RESEARCH ARTICLE

Meaning threat can promote peaceful, not only military-based approaches to intergroup conflict: The moderating role of ingroup glorification

Daniel R. Rovenpor*, Bernhard Leidner*, Peter Kardos† & Thomas C. O'Brien*

* Department of Psychological and Brain Sciences, University of Massachusetts Amherst, Amherst, MA, USA
† Division of Social & Behavioral Science, Bloomfield College, Bloomfield, NJ, USA

Correspondence
Daniel Rovenpor, Department of Psychological and Brain Sciences, University of Massachusetts Amherst, 135 Hicks Way, Amherst, MA 01003, USA.
E-mail: drovenpo@psych.umass.edu

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Abstract

Most research on threat documents its negative consequences. Similarly, most research on intergroup contexts has emphasized their negative behavioral effects. Drawing on the Meaning Maintenance Model and recent perspectives on the potential for positivity in intergroup conflict, we predicted that meaning threat can produce both antisocial and prosocial responses to intergroup conflict, depending on people's preexisting meaning frameworks. Studies 1 and 2 demonstrated that under meaning threat, low ingroup glorifiers strengthened their support for peaceful conflict resolution, whereas high ingroup glorifiers strengthened their support for military-based conflict resolution. In the context of the Israel–Palestinian conflict, Study 3 found that low glorification was associated with greater support for peace during "hot" (but not "cold") conflict, because hot conflict reduced their meaning in life. These findings are consistent with the notion that when meaning is threatened, people affirm their preexisting values—whether pro-social or anti-social—even in the context of intergroup conflict.

Meaning has been identified as a fundamental object of human motivation (e.g., Maddi, 1970; Steger, 2009), and the search for meaning has been recognized as a key element of the human condition (e.g., Camus, 1955; Heidegger, 1953/1996; Kierkegaard, 1843/1996). Philosophers and psychologists alike have long recognized that humans strive to find significance in their lives and perceive their surroundings as comprehensible. In an effort to describe and explain how people act when meaning is threatened or lacking, the Meaning Maintenance Model (MMM; Heine, Proulx, & Vohs, 2006; Proulx & Inzlicht, 2012) has proposed that people can detect and are troubled by meaninglessness, and thus become motivated to reaffirm their values in order to maintain meaning. While this core theoretical proposition of the MMM remains neutral as to whether meaning maintenance occurs by affirming positive (i.e., prosocial) or negative (i.e., antisocial) values, the overwhelming emphasis in the empirical literatures on meaning threat and other kinds of threat has been on negative outcomes (e.g., outgroup derogation; Greenberg et al., 1990; Proulx, Heine, & Vohs, 2010). In this paper, we test when, how, and for whom meaning threat can lead to positive outcomes.

Threat and Meaning Maintenance

In support of the MMM, a growing body of work has provided evidence that implicit threats to meaning in the form of basic expectancy violations motivate people to affirm meaning, even in domains unrelated to the original meaning violation (for reviews see Heine et al., 2006; Proulx & Heine, 2010; Proulx & Inzlicht, 2012). Reading absurdist literature, for example, leads people to perceive meaningful patterns in complex letter strings (Proulx & Heine, 2009) and to affirm their cultural identity (Proulx et al., 2010); exposure to unconscious perceptual anomalies or absurdist humor leads people to affirm their moral schemas (Proulx & Heine, 2008); and exposure to absurdist art leads people to report a higher need for structure (Proulx et al., 2010).

Evidence from other literatures is consistent with the MMM's general idea that people reaffirm their meaning frameworks when faced with threat (for reviews see Heine et al., 2006; Proulx, 2012; Proulx & Heine, 2010). For example, when uncertain (Hogg, 2007; Van den Bos, 2009) or confronted with reminders of human mortality (e.g., Greenberg, Simon, Psyczcysnki, Solomon, & Chatel, 1992; Greenberg, Solomon, & Pysczcynski, 1997), people will cling to their cultural worldview. In a similar vein, people verify their worldview (Major, Kaiser, O'Brien, & McCoy, 2007), justify the system they live in (Jost, Banaji, & Nosek, 2004), and affirm their self-concept (Steele, 1988), beliefs (Grieve & Hogg, 1999; Jost et al., 2004; Lerner, 1980; Van den Bos, 2001), and sense of control (Kay, Gaucher, Napier, Callan, & Laurin, 2008) when any of these

(i.e., worldview, societal system, self-concept, belief system, or perceived control) are specifically threatened (for reviews see Baumeister & Vohs, 2004; Greenberg, Koole, & Pyszczynski, 2004; Kay et al., 2008; Leary & Baumeister, 2000; Martin, 1999; Tice, Baumeister, Shmueli, & Muraven, 2007). While these literatures have not been framed in terms of meaning threat per se, they demonstrate similar effects with related types of threat (e.g., uncertainty, mortality salience). A detailed discussion of the similarities and differences between these literatures is beyond the scope of this paper and can be found elsewhere (e.g., Heine et al., 2006; Proulx & Heine, 2010; Proulx & Inzlicht, 2012; Pyszczynski, Greenberg, Solomon, & Maxfield, 2006). Here, we seek to highlight—and ultimately build upon—the converging evidence from multiple literatures demonstrating that threat motivates people to affirm their values, beliefs, and worldviews.

