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Did Hurricane Sandy influence the 2012 US presidential election?

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Joshua Hart *

Department of Psychology Union College, Schenectady, NY 12308, United States

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ABSTRACT

Despite drawing on a common pool of data, observers of the 2012 presidential campaign came to different conclusions about whether, how, and to what extent "October surprise" Hurricane Sandy influenced the election. The present study used a mixed correlational and experimental design to assess the relation between, and effect of, the salience of Hurricane Sandy on attitudes and voting intentions regarding President Barack Obama and Mitt Romney in a large sample of voting-aged adults. Results suggest that immediately following positive news coverage of Obama's handling of the storm's aftermath, Sandy's salience positively influenced attitudes toward Obama, but that by election day, reminders of the hurricane became a drag instead of a boon for the President. In addition to theoretical implications, this study provides an example of how to combine methodological approaches to help answer questions about the impact of unpredictable, large-scale events as they unfold.

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1. Introduction

Even before the tropical cyclone dubbed "Hurricane Sandy" made landfall along the Mid-Atlantic and Northeast United States coastline on October 29, 2012, pundits began speculating about how the storm might affect the impending presidential election. Some suggested that voters would be inclined to displace negative attitudes about the disaster onto incumbent President Barack Obama. Others posited that the storm would give Obama a chance to "look presidential" in the days before the election, thus boosting his approval ratings enough to make a difference in the tight race. Political science data can be found to support both theories (e.g., Gasper and Reeves, 2011), and in context, both theories seem plausible: Obama did receive positive news coverage for his administration's response to the hurricane (including widely reported praise from Chris Christie, New Jersey's Republican Governor and a Romney surrogate), but soon thereafter, news coverage seemed to focus more on the devastation the storm had wrought and the suffering of millions of citizens in its aftermath.

Similarly, social psychological theories could be used to generate different predictions. For example, several perspectives would view a natural disaster as representing a large-scale psychological threat to the population, either due to its instilling of uncertainty, existential insecurity (e.g., system justification theory, Jost and Banaji, 1994) or a sense of not having control over events (e.g., compensatory control theory, Kay et al., 2008). System justification theory, which posits that people are motivated to defend established social systems, particularly when fundamental psychological needs are threatened, could be used to make opposing predictions. On one hand, the hurricane should increase Obama's favorability to the extent that

* Fax: +1 518 388 6177.
  E-mail address: hartj@union.edu

the incumbent President represents the "status quo" that people are motivated to preserve (i.e., "justify") to assuage uncertainty and threat; on the other hand, the hurricane might cause a "conservative shift" (because conservatism reflects an ideological preference for tradition; Hennes et al., 2012), which would negatively influence Obama's favorability. (Perhaps, then, system justification theory suggests offsetting forces in the present case that would lead to the hurricane having little overall effect.) Compensatory control theory, which posits that people are motivated to perceive that some agent—either the self or an external power—is in control of circumstances and imposes order and predictability on an often chaotic-seeming world, would seem to predict a benefit of the hurricane for Obama, whose confident leadership would be expected to compensate for people's feelings of not having control (see Kay et al., 2008).

Along similar lines, research on terror management theory suggests that a hurricane could influence voters' political leanings as they seek comfort in the face of existential vulnerability (i.e., caused by death reminders; see Cohen et al., 2004; Landau et al., 2004). Specifically, a natural disaster would be expected to increase ideologically similar (i.e., liberal) voters' liking for Obama to the extent that he is a charismatic leader (Kosloff et al., 2010). However, the direction of such an influence might also be expected to depend on salient construals of the event or the President's response to it, such as those conveyed by the tenor of news coverage of the disaster (cf. Jonas et al., 2008). That is, existential concerns evoked by a hurricane combined with news coverage depicting Obama as a charismatic leader would have more positive implications for the President than news coverage emphasizing the scale of the disaster or a feckless government disaster response (e.g., consider the effect of 2005s Hurricane Katrina on the public's views of then-President George W. Bush).

