the need for more work along these lines.

Additional Over-time Results

Over-time Details on Presidential Approval

Space limitations prevented us from noting three additional dynamics in the over-time effects on presidential approval. First, using only data for those who completed the T2 survey, the main effects of the game (as observed at T1) continue to be significant for each school. In other words, we see the same effects from the game looking only at subjects who completed both waves of the study as we do on the full sample at T1. Second, if we instead used the T1 scores from the full sample in our analyses of the over-time results (instead of looking only at those who completed both surveys), the results would be statistically the same. Third, the over-time correlations are consistent with our result. Specifically, for OSU, the T1-T2 before-game condition correlation is .58 while the after-game condition correlation is .45 (i.e., the blip at T1 for the after-game condition vitiates the over-time correlations). The respective correlations for UO are .50 and .38. These are only suggestive, however, as they are not significantly different from one another. We also note that these over-time correlations are relatively low compared to American National Election Study panel data that shows reliability correlations in the .80-.90 range. We suspect our lower correlations reflect that our data come from a very young population who have not crystalized their opinions as well as the fact that the survey occurred outside of an election context when people may be more attentive and consistent in their political opinions.

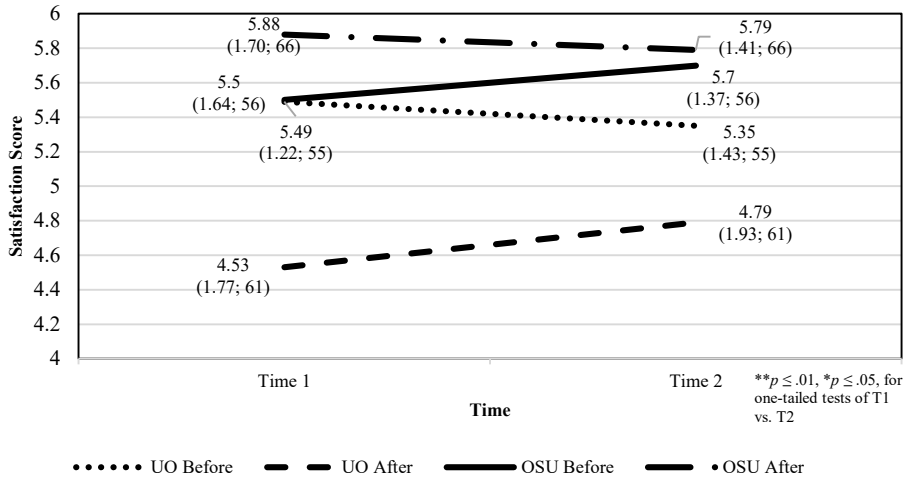
Our finding that irrelevant event effects decay may appear to contradict Healy, Malhotra, and Mo's (2010) football results as those endure for at least 10 days (although see Fowler and Montagnes 2015a,b). However, as mentioned in the text, the difference likely stems from their focus on an election season where individuals were apt to form candidate preferences in an on-line processing mode, given the anticipated vote. In other words, roughly 10 days before an anticipated election may be the point in time when people settle on a candidate choice; our results are not comparable since there was no anticipated election for which individuals may have been attempting to arrive at a vote choice (Healy, Malhotra, and Mo 2010, 12805). Also, our result is consistent with Healy, Malhotra, and Mo's (2010) NCAA basketball result: they found strong effects among strong supporters of their teams and documented the effects 1 to 4 days after the game.

Over-time Satisfaction

In the text, we refer to the immediate effect of the game on satisfaction with one's university. We also considered the way these immediate effects changed over time. Figure A.1 shows quite a distinct pattern from our approval results (as presented in the text). The OSU after-game increase at T1 largely sustains at T2, only marginally (and insignificantly) declining from 5.88 to 5.79. The OSU before-game group demonstrates movement towards greater satisfaction, moving from 5.5 to 5.7. While this change falls short of statistical significance, the OSU results, overall, are suggestive that the win increases satisfaction, which endures. The UO over-time changes, for both the before- and after-game group, fall short of significance, but there is a movement towards a convergence such that the after-game decline evaporates. It could well be that a win has a lasting impact on satisfaction while a loss's effects are only short term. More work is needed, however, given our findings are not strong enough to offer a definitive conclusion.

These analyses only examine subjects who responded at T2 (i.e., they exclude those who only responded at T1). If we instead use T1 data from all respondents, the OSU before-game group is just short of a significant increase, while the after-game group continues to demonstrate virtually no change (thus the results support the idea of an enduring after-game effect). The UO before-game group shows no significant change (i.e., no effect of the loss), while the after-game group exhibits a significant increase, suggesting that indeed the loss effect diminishes. The T1 effect among only T2 respondents is significant for UO and just short of significance for OSU. The T1-T2 correlation for the OSU before-game group is .24 and is .33 for the after-game group (consistent with an after-game effect enduring). The respective UO correlations are .42 and .32 (consistent with the after-game effect diminishing).