Threat Compensation Through Antisociality Versus Prosociality

Despite the numerous literatures devoted to the study of threat, all of them have largely focused on its negative consequences. Indeed, psychology as a discipline has long taken the view that threat by and large has negative consequences for human behavior. Research has demonstrated, for instance, that when experiencing threat, people respond more punitively to others who do not share their worldview (e.g., Proulx et al., 2010; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989), derogate outgroup members (e.g., Greenberg et al., 1990), and increase their support for extreme violence and war against entire groups of others (e.g., Hirschberger & Ein-Dor, 2006; Pysczcysnki et al., 2006). Negative effects of threat are overwhelmingly found across the many different kinds of threat, including meaning threat, uncertainty, and mortality salience, among others. Given this state of the literature, it is particularly important to know whether threat is insensitive to context and the behavior it elicits is always negative, or whether threat is context-sensitive and the behavior it elicits can be positive when people's preexisting meaning frameworks are prosocial.

Similar to the focus on negative behavior among the various literatures on threat, researchers have also often assumed that the intergroup context—especially intergroup conflict—inherently promotes negative social behaviors (e.g., Wildschut, Pinter, Vevea, Insko, & Schopler, 2003). However, consistent with emerging views that the intergroup context can be a source of positive behavior (e.g., Spears, 2010; Pittinsky, 2012) and that people do have the capacity to react nonviolently even during intergroup conflict (for a review of both anti- and pro-social human capabilities in intergroup conflict see Leidner, Tropp, & Lickel, 2013), we argue that people's responses to threat can be antisocial *or* prosocial, even in the context of intergroup relations and intergroup conflict. Drawing on the MMM as well as these recent perspectives on the capacity for nonviolent responses to intergroup conflict, we argue that the nature of people's responses to meaning threat should critically depend on preexisting (anti- or pro-social) meaning frameworks. That is, when people hold prosocial meaning frameworks, they should reaffirm these under threat—even in a context in which intergroup conflict is salient—and thus respond pro- rather than anti-socially.

Consistent with our hypothesis, prior research has found that threat does not always lead to antisocial behavior. For example, while people with negative attitudes toward prostitution recommended harsher punishment for prostitution when their own mortality was made salient compared to when mortality was not salient, there was no effect of mortality salience among people with less negative attitudes toward prostitution (Rosenblatt et al., 1989). Going beyond a mere null effect of threat not increasing antisocial behavior, a handful of studies reversed the typical negative effect of threat and found evidence of prosocial reactions to threat—but only when simultaneously administering experimental primes of prosociality. That is, priming of intergroup similarity (Motyl, Hart, Pysczcysnki, Wise, Maxfield, & Siedel, 2011) and prosocial values (e.g., compassion, pacifism; Jonas, Martens, Niesta, Fritsche, Sullivan, & Greenberg, 2008; Jonas, Sullivan, & Greenberg, 2013; Rothschild, Abdollahi, & Pysczcynski, 2009; Schimel, Wohl, & Williams, 2006) in addition to mortality salience led to greater prosocial behavior under threat (for reviews see Niesta, Fritsche, & Jonas, 2008; Pyszczynski, Rothschild, & Abdollahi, 2008; Vail et al., 2012). Based on the MMM we predicted that prosocial effects of threat should occur per se, naturally, and without additional experimental primes of prosociality. In other words, prosocial effects should occur for anyone who responds to a meaning threat by reaffirming a preexisting meaning framework that is prosocial. Importantly, this effect should even occur in the context of intergroup conflict and even when people see the target group as adversarial and/or dissimilar to their own.

Individual Differences in Prosocial Threat Compensation

Some researchers have suggested that prosocial effects of threat might occur when the context of the behavior does not itself prime threat. Mortality salience, for instance, has been demonstrated to lead to positive behavior in terms of donating to charity (a behavior that is not related to death) but not in terms of donating organs (a behavior that is related to death; Hirschberger, Ein-Dor, & Almakias, 2008). Similarly, people have been found to behave more generously in economic games played with ingroup members when previously primed with death (Zaleskiewicz, Gasiorowska, & Kesebir, 2015, Studies 1 and 2). In this case, however, it remains unclear whether people's generosity toward ingroup members reflected prosociality or ingroup favoritism, as it is unknown how people would have behaved toward

outgroup members. Indeed, other research demonstrates that Americans allocate less money to foreign charities under mortality salience (e.g., Jonas et al., 2013), suggesting that ingroup favoritism may have been at play in the Zaleskiewicz et al. (2015) work. These prosocial effects have been interpreted as a possible indication that people might behave prosocially under threat *only* when the behavior itself does not prime death (Hirschberger et al., 2008) and/or when the recipient of the behavior is an ingroup (rather than outgroup) member (Zaleskiewicz et al., 2015). From this perspective, one might predict that threat should not lead to prosocial behavior when it is related to violent intergroup conflict, which usually serves as a strong and blatant prime of death and concerns behaviors toward outgroup members (cf. Vail, Arndt, Motyl, & Pysczcysnki, 2012).