Of course, President Obama was re-elected, and several politicians, pundits, and operatives pointedly suggested that Hurricane Sandy had halted Republican candidate Mitt Romney's supposed upward momentum (e.g., Rove, 2012), despite some polling evidence to the contrary (Silver, 2012). Even some liberals propagated the Sandy storyline; TV personality Chris Matthews, an Obama supporter, expressed gratitude that the storm had "brought in possibilities for good politics" (Wemple, 2012; Matthews later apologized for the remark). Others concluded that Sandy had no effect, despite drawing on the same pool of national tracking and exit poll data.

It is not possible to definitively ascertain whether Hurricane Sandy influenced the election, in what direction, or by how much. Tracking polls provide little insight because the polls reflect the influence of multiple factors simultaneously, none of which can be precisely statistically controlled for. The polls, which had begun to reflect some increased support for Obama prior to the storm (Silver, 2012), continued on that gradual trajectory, which could suggest either that the hurricane had no effect, or that it posed a countervailing force against a tendency for Romney to gain support as the election neared (or a countervailing force against Obama's momentum). Obviously, a perfect experimental analysis is impossible—even if it were ethical to do so, one could not randomly assign voters to be aware (or not aware) of a natural disaster. Any experiments carried out after the election are hampered by considerable external validity problems. However, it is possible to approach the question using complementary strategies, ideally as the event in question unfolds. I adopted such an approach in the research presented here.

If Sandy was a boon for Obama, voters for whom the storm and its coverage were salient events should be more likely to prefer that he be reelected. One obvious limitation to this correlational approach is that the lack of random assignment precludes causal conclusions. However, even if exposure to news coverage of Hurricane Sandy cannot be randomly assigned, its salience can be manipulated—for example, with a subtle priming technique in which survey respondents are either asked or not asked about their exposure to the storm, then polled on their voting inclinations. Of course, even this approach is limited—it is infeasible to obtain a true control condition of individuals totally unaware of the storm. The present study thus employed both correlational and experimental approaches over the period of time after the hurricane hit and prior to the election, using converging, real-time methods to examine the possibility that any influence the hurricane may have had on voters could have changed over time along with the tenor of news coverage.

2. Method

2.1. Sample

Beginning in the immediate aftermath of Hurricane Sandy (October 31) until early morning on election day (November 6), 917 people located in the United States participated via MTurk.com and were paid 50 cents each (see Buhrmester et al., 2011). Participants were excluded from analyses if they did not plan to vote in the election or if they were unsure, leaving 695 "likely voters" (76%).[1] Although not weighted for representativeness to the voting population (the demographics of which vary between the "swing" states that are most important to electoral college calculus), the sample nevertheless reflects an approximate cross section of United States residents; similar to other studies (cf. Simons and Chabris, 2012), compared to the 2010 US census the present sample included a greater proportion of Whites/Caucasians (81%) and Asian-Americans (9%), a smaller proportion of Blacks/African-Americans (5%) and Hispanics/Latinos (4%), and a greater proportion of men (59%). On average, participants were younger than the population (ages 18–82; *Mdn* = 28), and they were also a great deal more liberal: 68% reported that they most closely affiliate with the Democratic party (21% most closely affiliated with the Republican party

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[1] Expanding the sample to include all participants regardless of voting intentions does not change the significance or non-significance of any results reported in this article. I chose to report analyses from the "likely voter" subset to maximize generalizability to the voting population.

