

## Adversity in life and compensatory affirmation

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Experienced adversity in life is associated with polarized and affirmed political  
attitudes

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ABSTRACT

Many studies find that when made to feel uncertain, participants respond by affirming importantly-held beliefs. However, while theories argue that these effects should persist over time for highly disruptive experiences, almost no research has been performed outside the lab. We conducted a secondary analysis of data from a national sample of U.S. adults (N=1613) who were followed longitudinally for 3 years. Participants reported lifetime and recent adversities experienced annually, as well as their opinions on a number of questions related to inter-group hostility and aggression towards out-groups, similar to those used in many lab studies of uncertainty. We anticipated that those who had experienced adversity would show more extreme support for their position. There was a positive relationship between adversity and the tendency to strongly affirm and polarize their positions. Results suggest that adverse life events may lead to long-lasting changes in one's tendency to polarize one's political attitudes.

Keywords: compensatory affirmation; adversity; secondary analysis

**Experienced adversity in life is associated with polarized and affirmed political attitudes**

Many uncertainty theories propose that unexpected events can lead people to affirm beliefs (Heine, Proulx, & Vohs, 2006; Jonas et al., 2014; McGregor, Nash, Mann, & Phills, 2010; van den Bos, 2009). With some variation, these theories suggest that affirming intact meaningful beliefs provides a palliative function, drawing one's attention away from the unpleasant state caused by the anomaly. As such, this response is often referred to as “compensatory affirmation.” There are two primary ways in which people appear to affirm in response to adverse events. First, many studies have shown that uncertainty increases preference for conservative perspectives, because these views emphasize resistance to change, intolerance of ambiguity, and reinforce the status quo (e.g., Proulx & Heine, 2008; Randles et al., 2015, study 1). Alternatively – or in addition – people may become more polarized in their existing beliefs, showing an increased extremity bias whether towards the conservative pole or not (e.g., Kosloff, Greenberg, Weise, & Solomon, 2010; Proulx & Major, 2013; Randles et al., 2015, study 4).

Most compensatory affirmation studies measure reactions to acute uncertainty using controlled lab manipulations (e.g., Randles, Heine, & Santos, 2013). However, experiencing adversity in real life should pose an even stronger challenge to one's sense of certainty and meaning, as it can disrupt interpersonal relationships, undermine one's ability to function effectively, and call one's worldview into question (Janoff-Bulman, 1992; Park, Mills, & Edmondson, 2012; Silver & Updegraff, 2013). Nonetheless, this hypothesis has remained largely

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untested despite hundreds of laboratory studies, due in no small part to the difficulty of monitoring people during truly adverse circumstances (Hogg, 2014). The question remains, how much are these reactions restricted to laboratory settings?

We have found only three studies that tracked affirmations of belief following a real-world event, all of which relied on community-wide tragedies. Specifically, these studies investigated changes in religiosity among young adults following the 9/11 attacks in the U.S. (Uecker, 2008), changes in value-orientation among Israeli youth in the Israeli-Lebanese war (Daniel et al., 2013), and changes in religiosity among a community sample following the 2011 earthquake in New Zealand (Sibley & Bulbulia, 2003). Although these studies appear consistent with compensatory affirmation (i.e., people showed heightened religiosity, and increased emphasis on values of tradition, security, and power following these tragedies), there are limitations to seeing these results as evidence for real-life compensatory affirmation. First, as these were collective tragedies, they may lead to different responses compared with personally-experienced events. Second, part of the reaction to large-scale events may be the result of cultural transmission, such as increasing church attendance because one's neighbors or friends have started attending services (Poulin, Silver, Gil-Rivas, Holman, & McIntosh, 2009). Finally, two of these studies only looked at increased religiosity, which may have increased in the face of tragedies for reasons aside from compensatory affirmation (e.g., religious belief may be a unique source of comfort, serving to provide people with answers; McIntosh, Silver, & Wortman, 1993; Sibley & Bulbulia, 2003; Uecker, 2008). In line

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with this last concern, Americans responded to the events of 9/11 with a number of behaviors that could be seen as attempts to directly respond to the event at hand, including greater willingness to trade civil liberties for security, support for increasing surveillance of Muslim Americans, and patriotic gestures such as displaying the American flag (c.f. Morgan, Wisneski, & Skitka, 2011). The shared nature of the tragedy prevents us from differentiating resolution-oriented motivations, such as supporting one's in-group or preventing future attacks, from a more abstract motivation to minimize personally felt anxiety via compensatory affirmation.