Yet, we argue that threat should lead to positive outcomes regardless of whether the context of the behavior primes death or whether the behavior targets only ingroup members, and that this effect should instead depend primarily on one's preexisting values. Pointing to this possibility, past research has shown that under mortality salience, preexisting attitudes become more extreme: Not only do conservatives become more conservative, but liberals also become more liberal (Bassett, Van Tongeren, Green, Sonntag, & Kilpatrick, 2015; Castano et al., 2011). Similarly, under a potent moral identity threat (e.g., a reminder of atrocities committed by one's ingroup), people who glorify their group increase their preexisting commitment to authority and loyalty morals, while those who do not glorify their group increase their preexisting commitment to harm and fairness morals (Leidner & Castano, 2012). Further, another study recently found that exposure to a perceptual anomaly (e.g., reverse-colored playing cards) led people with liberal-leaning low protestant work ethic beliefs to increase their support for affirmative action (Proulx & Major, 2013). However, this study was unable to replicate the typical negative effects of threat (e.g., among people high in protestant work ethic beliefs). In addition, the moderator of protestant work ethic beliefs was measured before the threat prime, which allows for the possibility that the measure primed people's behavior by bringing up the subject of social equality, similar to prior experiments that primed prosociality directly in addition to manipulating threat. It thus remains unclear whether threat *per se* can lead to prosocial behavior, even without additional primes or qualifications.

To test our hypothesis that meaning threat will lead to prosocial behavior depending on people's preexisting individual differences (but not on additional primes and even when the behavioral context is associated with death), we examined the effect of meaning threat on different approaches toward resolving intergroup conflict among people whose preexisting values are prosocial or antisocial. In the context of intergroup conflict, research on the values that people subscribe to points to the importance of ingroup identification. Recently, ingroup identification has been distinguished into two types: ingroup attachment and ingroup glorification (Roccas, Klar, & Liviatan, 2006). Whereas people who strongly glorify their ingroup believe in its superiority over outgroups and unconditional loyalty to ingroup norms and authorities, those who do not glorify their ingroup subscribe less to intergroup hierarchies and are more open to ingroup criticism. High glorifiers have been shown to react defensively and antisocially to social and moral identity threat, whereas low glorifiers do not show any reaction, or if anything a positive one (Leidner & Castano, 2012; Leidner, Castano, Zaiser, & Giner-Sorolla, 2010; Roccas et al., 2006). With regards to values, high glorifiers subscribe more to values of security, power, and conformity, whereas low glorifiers subscribe more to values of benevolence and universalism (Roccas, Schwartz, & Amit, 2010).

Importantly, although ingroup attachment and glorification are aspects of the same broader construct (i.e., ingroup identification) and therefore overlap to some extent, the aforementioned effects of glorification have been traced back to the "unique" parts of glorification (rather than its overlap with attachment). Thus, we predicted effects of glorification over and above attachment, such that under meaning threat, high glorifiers should behave more antisocially with respect to intergroup conflict (i.e., by increasing their preexisting support for violent conflict resolution approaches), whereas low glorifiers should behave more prosocially (i.e., by increasing their preexisting support for nonviolent conflict resolution approaches).

Overview of the Studies

To test whether meaning threat leads high glorifiers to *de*crease their support for nonviolent conflict resolution but leads low glorifiers to *in*crease their support for it, two studies used an experimental manipulation of a very basic and subtle form of meaning threat that was unrelated to the context/domain of the dependent variable (i.e., intergroup conflict), establishing the effect in a highly experimentally controlled manner. A third study used a quasi-experimental design with a strong, blatant form of meaning threat that was directly related to the context/domain of the dependent variable (i.e., intergroup conflict) and had high ecological validity. This study was conducted in the context of the Israeli–Palestinian conflict during a time of a highly salient "hot" conflict (i.e., the Summer 2014 Israel–Gaza conflict) and a time of relatively less salient "cold" conflict (i.e., December 2014 when the violence had largely ceased), and tested whether, during hot but not cold conflict, the association between low glorification and greater support for peace was explained by a reduction in perceived meaning in life. Consistent with past research, all studies used measures of attachment and glorification specific to the national ingroup of the sample (i.e., American for Studies 1 and 2, Israeli for Study 3). All studies

reported in this paper had ethics approval. The data and materials for Studies 1 and 2 of this paper are available at the Inter-university Consortium for Political and Social Research (www.openicpsr.org); the data and materials for Study 3 will be made available no later than August 2016.