Sandy Questions

1. To what extent have you or people you know been affected by Hurricane Sandy?

> *Not at all   A little bit   Somewhat   A great deal*

2. To what extent have you followed news coverage of Hurricane Sandy?

> *Not at all   A little bit   Somewhat   A great deal*

Voting Questions

1. Do you intend to vote in the 2012 presidential election?

> *Yes   No   Maybe*

2. If the 2012 presidential election were held today, whom would you vote for?

Options rotated: *Mitt Romney   Barack Obama   Someone Else   No One   Not Sure*

3. [Included in post-coverage samples only.] Given the choice, do you:

Strongly prefer Mitt Romney to be President
Prefer Mitt Romney to be President
Slightly prefer Mitt Romney to be President
Slightly prefer Barack Obama to be President
Prefer Barack Obama to be President
Strongly prefer Barack Obama to be President

Political Orientation

1. Which of the following best describes your political views?

Very conservative   Conservative   Lean conservative   Moderate/mixed   Lean liberal   Liberal   Very liberal

Fig. 1. Survey questions.

and 11% chose "other"). Participants reported residing in 45 different states and represented all major regions of the country (Northeast: 19%; Midwest: 24%; South: 35%; West: 22%). These demographics were quite stable across the subsamples described below; for example, the percentage of Whites/Caucasians was not lower than 75% or higher than 84%, and the mean age was not lower than 29 or higher than 33.

2.2. Analytic strategy

Because I was interested in how results would unfold over time, yet participation rates varied across duration of the study, I grouped participants into 5 samples that would each be large enough to perform relevant statistical analyses: A pre-coverage (10/31) baseline sample (n = 190), collected prior to the positive news coverage Obama received that evening after he had suspended his campaign to oversee relief efforts, including a much-publicized tour of storm damage with New Jersey Governor Christie (after which Christie praised the President effusively); an immediate post-coverage sample (11/1; n = 188); and then 3 additional post-coverage samples: 11/2–11/3 (n = 130); 11/4 (n = 93); and 11/5–11/6 (n = 94).[2]

2.3. Materials and procedure

Participants were randomly assigned to complete one of two surveys, one of which began with two questions (see Fig. 1) serving as a reminder of Hurricane Sandy. The surveys were otherwise identical, and included, in order, (1) distractor questions to mask the purpose of the survey, consisting of 3 questions about TV and news exposure and cell phone use, plus The Positive and Negative Affect Schedule (Watson et al., 1988); (2) voting questions (see Fig. 1); (3) political orientation and affiliation, and demographic information; and (4) in the post-coverage samples only, control condition participants answered the same Hurricane Sandy questions that were presented at the beginning of the survey for participants in the experimental condition.

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[2] It is important to note that I originally intended to conduct separate analyses for each day of data collection. However, participation rates varied across the study, which resulted in too-small sample sizes for most of the days after November 1, as power analyses suggested that just over 100 participants would be required for an 80% chance of detecting a moderate effect size on each given day. Therefore, I aggregated the data so that each sample after Nov. 1 would have approximately 100 participants. The negative effect of Sandy reminders on Obama's vote share remains significant when participants from Nov. 6 are eliminated, but the positive effect of Sandy reminders on his vote share is attenuated if Nov. 2 and Nov. 3 respondents are not aggregated.

3. Results

3.1. Correlational results and discussion

In the pre-coverage sample, Sandy affectedness and coverage exposure ($r = .44$) did not correlate significantly with Obama's *vote share* (i.e., the proportion of participants saying they would vote for Obama; $r = .13$, $p = .21$, and $r = -.03$, $p = .76$, respectively). This remained true in the overall post-coverage sample, and extended to the added question of *relative preference* for Obama vs. Romney (r's < |.07|, p's > .15). Broken down into the separate post-coverage samples, there were still no significant correlations between Sandy exposure and Obama's vote share, but as Fig. 2 shows, there was a tendency for participants more affected by Sandy or exposed to media coverage of the storm to express relatively higher preference for Obama compared with participants less affected or exposed, but only in the samples within the November 2–November 4 window. Indeed, both correlations were statistically significant when data from November 2 through November 4 were aggregated ($r = .19$, $p = .006$, and $r = .14$, $p = .04$ for affectedness and coverage exposure, respectively). However, by November 5–November 6, this tendency reversed course and trended in the opposite direction (r's = $-.15$; p's = .14 and .15, respectively; both correlations are significantly lower than in each of the samples after November 1 [one-tailed p's < .04]). These patterns held (a) regardless of whether Sandy affectedness and coverage exposure were reported before or after the political questions, and (b) when controlling for political orientation.