Figure A.1: Satisfaction with University Over Time



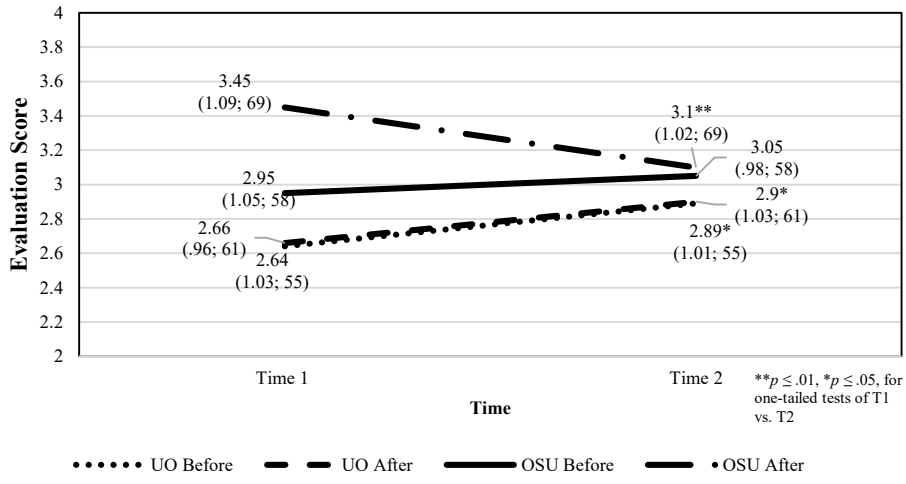
Over-time Economic Evaluations

We also examined the way the effects observed regarding economic evaluations (in tables A.1 and A.2) changed over time. These analyses are most relevant for OSU since we do not find an initial T1 effect (from the loss) for UO. Figure A.2 reveals an OSU dynamic akin to what we found with presidential approval: the before-game group shows no significant change, suggesting the win they experienced in the interim did little over time. The after-game group exhibits a significant decline from 3.45 to 3.1. Again, then, we see the initial after-game increase due to the win deteriorates a week later, converging toward the T1 mean. The line for the before-game group remains flat while the after-game group declines towards the (T1) before-game responses.

For UO, as mentioned, there is no T1 effect; over time, we see both the before- and after-game groups actually significantly become more positive about the economy. This runs counter to any lingering effects from the loss. What drives the increase is not clear. Overall, our economic assessments results again show that the irrelevant event effect is short-lived.

As with presidential approval, the OSU after-game significant decline holds if we instead use T1 data from all T1 respondents. For UO, when we use all T1 respondents, the after-game condition movement is significant but the before-game movement is not. Also, consistent with the above results the T1 difference is significant for OSU among the T2 respondents only (but not with the UO respondents). Finally, the T1-T2 correlations are consistent with our findings of fading effects: for OSU before-game it is .46 and for after-game .38, and for UO the respective correlations are .53 and .37.

Figure A.2: Evaluation of the Economy Over Time



Supportive Analyses

Potential Response Rate Problems

There are two major concerns about response rates that could invalidate our causal inferences—differential response rates in the before- and after-game groups and different response rates in the time 1 and time 2 groups. We find no reason to suspect that response rates at either point invalidate our causal inferences and the analyses presented in the text. We discuss each issue in turn.

Participation in the after-game wave of the survey could have been influenced by the game itself, making individuals who were especially affected by the game or committed to the team more or less likely to respond. For example, at OSU, stronger fans may have felt extreme feelings that generated a greater, relative likelihood to respond, whereas for UO fans, stronger fans may have been less likely to respond due to the loss and more negative mood. In this case, emotional state, which may correlate with commitment to the team, could affect the likelihood of response.

If this occurred, differential patterns of response across the before- and after-game groups could bias the causal inferences from our data. As we cannot evaluate the individuals who did not participate in our study, we cannot directly assess this claim. That said, we do have suggestive evidence that commitment to one's team was not variant in the before- and after-game surveys.