Study 1

Study 1 induced a very basic meaning threat, for three reasons. First, using a basic meaning threat allowed for a stringent test of the hypothesis and comparability to past research using the same kind of threat as well as more potent threats that have been demonstrated to have similar effects (e.g., mortality salience; Proulx & Heine, 2008). Second, Study 1 used a meaning threat that was unrelated to the behavioral context of the outcome variables (i.e., intergroup conflict), ensuring that the experimental manipulation could not be confounded with context- (conflict-)related attitudes in any way. Third, using a basic meaning threat allowed us to test the notion, consistent with the MMM, that people seek to affirm meaning frameworks even when the way in which they do so is unrelated to the nature of the original threat.

Method

Participants. One hundred fifty-five Americans were recruited through Amazon's Mechanical Turk. After excluding five participants not born in the US, one non-native English speaker, 12 participants who did not pay sufficient attention to the manipulation material (indicated by nonsensical or incorrect responses to attention check questions), and nine multivariate outliers (see Tabachnick & Fidell, 2007), 128 participants were retained for data analyses (38% women, 62% men; age $M = 35$, $SD = 12.90$).

Procedure. After giving consent, participants were randomly assigned to read either a coherent (The Tortoise and the Hare by Aesop) or an absurd story (A message from the Emperor by Franz Kafka). These materials were the same as those used by Proulx et al. (2010). Aesop's classic story includes a clear story line and moral, whereas Kafka's story includes an incoherent story line and a paradoxical conclusion, therefore inducing a relatively higher amount of basic meaning threat. Following Proulx et al.'s (2010) procedure, participants then completed manipulation checks, the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), as well as a distractor task in which they rank ordered the importance of 15 different objects (e.g., magnetic compass, nylon rope, water) for surviving on the moon. Then they filled out the measures outlined below on 9-point visual analog scales. Unless indicated otherwise, the scale endpoints were labeled No, absolutely not and Yes, absolutely. Before being debriefed, participants answered demographic questions.

Attention checks. Participants answered open-ended questions about the primary characters in the story (i.e., the tortoise and the hare, or the emperor, the messenger and the anonymous crowds of people). Participants who could not correctly identify any of the characters in the story were excluded from analysis. The findings reported below remained unchanged when including these participants.

Manipulation checks. Participants answered three questions as to how much sense the story made to them, how well it "flowed," and the extent to which there was a moral to the story ($\alpha = .84$). Scale endpoints were labeled Not at all and Very much.

Positive and negative affect. Participants answered 20 items taken from the PANAS (e.g., "Interested," "Enthusiastic," "Guilty," "Insecure"), assessing positive ($\alpha = .89$) and negative affect ($\alpha = .92$) "in response to the story," with scale endpoints Not at all and Very much.

Support for use of military conflict resolution. For two hypothetical situations and one real situation of intergroup conflict participants reported to what extent the conflict should be approached militarily ("In your opinion, should this conflict be approached militarily (e.g., military intervention)?"). The three intergroup conflict scenarios were averaged ($\alpha = .72$) and are presented in the appendix.

Pacifism. Participants expressed agreement with twelve statements ($\alpha = .94$) concerning various issues of peace vs. violence (e.g., "Frequent communication between countries is the best way to resolve conflicts", "Fewer people will suffer if the United States aggressively pursued peaceful diplomacy instead of aggressively using its military", "If our leaders advocate violent solutions, they can only expect more violence in return"; Vail & Motyl, 2010).

Attachment and glorification. National ingroup attachment ($\alpha = .94$; e.g., I love the United States) and glorification ($\alpha = .90$; e.g., America is better than other nations in all respects) were each measured with eight statements (Roccas et al., 2006). Following others (e.g., Feygina, Jost, & Goldsmith, 2009; Hirschberger & Ein-Dor, 2006; Leidner et al., 2010), these intended moderator variables were administered at the end rather than the beginning of the study to avoid making participants suspicious of the study goal, thus eliminating the possibility that demand characteristics could account for our effects. Additionally, this order avoided the possibility that these measures would inadvertently prime people's values.

Results

Manipulation check. The manipulation check questions were averaged into a composite score ($M = 6.74$, $SD = 1.94$), which was then entered as a

dependent variable (DV) in an analysis of variance with condition as the independent variable (IV). As predicted, participants who read Kafka's story ($M = 5.15$, $SD = 1.41$) reported significantly less meaning (i.e., more meaning threat) than participants who read Aesop's fable ($M = 8.28$, $SD = 0.84$), $F(1, 126) = 233.68$, $p < .001$, $\eta_p^2 = 0.65$, 90% $CI_{\eta_p^2}$ [0.5684, 0.7064].[1]

National ingroup attachment and glorification. Neither attachment ($M = 6.45$, $SD = 1.89$), $F(1, 126) = 2.78$, $p = .098$, $\eta_p^2 = 0.02$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0792] ($M_{nothreat} = 6.72$, $SD_{nothreat} = 1.68$, $M_{threat} = 6.17$, $SD_{threat} = 2.05$), nor glorification ($M = 4.75$, $SD = 1.63$), $F(1, 126) = 0.28$, $p = .600$, $\eta_p^2 < 0.001$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0343] ($M_{nothreat} = 4.83$, $SD_{nothreat} = 1.63$, $M_{threat} = 4.68$, $SD_{threat} = 1.65$), was significantly affected by meaning threat, thus allowing us to use them, together with meaning threat, as IVs in subsequent general linear models (GLMs) run in SAS 9.4. Unless noted otherwise, in all moderated regression analyses reported in this paper, attachment and glorification were standardized and treated as full factors with all their interaction terms and all lower order effects, and all simple effects were estimated at high (1 *SD* above the mean) and low (1 *SD* below the mean) levels of these two moderator variables. SAS's GLM procedure outputs *F* values instead of *t* values, but is equivalent to a regression procedure with effect codings of the categorical variable(s).