Thus, whereas these results are consistent with the hypothesis that Obama enjoyed more positive sentiment (though not more vote share) among individuals more affected by Sandy or more exposed to Sandy media coverage, they also suggest that the boost was small, brief, and not significantly net-positive across the storm's aftermath. Judging by the results nearest to the election, the correlations suggest that Sandy may have actually hurt Obama among participants who reported Sandy to be a more salient event.

3.2. Experimental results and discussion

In the pre-coverage sample, Sandy reminders did not affect Obama's vote share, $\chi^2(1, N = 190) = .07$. This remained true at the beginning of the post-coverage sample on November 1, $\chi^2(1, N = 188) = .03$. However, by the November 2–November 3 window, Sandy reminders increased Obama's vote share, $\chi^2(1, N = 130) = 4.61$ $\phi = .19$. That effect was no longer evident in
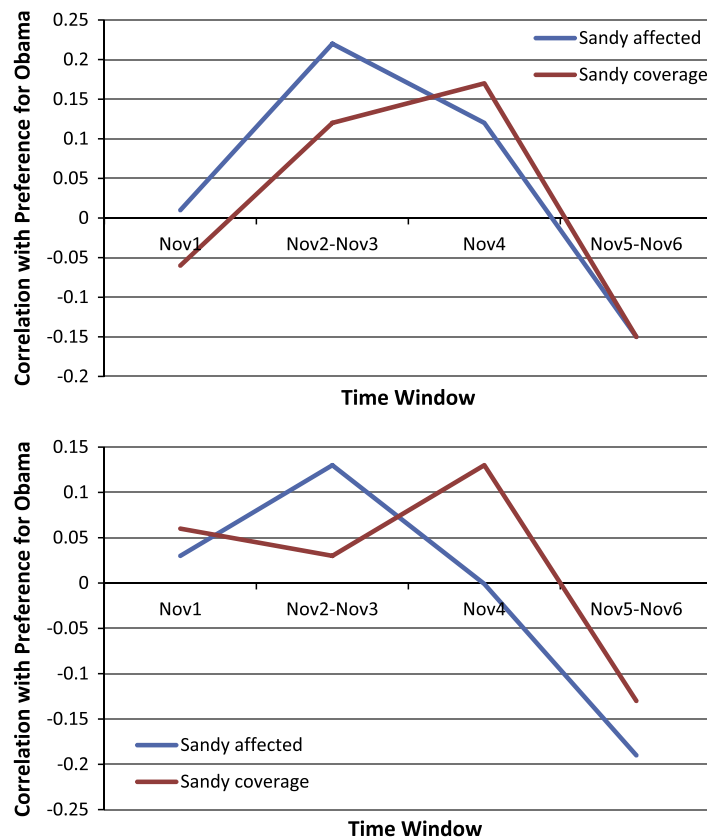