Specifically, we found no significant differences between the before- and after-game conditions, for each school, in terms of a measure we included that asked about the likelihood of watching the game (for the before-game group) or whether the respondent had watched (for the after-game group). For OSU, both the before- *and* after-game conditions registered 86% watching while for UO, the before-game condition reported 83% watching and the after-game condition reported 85% watching. We also asked respondents, at the end of the survey, how many games they had attended and how many games they had watched on television or the internet. OSU respondents reported attending 2.59 (std. dev. = 2.95; N = 182) and UO respondents reported 2.55 (2.54; N = 195). Neither school showed significance differences in attendance across the before- and after-game groups. In terms of watching, OSU's average was 8.45 (6.0; 182) and UO's average was 7.79 (5.68; 196). In both cases, the after-game groups reported watching roughly one more game than the before-game groups, which is sensible since that one game presumably was the National Championship game. Table A.4 gives the average number of games attended and watched for each school and condition (before or after game). None of the differences between conditions (within schools) is statistically significant.

Table A.4: Games attended and watched

Games attended	**Average**	**SD**	**N**
Before game, OSU	2.52	3.06	81
After game, OSU	2.65	2.88	101
Before game, Oregon	2.49	2.36	89
After game, Oregon	2.59	2.70	106
Games watched	**Average**	**SD**	**N**
Before game, OSU	7.93	6.17	81
After game, OSU	8.87	5.85	101
Before game, Oregon	7.11	5.36	90
After game, Oregon	8.37	5.91	106

In sum, our statistical analyses suggest that, in terms of our measured demographics and measures of commitment to the team, respondents in each condition are not, on average, significantly different from one another. We take this as suggestive evidence that the game did not create different kinds of respondents in the before- and after-game groups.

In addition to this analysis, we assessed the determinants of response at time 2 to see whether respondents at time 2 were a biased subset of our overall sample. If this were the case, it would pose a problem for causal inference about durability. We used logit models, with response at time 2 coded as 1 and nonresponse at time 2 coded as 0, regressed against our co-variates.

Our analyses, available upon request, show different response rates at time 2 across the two schools. Compared to the UO respondents, the OSU respondents tend to be somewhat more likely to respond at time 2; holding the other variables constant at their means, the predicted probability of a respondent from OSU responding at time 2 is 0.70 and for UO, it is 0.58. This is not a problem for us, however, since we focus on within school and not across school dynamics.

Thus, more important are the within-school results. We find that the only statistically significant predictor of response at time 2 is party identification, and when we look within schools to see if party identification matters at OSU and UO, we find that the relationship only persists at OSU, and even then it is only suggestive ($p=0.069$, two-tailed test). We do not see this as a problem since, unlike party extremity, identification itself has no theoretical connection with decaying effects from irrelevant effects (i.e., extremity may affect likelihood of response). The key variable was the mood response to the game, as different response rates at time 2 according to mood might create patterns that appear to show decay or persistence. However, we find no evidence that suggests mood drove response rates at time 2 responses.

In addition to the logit models, we used multiple imputation to account for missing data at time 2. Using the multiple imputation procedures available in Stata, we performed 200 imputations to estimate the missing values at time 2. These imputation procedures predicted the time 2 responses as a function of school, before/after-game assignment, demographic characteristics, the mood measures, the number of games watched, if the participants saw the championship game, and the responses to the main dependent variables at time 1. Using these procedures, the result of the durability analyses are the same as presented in the paper, with only minor changes in statistical significance (e.g., going from $p<0.01$ to $p<0.05$ on a two-tailed test). This is not unexpected, given the uncertainty multiple imputation introduces into the statistical estimates.

The only notable difference between the results as presented and multiple imputation analyses is that the increase in college satisfaction for the after-game UO group is statistically significant at the $p<0.05$ level (two-tailed) (for comparison, see Figure 1 for the non-imputed results). This suggests that college satisfaction among UO students may increase with the passage of time, supporting the conclusions as written in the text. If anything, the non-imputed analyses we rely on in the main paper present a more conservative view of this point. More detailed results, including the Stata code used to generate the imputed dataset, are available from the authors.

Robustness Checks

Notably, our design assumes the respondents experienced the championship game and its outcome in some way. Ideally we would sample only individuals who are committed to the two sports teams and were interested in the game; however, we could not identify these individuals a priori and used attendance at OSU or UO as a proxy for experiencing the game.

One way to evaluate the success of this proxy measure is with the aforementioned question we included at the end of our survey, asking respondents if they planned to watch (before-game) or had watched (after-game) the game. As noted, we found that 86% (N = 183) of OSU respondents and 84% (197) of UO respondents reported watching the game. This leaves roughly 15% who did not report watching the game; however, it is likely that they still experienced it through their social networks, roommates, the atmosphere on campus, etc. Moreover, we performed our analyses excluding individuals who did not report watching the game, and we find that the results reported hold on this subset of participants.