Positive and negative affect. While positive affect ($M = 5.41$, $SD = 1.55$) was not significantly affected by meaning threat, $F(1, 126) = 2.16$, $p = .145$, $\eta_p^2 = 0.02$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0703] ($M_{nothreat} = 5.61$, $SD_{nothreat} = 1.69$, $M_{threat} = 5.21$, $SD_{threat} = 1.37$), negative affect ($M = 2.14$, $SD = 1.32$) was, $F(1, 126) = 8.10$, $p = .005$, $\eta_p^2 = 0.06$, 90% $CI_{\eta_p^2}$ [0.0102, 0.1363]. Participants under meaning threat ($M = 2.47$, $SD = 1.26$) reported significantly more negative affect than participants under no meaning threat ($M = 1.82$, $SD = 1.31$). Yet, when submitting negative affect to a moderated regression with condition as categorical IV and attachment and glorification as continuous moderators, no interaction effect involving glorification emerged, Fs $(1, 120) < 3.00$, ps > 0.05, η_p^2s < 0.03. All significant interactions reported below remained significant even when controlling for positive affect, negative affect, both, and their interactions with meaning threat.

Pacifism. The moderated regression analysis with pacifism ($M = 6.19$, $SD = 1.68$) as DV yielded the expected interaction of meaning threat by glorification, $F(1, 120) = 6.49$, $p = .012$, $\eta_p^2 = 0.05$, 90% $CI_{\eta_p^2}$ [0.0059, 0.1216]. Confirming our hypothesis, low glorifiers reported significantly higher levels of pacifism under meaning threat ($M = 8.07$) as compared to no meaning threat ($M = 7.07$), $t(120) = -2.07$, $p = .041$, whereas high glorifiers reported significantly lower levels of pacifism under meaning threat ($M = 4.66$) as compared to no meaning threat ($M = 5.62$), $t(120) = 2.02$, $p = .046$ (see Figure 1). The main effect of glorification was also significant, $F(1, 120) = 39.89$, $p < .001$, $\eta_p^2 = 0.25$, 90% $CI_{\eta_p^2}$ [0.1380, 0.3378], $\beta = -.70$. No other effects reached significance, Fs $(1, 120) < 3.30$, ps > 0.05, η_p^2s < 0.03.

Support for military conflict resolution. A composite score of the three conflict scenarios ($M = 5.42$, $SD = 1.96$) was submitted to the same moderated regression analysis as pacifism. As predicted, the interaction of meaning threat by glorification was significant, $F(1, 120) = 4.18$, $p = .043$, $\eta_p^2 = 0.03$, 90% $CI_{\eta_p^2}$ [0.0005, 0.0966]. Whereas low glorifiers reported significantly less support for military conflict resolution attempts under meaning threat ($M = 3.23$) compared to no meaning threat ($M = 4.62$), $t(120) = 2.37$, $p = .019$, high glorifiers, if anything, increased their support for use of military force under meaning threat ($M = 6.78$) compared to no meaning threat ($M = 6.26$), $t(120) = -0.89$, $p = .373$ (see Figure 2). The main effect of glorification was also significant, $F(1, 120) = 30.49$, $p < .001$, $\eta_p^2 = 0.20$, 90% $CI_{\eta_p^2}$ [0.0997, 0.2915], $\beta = .65$. No other effects reached significance, Fs $(1, 120) < 1.50$, ps > 0.05, η_p^2s < 0.02.

Discussion

The results indicated that a basic meaning threat influences responses to intergroup conflict in ways that are consistent with individual differences in meaning frameworks. Consistent with prior research demonstrating antisocial consequences of threat, a basic meaning threat reduced support for pacifism among high glorifiers. However, demonstrating that threat can have prosocial consequences among individuals seeking to reaffirm prosocial values, the meaning threat increased support for pacifism and decreased support for military conflict resolution among low glorifiers.

One limitation of this study was that attachment and glorification were measured at the end of the study. Although neither measure was significantly affected by the manipulation (a requirement for treating the measures as moderators), there was a marginal effect on attachment. Consistent with recommendations by Yzerbyt, Muller, and Judd (2004), our analyses controlled for the condition by attachment interaction, statistically alleviating concerns that any condition effects on attachment could account for the condition by glorification interaction effect. Still, to rule out that possibility completely, as well as demonstrate the reliability of these findings, Study 2 aimed to replicate the effects while measuring attachment and glorification weeks before the manipulation.