Fig. 2. Correlations between Sandy exposure and relative preference for President Obama vs. Mitt Romney (Top: bivariate correlations. Bottom: partial correlations controlling for political orientation.).
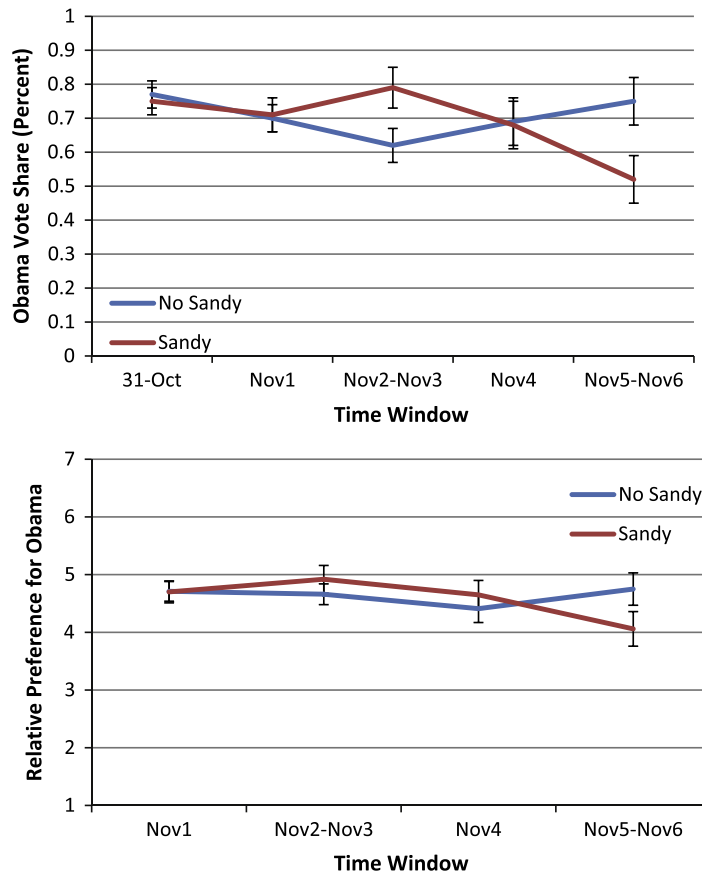
Fig. 3. Effect of Sandy reminders on vote share (top) and relative preference for President Obama (bottom).

the November 4 sample, $\chi^2(1, N = 93) = .02$; and by November 5–November 6, it had reversed: participants first reminded of Sandy were *less* likely to say they would vote for Obama, $\chi^2(1, N = 94) = 5.21 \; \phi = -.24$.

These vote-share results were largely mirrored by the relative-preference results. Although the Sandy-reminder boost for Obama on November 2–November 3 did not reach significance and the Sandy-reminder detriment to Obama on November 5–November 6 was marginally significant, $t(91) = 1.69$, $p = .09$, $d = .36$, relative preference for Obama was statistically significantly lower among Sandy-primed participants on November 5–November 6 compared with November 2–November 3, $t(123) = 2.71$, $p = .008$, $d = 48$, but not different among participants not reminded of Sandy, $t(96) = -.25$. Fig. 3 displays the vote-share and relative-preference data. Overall, these results converge with the correlational findings to suggest that Hurricane Sandy's salience—whether naturally occurring or experimentally manipulated—provided a small boost for Obama shortly after he received positive news coverage, but that the positive effect had turned to a negative one by election day.[3]

3.2.1. Political orientation as moderator

A multiple regression analysis predicting relative preference for Obama from Sandy priming and (standardized) political orientation (Step 1), and the interaction term (Step 2) revealed a significant interaction for the November 2–November 3 sample, $b = -.41$, $t(128) = -2.16$, $p = .03$. As Fig. 4 shows, Sandy reminders only had a significant positive effect on relative preference for Obama among self-described political conservatives.

By contrast, the Sandy reminders' later-emerging negative effect on preference for Obama tended to occur across the political spectrum. In sum, the brief spike in positive attitudes toward Obama cause by Sandy reminders in the November 2–November 3 window occurred mainly among conservatives; but immediately prior to the election, Sandy reminders appeared to inhibit pro-Obama sentiment among participants of all political orientations.[4]

3.3. Exploratory analyses concerning tenor of news coverage

On an exploratory basis, I conducted an analysis of news coverage pertaining to the hurricane during the study window. A research assistant who was blind to the purpose of the study rated headlines of brief news stories posted on a *New York Times*

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[3] These results held in linear and logistic regression analyses controlling for political orientation.