In addition to these checks, we also considered a number of alternative explanations for the patterns of attitudes described in the paper. The explanations involve events that occurred

between the before- and after-game groups that would influence presidential approval. If any such event occurred, it would be confounded with the football game and would bias our causal estimates. One threat to this inference is if a significant political event occurred during the time between the before- and after-game groups responded. Fortunately, for us, ostensibly, no such event occurred. In the period of this study, we know of no major political, economic, or social event that occurred between the before- and after-game groups. As a result, no such expressly political or social event seems to have caused our results.

It also is true that weather can create different moods, which then may influence individuals' evaluations. If weather conditions differed between the before- and after-game groups or if some weather event occurred at OSU or UO during this time, these factors would be confounded with the effect of the football game. We sought to address the potential confound by obtaining weather data for Columbus, Ohio (OSU) and Eugene, Oregon (UO) for the dates of our study. Table A.5 contains these data.

We see no potential confound between the before-game (highlighted in yellow) and after-game (highlighted in green) conditions. No major weather event occurred and the average temperatures and precipitation for the before- and after-game groups are extremely similar. This evidence suggests that the effect of the football game was not confounded with any general weather effects.

We also include data in Table A.5 for the time period between time 1 and time 2. If anything, the improving weather at OSU should have biased our data in favor of finding a lasting effect from the game victory at T2, which we do not find. Additionally, although the weather was also improving in this time period at UO, it does not seem dramatic enough to produce the differences we observed. And even if it does suggest that the weather influenced our over-time findings, this would support our point: the effect of the game is fleeting and gets washed out by other intervening events (such as changes in the weather).

Table A.5: Weather at OSU and UO

OSU	High (F)	Percip (inches)		UO	High (F)	Precip (inches)
10-Jan	19	0		10-Jan	47	0.01
11-Jan	32	0.06		11-Jan	50	0.07
12-Jan	34	0.09		12-Jan	55	0.21
13-Jan	23	0		13-Jan	47	0
14-Jan	21	0		14-Jan	44	0
15-Jan	33	0		15-Jan	50	0.51
16-Jan	34	0		16-Jan	57	0.07
17-Jan	48	0		17-Jan	59	1.33
18-Jan	45	0.01		18-Jan	58	0.13
19-Jan	42	0		19-Jan	56	0
20-Jan	44	0.01		20-Jan	44	0
21-Jan	41	0.02		21-Jan	40	0
22-Jan	34	0		22-Jan	55	0.01
23-Jan	33	0		23-Jan	55	0.01
24-Jan	36	0		24-Jan	68	0
From: Weather Underground						

One other potential confounded regards if students at both universities were at their respective universities and fully into campus life during the time of our studies. If students were not on campus for the before-game group but were on campus during the after-game period, the effect of being on campus/involved in university life would be confounded with the outcome of the game. We obtained information from the academic calendars of both universities to address this concern.[1] Any concern about UO seems unfounded as the winter term there began on January 5th, or five days prior to our before-game group. At OSU, the term began on January 12th, the day of the game. This suggests that at least some of the before-game subjects for OSU may not have been on campus when they were surveyed.

It is therefore possible that the difference between the before- and after-game groups for OSU is confounded with being on campus (as more students may have been on campus in the after-game group than in the before-game group). However, we consider this confound to be unlikely for two main reasons. First, many students were likely traveling to or already on campus before the first day of class. Even if they were not physically present, many were likely thinking of the coming session of classes, campus events, and other connections to their university.

Secondly, a presence-on-campus confound does not explain why the OSU groups returned to the before-game baseline at T2. If a presence-on-campus confound was at work, we would expect

[1] The calendar for OSU can be found here: http://registrar.osu.edu/staff/calendars_old.asp
The calendar for UO can be found here: https://registrar.uoregon.edu/calendars/academic/five-year

the before-game group (and possibly the after-game group if the effects of the game are fleeting) to return to a level of approval that is different from the T1, before-game measure. This is not what we observe. The before- and after-game groups converge on the T1 measures of approval for President Obama; we do not observe statistically significant differences between the T1 and T2 measures for the before-game group. Based on these factors, we do not feel that presence on campus is confounded with the effects of the game outcome.

A final threat to our inferences concerns spillover between subjects assigned to different conditions (before- and after-game groups). This could have occurred if individuals in treated conditions discussed the survey with others. This may have occurred, and our data do not allow us to address this concern directly. However, we consider this unlikely given the size of the student bodies at both universities. Our total samples made up only .3% of OSU's student population and 1% of UO's student population, making spillover (as a statistical matter) incredibly unlikely.

References (*NOT in the Main Body of the Paper*):

Bond, Robert M., Christopher J. Fariss, Jason J. Jones, Adam D. I. Kramer, Cameron Marlow, Jaime E. Settle, and James H. Fowler. 2012. "A 61-Million-Person Experiment in Social Influence and Political Mobilization." *Nature* 489 (7415): 295–98.

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