[1]Throughout the paper we report 90% confidence intervals for η_p^2, as recommended by Steiger (2004), because it is equivalent to a significance level of $\alpha = .05$ when the effect size estimate cannot be negative, as well as to 95% confidence intervals for Cohen's *d*.

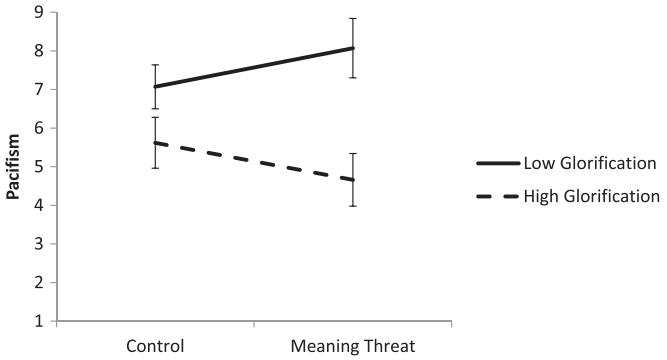

Fig. 1: Study 1: Pacifism as a function of meaning threat and glorification, while controlling for main and interaction effects of attachment (with 95% CI error bars)

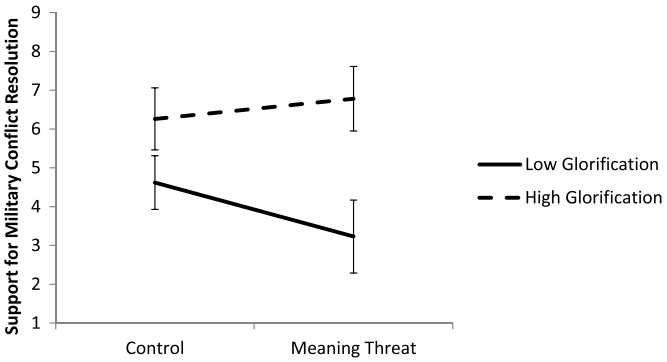

Fig. 2: Study 1: Support for military conflict resolution as a function of meaning threat and glorification, while controlling for main and interaction effects of attachment (with 95% CI error bars)

Study 2

Study 2 aimed to replicate the effects of Study 1 while addressing its limitations. Study 2 assessed the moderators several weeks before the manipulation of meaning threat and measurement of the DVs. This allowed us to eliminate concerns about priming and demand effects, ensuring that the moderators truly reflected individual differences, while also ruling out any possibility that the experimental conditions would influence the moderators.

Further, Study 2 provided a stricter test of our theoretical rationale. Although in some literatures a greater time interval between the measurement of the IV and DV might be thought to weaken an effect, research and theorizing about meaning threat proposes that a delay between IV and DV enhances the effects of meaning threat because individuals' immediate reaction is to try to inhibit the effects of threat, and it takes time for the long-term implications of meaning threat to set in (Wichman, Brunner, & Weary, 2008). Similarly, a meta-analysis of mortality salience effects demonstrated that experiments with longer delays (7–20 min) resulted in significantly larger effects than studies with shorter delays (2–6 min; Burke, Martens, & Faucher, 2010). We thus increased the time interval between the manipulation and outcome measures. If supported, this particularly stringent empirical test would strengthen our theoretical assertions by being consistent with prior theorizing about the time-course of reactions to meaning threat. At the same time, it allowed us to assess the longevity of our effects.

Method

Participants. At the beginning of the semester, students completed a departmental prescreening at a large public university in the northeastern United States, which included measures of national ingroup attachment and glorification. Over six weeks later, a random selection of those who had completed the prescreening were invited to participate in a computerized lab study. One hundred sixteen participants were recruited. After excluding seven participants because of issues with the psychology department's internet connection that caused the computer to freeze, 109 participants were retained for data analyses (83% women, 16% men; age $M = 19.50$, $SD = 1.23$).

Procedure. Approximately six weeks after completing measures of attachment ($\alpha = .90$) and glorification ($\alpha = .86$) on the prescreen, participants completed a lab study with largely identical procedure and measures as in Study 1. After giving consent, meaning threat was manipulated using the same manipulation as in Study 1, and participants completed the same manipulation checks ($\alpha = .91$). Next, positive affect (excited, inspired, interested, attentive; $\alpha = .79$) and negative affect (afraid, upset, attentive, angry, irritable; $\alpha = .80$) were measured with an abbreviated 8-item scale (from Not at all to Very much) assessing the affect participants felt while reading the short story. After completing the same distractor task as in Study 1, participants completed a

series of measures of emotional preferences[2] lasting an additional 15 min on average that were unrelated to the purpose of the present study. Thus, whereas the total time interval between manipulation and outcome measures was approximately 4 min on average in Study 1, it was approximately 19 min on average in Study 2. Participants then filled out the outcome measures: support for use of military conflict resolution ($\alpha = .61$) was measured by the same hypothetical "Country X" scenario as in Study 1, as well as a real scenario involving the Islamic State of Iraq and Syria (ISIS; "As of now, the United States has not employed ground troops to fight ISIS in Iraq and Syria. To what extent do you feel that the U.S. should send ground troops to aid in the struggle against terror?", from "Definitely SHOULD NOT send ground troops" to "Definitely SHOULD send ground troops"). The measure of pacifism was the same as in Study 1 ($\alpha = .88$). Unless indicated otherwise, all scales were 9-point visual analog scales with the endpoints labeled *No, absolutely not* and *Yes, absolutely*. Before being debriefed, participants answered demographic questions.