[4] It is possible that the interaction with political orientation is an artifact of liberals' extremely positive attitudes toward Obama.
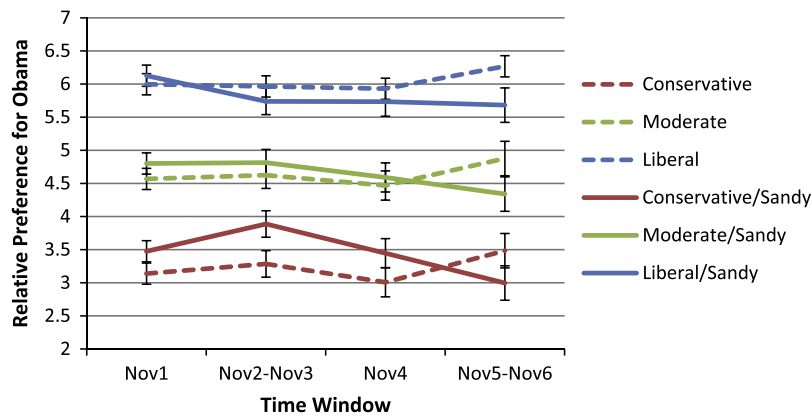
Fig. 4. Relative preference for Obama as a function of Sandy reminders and political orientation.

website devoted to coverage of the hurricane and its aftermath (<http://www.nytimes.com/interactive/2012/10/28/nyregion/hurricane-sandy.html>).

Obviously, one cannot be sure about the extent to which this (arbitrarily chosen) source is representative of overall news coverage at the time, but it seems like a reasonable indicator because the *New York Times* is a major, reputable news source, the site was updated many times each day (with precise date stamps) during the time period of interest, and it was devoted exclusively to comprehensive hurricane coverage. The blind rater read each of the 410 headlines of stories posted from October 31 through November 6, and rated the tenor of the headline on a scale of 1 (*extremely negative*) to 7 (*extremely positive*). The rater was encouraged to use the entire range of the scale, and was allowed to make ratings of half-points (e.g., 4.5). The resulting scores ranged from 1.5 to 6 ($M = 3.91$, $SD = .75$). I then computed average news-tenor ratings within each of the time windows described previously.

The average ratings of the news headlines tended to be slightly negative (i.e., below the neutral midpoint of the scale; October 31 $M = 3.90$, $SD = .71$; November 1 $M = 3.84$, $SD = .90$; November 2–3 $M = 3.98$, $SD = .78$) before peaking on November 4 ($M = 4.13$, $SD = .61$) and then dipping to the lowest level on November 5–6 ($M = 3.72$, $SD = .68$). Although too few headlines specifically mentioned Obama ($N = 14$, less than 4% of the total headlines) to include in analyses, the trend over time is consistent with my conjecture that news coverage of the hurricane became more negative as election day approached; indeed, the tenor on November 5–6 was significantly more negative than on November 4 or November 2–3 ($ps < .02$), and marginally more negative than October 31, the first window of the study ($p = .11$).

Additionally, relative positivity of the news headlines on November 1, November 2–3, November 4, and November 5–6 correlated with Obama's vote share ($r = .65$) and relative preference for Obama ($r = .45$) across those windows, albeit not significantly ($ps > .35$). However, relative positivity of the news headlines correlated significantly with the correlation between participants' reports of exposure to Sandy news coverage and their relative preference for Obama, $r = .98$, $p = .03$. In other words, more positive news coverage corresponded with positive correlations between exposure to news coverage and preference for Obama, whereas more negative news coverage corresponded with negative correlations between exposure to news coverage and preference for Obama. Given the extremely small sample ($N = 4$ post-coverage windows), the strength of these correlations must be interpreted with caution. However, they are clearly consistent with the interpretation that the tenor of news coverage played a role in the (variable) influence of Hurricane Sandy on views of Obama.