To address these limitations, the current study explores whether people will show evidence for compensatory affirmation in the face of personally-experienced adversity. We completed a secondary analysis of data collected among a representative sample of U.S. residents who were asked about their lifetime exposure to and recent experience of stressful life events over a three-year period. The study also included a number of questions regarding political attitudes, so compensatory affirmation could be investigated by exploring whether participants' political attitudes changed in any systematic way following personal life stressors. These data represent an important opportunity for understanding the process of uncertainty. It allows us to assess the effects of truly adverse circumstances, avoiding laboratory manipulations that are necessarily benign; it allows us to observe whether these disruptive events have a persistent effect outside the scope of minutes or at most days; it allows us to explore whether the effects generalize beyond student samples; finally, these data provide an opportunity to question

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whether the trend towards conservative attitudes when feeling uncertain is a bona fide psychological response, or possibly an artifact of sampling.

Concerning the final point, we tested whether participants' political attitudes became either more conservative or just generally more extreme. While the majority of compensatory affirmation studies find an increased preference for in-groups, conservative ideology, and distancing from out-groups (e.g., Burket et al., 2010), there are some studies that find participants move more strongly towards more liberal or open ideologies, provided they already hold those perspectives or they are made salient. For example, participants who do not believe in a just world are more likely to support affirmative action after a meaning violation relative to those high in Just World Beliefs (Proulx & Major, 2013), and priming pacifist elements of one's culture interacts with mortality salience to increase, rather than decrease, pacifist attitudes (Jonas et al., 2008). Securely attached individuals show a stronger preference for liberal vs. conservative political leaders when thinking of their death (Weise et al., 2008), despite other studies finding a main effect of preference for conservative and hawkish political leaders using the same manipulation (Landau et al., 2004). Finally, one longitudinal study using a measure of disrupting life events found that more disruption caused participants to shift their endorsement of traditional values, but not in a consistent direction (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009). Thus, given the current state of evidence for both hypotheses, we considered examining longitudinal data from a national sample to provide an ideal opportunity for assessing whether polarizing opinions are the

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dominant effect when the sample is not homogeneous (i.e. undergraduate psychology students from the same college).

### **Method**

Data were from the Societal Implications study, a 3-year study of a nationally representative sample of Americans. The survey focused on the psychological and emotional aftermath of the 9/11 terrorist attack and current opinions regarding governance and foreign policy for the years late 2006 through early 2009 (Blum, Silver, & Poulin, 2014; Shambaugh et al., 2010). The sample (N = 1613) was 51% women, with ages ranging from 18 to 91 (mean age = 45.95, SD = 15.88). Forty-six percent had a high school or equivalent education or less, 45% had completed or partially completed a post-secondary degree, and 9% had completed an advanced or professional degree. Annual income was collected in binned values, and ranged from "less than \$5 000" to "\$175 000 or more", with most participants (90%) making more than \$5 000 per year and less than \$125 000.

### **Measure of adversity**

Cumulative lifetime adversity was measured by asking respondents whether they ever experienced each of 37 negative events and the age(s) at which they occurred. Events categories include own illness or injury, loved one's illness or injury, violence (e.g., physical assault, forced sexual relations), bereavement (e.g., parent's death), social/environmental stress (e.g., serious financial difficulties, lived in dangerous housing), relationship stress (e.g., parents' divorce), and disaster (e.g., major fire, flood, earthquake, or other community disaster; see Blum, Silver, & Poulin, 2014, for full list). The measure was modified from the Diagnostic Interview

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Schedule trauma section (Robins, Helzer, Croughan, & Ratcliff, 1981) to include a wider variety of lifetime stressors (Holman, Silver, & Waitzkin, 2000). In the first Wave, participants were asked to report the occurrence of any of these events, when they occurred, and how many times (up to 4 mentions). In the two subsequent waves, completed one year apart, participants updated the list for any experiences that had occurred over the previous 12 months.

Although some of the events might intuitively appear more traumatic than others, we weighted all events in the list the same, consistent with current state-of-the-art measurement of exposure to adversity in the stress and coping field (see Seery, Holman, & Silver, 2010). This was the most conservative approach for a secondary analysis, but also highlights our expectation that any disruptive experience may impact one's meaningful worldview in a similar manner. We observed the effects of events that had happened in the prior 12-23 months for Wave 1, and the prior 12 months for Waves 2 and 3. The larger Wave 1 window was due to questionnaire wording that made it impossible to distinguish between events 1 and 2 years past.