Results

Manipulation check. As in Study 1, the manipulation check questions were averaged into a composite score ($M = 6.75$, $SD = 2.11$) and an ANOVA tested the effect of condition on this score. As expected, participants who read Kafka's story ($M = 4.90$, $SD = 1.35$) reported significantly less meaning than participants who read Aesop's fable ($M = 8.56$, $SD = 0.63$), $F(1, 107) = 329.78$, $p < .001$, $\eta_p^2 = 0.755$, 90% $CI_{\eta_p^2}$ [0.6882, 0.7980].

National ingroup attachment and glorification. Although both attachment and glorification were measured 6+ weeks prior to the study, we tested for differences across conditions to rule out any possible failure of random assignment. As expected, neither attachment ($M = 4.95$, $SD = 0.96$), $F(1, 106) < 0.01$, $p = .965$, $\eta_p^2 < 0.001$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0000] ($M_{nothreat} = 4.95$, $SD_{nothreat} = 0.98$, $M_{threat} = 4.96$, $SD_{threat} = 0.94$), nor glorification ($M = 3.62$, $SD = 0.99$), $F(1, 106) = 0.04$, $p = .837$, $\eta_p^2 < 0.001$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0217] ($M_{nothreat} = 3.64$, $SD_{nothreat} = 1.11$, $M_{threat} = 3.60$, $SD_{threat} = 0.86$), differed across meaning threat conditions.

Positive and negative affect. Both positive affect ($M = 5.13$, $SD = 1.63$), $F(1, 100) = 8.32$, $p = .005$, $\eta_p^2 = 0.072$, 90% $CI_{\eta_p^2}$ [0.0131, 0.1599], and negative affect ($M = 2.38$, $SD = 1.33$), $F(1, 100) = 8.57$, $p = .004$, $\eta_p^2 = 0.074$, 90% $CI_{\eta_p^2}$ [0.0140, 0.1625], were significantly affected by meaning threat. That is, positive affect was lower under meaning threat ($M = 4.69$, $SD = 1.57$) compared to no meaning threat ($M = 5.56$, $SD = 1.58$), whereas negative affect was higher under meaning threat ($M = 2.74$, $SD = 1.32$) than no meaning threat ($M = 2.02$, $SD = 1.24$). When submitting negative affect to a moderated regression analysis with condition as categorical IV and attachment and glorification as continuous moderators, no interaction effect involving glorification emerged, Fs $(1, 100) < 0.45$, ps > 0.50, η_p^2 s < 0.005. However, submitting positive affect to this same analysis yielded a non-significant two-way interaction between glorification and condition, $F(1, 100) = 0.15$, $p = .700$, $\eta_p^2 = 0.002$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0337], but a significant three-way interaction, $F(1, 100) = 4.34$, $p = .040$, $\eta_p^2 = 0.042$, 90% $CI_{\eta_p^2}$ [0.0010, 0.1147]. Individuals low on both attachment and glorification reported more positive affect under no meaning threat ($M = 5.34$) than under meaning threat ($M = 4.25$), $t(100) = 2.33$, $p = .021$. Individuals high on both attachment and glorification showed the same pattern, also reporting more positive affect under no meaning threat ($M = 5.98$) than under meaning threat ($M = 4.74$), $t(100) = 2.49$, $p = .014$. There were no effects of condition on positive affect among individuals high on attachment and low on glorification, $t(100) = -0.34$, $p = .736$, or low on attachment and high on glorification, $t(100) = 0.17$, $p = .868$. No other interactions on positive affect involving glorification were found, Fs $(1, 100) < 0.15$, ps > 0.70, η_p^2s < 0.002.

Support for military conflict resolution. A composite score of the two conflict scenarios ($M = 5.34$, $SD = 1.72$) was submitted to the same moderated regression analysis as in Study 1. Replicating Study 1, the interaction of meaning threat by glorification was significant, $F(1, 100) = 12.60$, $p < .001$, $\eta_p^2 = 0.112$, 90% $CI_{\eta_p^2}$ [0.0305, 0.2025].[3] Consistent with our hypothesis, low glorifiers reported significantly lower levels of support for military conflict resolution under meaning threat ($M = 4.18$) as compared to no meaning

[2]Specifically, we told participants they would write about an emotional life experience of their choosing, and asked participants how interested they were to write about a life experience in which they felt anger, fear, sadness, or happiness. We then asked participants to write a sentence describing an experience in which they felt each of these emotions, and participants again rated the extent to which they wanted to write about each type of experience for a longer amount of time, as well as the intensity of each experience they listed. Next, *all* participants wrote about a life experience in which they felt angry. Participants then rated their emotions and answered other questions about their emotions related to the writing task (e.g., "Now that you have written about the experience that made you angry, do you feel *more* or *less* angry about the experience?", "To what extent did you enjoy the writing task?"). Finally, participants rated how much they liked three different polygons. Importantly, these measures were unrelated to the purpose and content of the present study, and could not have served to prime egalitarian or pacifist values. In addition, controlling for these measures did not influence the condition by glorification interactions on militarism or pacifism that we report.