4. General discussion

The present study provides some support for the proposition that Hurricane Sandy influenced voters' attitudes toward and propensity to vote for President Obama vs. Mitt Romney. In contrast to prevailing assumptions among many political pundits, the storm's influence may have changed over time rather than being univalent. Specifically, the present study's correlational and experimental results converge to suggest that when Hurricane Sandy was salient to voters—either because they had been more affected by the storm or simply reminded about it—they developed more positive attitudes toward Obama, but only immediately after he received positive news coverage for his handling of the disaster. The effect reversed by election day, when news coverage had seems to have begun focusing more on lingering damage, power outages, and gas shortages, not to mention the loss of life (a casual observation that is supported by the above-reported analyses of news headlines).

The results do not seem to help adjudicate the relative validity of theories that make similar predictions about how (and why) a natural disaster might be expected to affect a national election held in the aftermath, particularly because none of the threat-compensation theories discussed in the Introduction seem to unequivocally predict an effect that would change over time in the precise manner indicated by the present study's results. However, the results are generally consistent with theoretical work suggesting that the impact of psychological threats, among which natural disasters can surely be counted, changes as a function of contextually salient factors (e.g., Jonas et al.'s 2008 research showing that people defend against

threats by adhering to salient norms). Research suggests that threats to psychological security affect people's attitudes toward political leaders in a way that is primarily palliative—that is, motivated by the desire to restore equanimity (e.g., Cohen et al., 2004; Kay et al., 2008; Kosloff et al., 2010; Landau et al., 2004). The present study suggests that such reactions may depend not only on voter and leader factors (e.g., political orientation, charisma), but also on contextual factors such as the tenor of news coverage, or the way in which a salient threat unfolds over time, which may influence how voters perceive leaders (e.g., as representing the status quo, a particular ideology, strength and resolve, or bumbling incompetence). These issues seem to deserve additional empirical attention; future research conducted in the same vein as the present study should include measures of potential mediators, in addition to measuring (or manipulating) contextual variables.

Naturally, the present study was limited in a few ways, some of which could be addressed in future research. First, the present study's samples were not random and the study was not longitudinal, so it is possible that the samples differed across time in some way that could contribute to the changing pattern of results. Second, the experimental portion of the study was necessarily a simulation, rather than a direct measurement, of real-world processes. Although the findings suggest that Obama's victory occurred in spite of Hurricane Sandy rather than because of it, it remains possible that the storm influenced voters in undetected ways. All participants must have known about the storm, so there was no "true" control condition; moreover, it is unclear how the campaigns may have unfolded had the storm not occurred.

Because the study was conducted after the storm had already hit, it is not possible to determine how it might have changed the dynamics of the race as they were at that point (national tracking poll data seem to suggest a fairly even race, at least at the national level, during both the week prior to the hurricane and the week after). However, a strength of the study is the convergence of correlational and experimental results. If the hurricane was having an impact on the campaign prior to November 1, then one would expect an initial positive correlation between exposure to Sandy and attitudes toward Obama. In fact, no such correlation was detected, and although one did emerge from November 2 to November 4, it was quickly eliminated and became nominally negative. These results match with the experimental results, in which "exposure" to Sandy was randomly induced.[5]

In sum, this study suggests that the effect of Hurricane Sandy on the election were variable and small in magnitude. If there was any proximate effect on voters for whom Sandy was salient as they went to the polls, it seems likely to have been negative for President Obama, despite a popular storyline to the contrary.

Beyond these conclusions, the present study illustrates the potential utility of mixed correlational/experimental investigations into the effects of real-world events' salience as they are unfolding. According to some exit polls, 26% of voters said the hurricane was an important contributor to their vote, with 15% naming it as the top factor (Schultheis, 2012). But such polls may reflect *beliefs* about the storm's influence instead of its actual influence. Even experimental studies conducted outside the temporal context of current events are burdened by additional external validity problems. The present study may represent a useful complement to more commonly employed approaches to assessing the influence of unpredictable, large-scale events—which may be more nuanced than conventional wisdom frequently implies.

Acknowledgments

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[5] The convergence of results and their particular pattern across time also suggest that the results can be attributed to Sandy reminders per se, not some more general feature of the experimental manipulation.

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