### **Compensatory affirmation**

The questionnaire contained a number of opinion items referring to inter-group hostility and aggression towards out-groups to which the respondent could agree or disagree on 5-point scales (Shambaugh et al., 2010). Some examples include "The U.S. was justified in attacking Iraq after 9/11," "The U.S. is justified in using torture to protect national security," and "The U.S. should act preemptively to prevent possible terrorist attacks" (see Supplementary Online Material (SOM) for



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full list). We selected all items that solicited opinions on an international issue to serve as the dependent variable. The first author selected items that subjectively matched our criteria, selection was confirmed with the 4<sup>th</sup> author, with any discrepancies discussed until agreement was reached. While we were constrained by available questions that had been included as part of the original surveys, these items are similar to measures of affirmation used in lab studies of uncertainty, violations of meaning, or mortality salience. For example, participants have been assessed on attitudes of religious extremism (McGregor, Prentice, & Nash, 2013), in-group bias (Castano et al., 2002; Greenberg et al., 1990), and support for war, excessive collateral damage, torture, martyrdom, and disregard for human rights of out-groups (Hirschberger, Pyszczynski, & Ein-Dor, 2009; Orehek et al., 2010; Pyszczynski, Abdollahi, & Solomon, 2006; Weise et al., 2008). Theorists who have used inter-group hostility as an affirmed belief do not always agree on why these beliefs are important, though most argue that non-group members are perceived as a physical threat, as a threat to one's way of life, or as a more abstract threat to one's worldview (see Jonas et al., 2014, for a review). Given that almost none of the adverse life events reported by our participants were directly related to foreign policy issues, this gave us a measure of compensatory affirmation that is not confounded with motivations to prevent a repeat incident of their particular harm.

Adjustments to the questionnaire were made across years for the purposes of the original study to assess contemporary issues. For example, in Wave 1 many of the questions directly referenced Iraq, while in Wave 3 there were fewer items concerning Iraq, but more items that focused on preemptive counter-terrorism. In

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each case, we selected all items matching our criteria, creating an average for Waves 1, 2, and 3 based on 11, 16, and 13 items, respectively. Although the bulk of these items were meant to assess different political questions or issues, the alpha reliability of the items were reasonably high across waves (Wave 1  $\alpha = .82$ ; Wave 2  $\alpha = .79$ ; Wave 3  $\alpha = .79$ ). Therefore, we treated the items as a single scale, measuring affirmation across the questions. We included Wave as a covariate in all analyses to control for differences in the dependent variable that were either a function of national mood in that year, or artifacts of a different number of items being used for a particular wave.

As a test of the hypothesis that meaning violations bias one towards conservative thinking, we took the average of these items, reverse-scoring any items such that higher scores always pointed towards greater inter-group hostility (see SOM for full list). This provided a single score from 1-5 for each individual at each wave, despite some of the waves containing more items than others. To test the polarization hypothesis – that violations of meaning reinforce one's already held worldview – we tested for an increase in extremity bias. This refers to the tendency to prefer the outer edges of a scale, avoiding responses that are ambiguous or uncertain (Paulhus & Vazire, 2007). This bias has been most actively studied in cultural psychology, where people with more interdependent self-concepts or dialectical thinking styles show a decreased extremity bias (Chen, Lee, & Stevenson, 1995; Hamamura, Heine, & Paulhus, 2008). To assess increased polarity of responding, we first took the absolute deviation for each item around its center score (3 on the scale, referring to "neither agree nor disagree") and then took the

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average of these deviated scores to construct the scale. The resulting score ranged from 0 - 2, where 0 indicated someone always selecting the middle option, and higher scores representing individuals who tended to select more extreme values. Thus, someone who consistently chose 4 ("moderately agree") would now have a score of 1, as an average score of 4 is 1 point from the scale mid-point of 3. Likewise, someone who consistently chose 2 ("moderately disagree") would also now have a score of 1; their absolute deviation from the scale mid-point is the same despite holding different views on the topic. This is different from ipsatizing (deviating scores from the group mean; Cunningham, Cunningham, & Green, 1977), which establishes an individual's deviation from group norms, but not the extremeness or polarity of one's own response. This approach does not assume that a participant consistently stays on the left-or-right pole. While polarization in theory reinforces a person's world-view, we are ignorant of our participants' true beliefs; particularly in cases where they are close to or on the scale midline (i.e., the users most likely to switch poles), it is difficult to sensibly bin them as left or right poled in our sample.

Assessing a priori power for this study was difficult. While our study uses conceptually similar measures as many uncertainty experiments, it contained a number of key differences. Our study uses a sample that is more diverse than most experiments, we did not have control over our participants' environment, the independent variable occurred months apart from the questionnaire, and the entire study took place over several years. That said, our sample size provides power to detect an effect of  $f^2 = .006$  with 95% power. Thus, it is reasonable to assume that an

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effect that fails to achieve conventional significance is either 0, or close enough that it is not meaningful.

### **Results**

Descriptive statistics are presented in Table 1. All analyses employ the same linear multilevel model provided in the nlme package (Pinheiro et al., 2014) in R. Both adversity and Wave were entered as time-varying predictors (level 1), clustered within participant (level 2). For each model, significant variability of both the adversity and Wave random effects was first verified by observing a significant drop in the log likelihood test (Hayes, 2006). Significant variability was assessed by running the model with fixed slopes for both variables, followed by allowing Wave to vary, then adversity. For all models, both predictors revealed significant within person variance of slope, with intra-class correlations above .128. An autoregressive (AR1) correlation structure was used, which anticipates correlation between repeated measures, making it appropriate for longitudinal data. The model was run first using unstandardized predictors, and then re-run using standardized variables. Standardizing prior to analysis can make interpreting individual coefficients difficult, but is desirable because it makes for easier comparisons across coefficients. Here we present both, and note that the pattern of significance is not different at any point in the standardized vs. unstandardized version. All results reported in text are the fixed effects from the standardized version of the model. Model random effects and the unstandardized version of the model are presented alongside the standardized model in Tables 2 and 3.

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*Table 1 Descriptive statistics*

Variable	Wave 1	Wave 2	Wave 3
Recent adversity	1.26(1.73)	1.52(2.11)	1.41(1.75)
Affirmation	3.11(.81)	3.22(.76)	3.17(.77)
Center-deviated affirmation	1.07(.50)	1.08(.49)	1.03(.47)
Sample N	1596	1151	974

Note: Mean and standard deviations for key variables at each wave. Recent adversity refers to the average number of events that occurred per person in the previous 12-24 months for Wave 1 and the previous 12 months for Waves 2 and 3. Affirmation refers to the sum of all political attitude items (coded so that higher numbers are more conservative). Center-deviated affirmation refers to the mean of the absolute distance of each item from the item center (3 on a 5-point scale).

We first examined whether experiencing adversity increases one's tendency to strongly affirm conservative and in-group biased attitudes. Increases in recent adversities was not significantly associated with increased conservatism,  $\beta = .022$ ,  $p = .097$ ,  $CI_{.975}[(-).005 - .048]$ . To examine polarization, we assessed whether recent adversity was associated with an individual's increased use of the more extreme ends of the scale, regardless of his/her agreement with the items. Results indicated that recent adversity significantly predicts more polarization,  $\beta = .044$ ,  $p = .006$ ,  $CI_{.975} [.013 - .075]$ ,

There are a number of demographic and trait variables that may account for the relationship between recent adversity and either conservative or polarized attitudes. To address this, we re-ran the model with the following covariates: gender

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and city vs. rural living were each entered as binary factors; education, income, age, and political identification (7-point Likert scale from Republican to Democrat) were each mean-centered. For the standardized model, these latter variables were also normalized to a standard deviation of 1. We also included past events (those that occurred at least 24 months prior to Wave 1) to observe the effect of lifetime adversity on a person's compensatory affirmation. This variable was entered as a time-varying (level 1) covariate and was updated to represent the cumulative total of past adversity for any given year. For example, in Wave 2, all adverse events that had occurred prior to Wave 1 were added to the past adversity variable, while recent adversity contains only events that occurred between Waves 1 and 2. As with the other variables, recent and past events were normalized to a mean of 0 and standard deviation of 1 for the standardized model. Descriptive statistics for all trait variables can be found in the SOM.

When including these trait and demographic predictors, and controlling for adverse events earlier in the person's life, recent adversity now significantly predicts increased conservative attitudes,  $\beta = .033$ ,  $p = .02$ ,  $CI_{.975} [.006 - .060]$ . However, past adversity (lifetime events occurring more than 24 months prior to Wave 1) does not predict increased conservative attitudes  $\beta = .002$ ,  $p > .25$ ,  $CI_{.975} [(-).041 - .045]$ . Meanwhile, an increased number of adverse events continues to be associated with greater polarized attitudes. Past adversity is positively associated with increased polarization,  $\beta = .155^{***}$ ,  $p < .001$ ,  $CI_{.975} [.110 - .200]$ , while recent adversity predicts increased polarization independent of past events,  $\beta = .046$ ,  $p = .005$ ,  $CI_{.975} [.014 - .078]$ .

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*Table 2 Past and recent adversity predicting conservatism, and polarization*

Predictor	More Conservative		More Polarized	
	SD	SD	SD	SD
Random effects				
Intercept	.721	.891		.959
Recent adversity	.055** (.128)	.130** (.214)	.043*** (.190)	.170*** (.304)
Wave	.095* (.201)	.121* (.201)	.176*** (.488)	.370*** (.488)
Fixed effects	B	$\beta$	B	$\beta$
Intercept	3.11	-.042	.038	.038
Recent adversity	.010 (.006)	.022 (.014)	.011** (.004)	.044** (.016)
Wave	.037*** (.009)	.047*** (.011)	-.029 (.006)	-.06*** (.013)

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*Table 3 Model including all covariates*

Predictor	More Conservative		More Polarized	
Random effects	SD	SD	SD	SD
Intercept	.628	.790	.439	.889
Recent adversity	.056** (.164)	.132** (.234)	.044*** (.23)	.174*** (.302)
Wave	.144* (.297)	.182* (.297)	.167** (.467)	.351** (.467)
Fixed effects	B	$\beta$	B	$\beta$
Intercept	3.181	.053	.858	-.198
Recent adversity	.014* (.006)	.033* (.014)	.012** (.004)	.046** (.016)
Wave	.036*** (.009)	.045*** (.011)	-.030*** (.006)	-.062*** (.013)
Past adversity	.000 (.002)	.002 (.022)	.010*** (.002)	.155*** (.023)
Male	.006 (.034)	.007 (.042)	.130*** (.021)	.273*** (.045)
Urban	-.066 (.041)	-.084 (.052)	.058* (.026)	.123* (.045)
Education	-.081*** (.010)	-.174*** (.022)	.031*** (.006)	.109*** (.023)
Income	.012** (.004)	.066** (.022)	.014*** (.003)	.129*** (.023)
Democrat	-.159*** (.008)	-.423*** (.021)	.008 (.005)	.033 (.022)
Age	.005*** (.001)	.100*** (.022)	.003*** (.001)	.089*** (.023)

Note for tables 2 and 3: Random effects are reported as standard deviations, with the intra-class correlation reported in brackets. B refers to the fixed effect beta coefficient from the unstandardized model,  $\beta$  is the standardized model fixed effect coefficient. Fixed effects standard errors are in brackets. (N = 1613). For political party leaning, participants responded on a 7-point scale, with 1 being “strongly republican” and 7 being “strongly Democrat”. \*:  $p < .05$ , \*\*:  $p < .01$ , \*\*\* $p < .001$



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Across all analyses, the evidence suggests polarization is the stronger effect, but that a trend towards affirming conservative policies is also present. Given these two somewhat contradictory effects, we re-ran the analyses moderating the recent adversity variable by participant's self-reported left/right leanings (7-point item from "strongly liberal" to "strongly conservative"). In all four analyses, the moderation was not significant. For affirmation without ( $p = .11$ ) and with ( $p = .25$ ) covariates, as well as polarization without ( $p = .36$ ) and with ( $p = .28$ ) covariates, the reported effects appear to apply equally to those with either liberal or conservative leanings.

## Discussion

Americans who experienced personal adversity showed increased affirmation on attitudes that are largely unrelated to their adverse life experiences. Support for the conservatism hypothesis was weak but present, with a small effect emerging following recent adverse events. Support for the polarization hypothesis was stronger, with a larger effect size that was significant with or without the inclusion of relevant covariates. Additionally, past adversity also predicted increased polarization, while it did not predict increased conservatism.

At first these data might seem to challenge the more consistent finding that adversity and uncertainty lead to conservative attitudes (e.g., Hogg, 2014). However, given that our sample was largely balanced in terms of left-right political spectrum (see Table S1), these data support the interpretation that most people do lean more towards conservative views following uncertainty, while a smaller group moves towards more liberal attitudes. Regardless of direction, everyone is moved by

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adversity to become more polarized in their beliefs. Said another way, if adversity moved everyone towards their preferred pole of the political spectrum, we should have seen a strong effect of polarity with no shift towards conservative attitudes. Likewise, if adversity made everyone more conservative, we would have expected no effect for polarity (or possibly a decrease), as hard leftists moved closer to the center. However, the fact that people respond differently to adversity does not necessarily imply that separate psychological processes are at play. It may be that, despite conservatism providing a generally more entitative group geared towards in-group bias and ideology (Hogg, 2014; Hogg et al., 2013), it is easier for some people to strongly identify with left-leaning groups and ideology because of their particular social network or life experience.

We believe this is the first study to provide ecologically-valid support that uncertainty and violations of meaning can lead to a chronic tendency to affirm importantly-held beliefs. It supports a long-standing finding from laboratory studies, but one that has never before been investigated with a large national sample and real-world adverse events. As such, it provides important insight into a number of limitations of lab studies. Our national sample ranged from 18 to over 90 years old, from impoverished to wealthy, and contained a range of political orientations, religiosity, education, and ethnicities. That our results have conceptually replicated what has been found many times in the lab helps to reduce concerns that affirmation is a WEIRD phenomenon (Henrich, Heine, & Norenzayan, 2010), emerging only amongst healthy and reasonably wealthy young students. Additionally, our measure of adversity reflects the kind of event that theorists have

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always typically cared about (e.g., Jonas et al., 2014), despite the fact that the overwhelming amount of research on this topic involves asking students to contemplate a hypothetical distressing scenario (e.g., Burke et al., 2010), or exposing them to mildly unsettling stimuli (e.g., Randles et al., 2013). Although our study focused exclusively on inter-group hostility at the national level, the wide range of affirmed beliefs found in laboratory studies leads us to suggest that adversity may be creating a shift towards more polarized thinking across an individual's entire worldview. This is a cautious prediction that we anticipate will be borne out with future studies.

Four important limitations exist. First, the effect sizes for either recent or past adversity are small. While the robust significance in the presence of other important covariates increases the confidence that the effect is real, the results suggest that adversity is only one contributing factor behind a person's motivation to take extreme or polar opinions on important personally-held beliefs. Second, while our sample is a considerable improvement over exclusively monitoring undergraduate students, the tendency to rely on extreme responding as a coping strategy may be unique to Americans or more broadly individualistic cultures. Collectivist cultures tend to show a bias away from extreme responding in general (e.g., Hamamura et al., 2008); it is possible that uncertainty interacts with these baseline preferences differently. Third, while these results support various uncertainty theories (c.f. Jonas et al., 2014), the naturalistic nature of the data does not position it well to make a strong case for one particular theory over others. Finally, these data are correlational and come with the standard caveats concerning

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the inability to draw causal conclusions from these findings. Nonetheless, the fact that our sample was longitudinal and recent adversity only included events that had occurred 12-24 months prior to each attitude assessment, argues for the possibility that adversity is causing more extreme responding. Additionally, given that adversity at this scale cannot be manipulated, we believe these data are supported by the experimental findings published elsewhere using milder stressors that led to our hypotheses.

In addition to the well-represented participant demographics, the original study's thorough documentation of life adversity over three years provides insight into affirmation that was previously inaccessible. This is one of the first studies to indicate that profoundly difficult life events trigger affirmation in the same manner as subtler, abstract manipulations of uncertainty (e.g., Randles et al., 2015; Randles, Proulx, & Heine, 2011) and that experiencing more of these events continues to nudge people towards holding ever more extreme polar opinions. Additionally, the longitudinal results suggest that these effects persist for years. Possibly as a result of this long-lasting shift, affirmation appears to be more strongly related to the experience of past, rather than recent, adversity. This may be because disruptive events become less unexpected in the face of repeated traumas. As Janoff-Bulman (1992) discusses, adverse events often cause a "double-dose" of anxiety, first for the problems themselves, but secondly for defying a person's implicit belief in a fair or just world. It may be that this belief of fairness never fully returns after adversity first strikes (Silver & Updegraff, 2013). Another possibility, though, is that once a person begins to show a tendency towards polarized thinking, the process becomes

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self-reinforcing and permanent. That is, if affirming attitudes in a polar and defensive way is palliative, it may become associated with reduced anxiety, leading to a habitual shift in cognition.

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### **AUTHORS' NOTES**

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### **AUTHORS' CONTRIBUTIONS**

R. C. Silver and M. J. Poulin designed the research; R. C. Silver and M. J. Poulin performed the research; D. Randles analyzed the data. D. Randles and S. J. Heine wrote the manuscript and R. C. Silver and M. J. Poulin provided critical feedback. All authors approved the final version of the manuscript for submission.

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