[3]Given the relatively low alpha for the composite measure of support for military conflict resolution, we subjected each conflict resolution item by itself to the same analysis. The glorification by meaning threat interaction was significant for both the hypothetical scenario, $F(1, 107) = 12.03$, $p < .001$, $\eta_p^2 = 0.107$, and the ISIS scenario, $F(1, 107) = 5.90$, $p = .017$, $\eta_p^2 = 0.056$.

threat ($M = 5.50$), $t(100) = 2.46$, $p = .016$, whereas high glorifiers reported significantly higher levels of support for military conflict resolution under meaning threat ($M = 6.51$) as compared to no meaning threat ($M = 5.01$), $t(100) = -2.86$, $p = .005$ (see Figure 3). While the means in the no threat condition might seem to suggest that under no threat low glorifiers ($M = 5.50$) supported military conflict resolution more than high glorifiers ($M = 5.01$), a simple slope analysis revealed that this difference was not significant ($\beta = -.25$, $SE = 0.25$, $t(100) = -0.98$, $p = .328$). The main effect of glorification was significant, $F(1, 100) = 5.34$, $p = .023$, $\eta_p^2 = 0.051$, 90% $CI_{\eta_p^2}$ [0.0035, 0.1274], $\beta = 0.46$. The attachment by condition interaction was also significant, $F(1, 100) = 6.77$, $p = .012$, $\eta_p^2 = 0.063$, 90% $CI_{\eta_p^2}$ [0.0078, 0.1443]. Individuals low in attachment expressed more support for military conflict resolution under meaning threat ($M = 5.64$) compared to no meaning threat ($M = 4.56$), $t(100) = -2.09$, $p = .039$. Individuals high in attachment expressed marginally less support for military conflict resolution under meaning threat ($M = 5.04$) compared to no meaning threat ($M = 5.94$), $t(100) = 1.74$, $p = .084$. No other effects reached significance, Fs(1, 100) < 1.06, ps > 0.300, η_p^2s < 0.011.

The significant interaction between meaning threat and glorification remained significant when controlling for negative affect, $F(1, 99) = 12.17$, $p = .001$, $\eta_p^2 = 0.110$, 90% $CI_{\eta_p^2}$ [0.0287, 0.1987], positive affect, $F(1, 99) = 12.35$, $p = .001$, $\eta_p^2 = 0.111$, 90% $CI_{\eta_p^2}$ [0.0294, 0.2003], and both negative and positive affect, $F(1, 98) = 12.01$, $p = .001$, $\eta_p^2 = 0.109$, 90% $CI_{\eta_p^2}$ [0.0279, 0.1972]. It also remained significant when controlling for negative affect and its interaction with meaning threat, $F(1, 98) = 12.03$, $p = .001$, $\eta_p^2 = 0.109$, 90% $CI_{\eta_p^2}$ [0.0281, 0.1975], as well as when controlling for positive affect and its interaction with meaning threat, $F(1, 98) = 11.99$, $p = .001$, $\eta_p^2 = 0.109$, 90% $CI_{\eta_p^2}$ [0.0279, 0.1971]. Given the three-way interaction on positive affect discussed above, we also controlled for the interaction of positive affect, meaning threat, glorification, and attachment, and the interaction between glorification and meaning threat remained marginally significant, $F(1,92) = 2.81$, $p = .097$, $\eta_p^2 = 0.030$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0930].

Pacifism. The meaning threat by glorification interaction on pacifism ($M = 6.42$, $SD = 1.15$) was not significant, though it went in the expected direction, $F(1, 100) = 0.76$, $p = .385$, $\eta_p^2 = 0.008$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0554]. The simple slopes were consistent with our predictions, with higher glorification being marginally significantly related to less pacifism under meaning threat, $\beta = -.41$, $SE = 0.21$, $t(100) = -1.93$, $p = .056$, but not under no threat, $\beta = -.17$, $SE = 0.17$, $t(100) = -1.00$, $p = .321$. The simple effects were not significant: Low glorifiers did not significantly differ in pacifism under meaning threat ($M = 6.78$) compared to no meaning threat ($M = 6.71$), $t(100) = -0.20$, $p = .845$, whereas high glorifiers tended to report, if anything, lower levels of pacifism under meaning threat ($M = 5.95$) as compared to no meaning threat ($M = 6.36$), $t(100) = 1.13$, $p = .263$ (see Figure 4). The main effect of glorification was significant, $F(1, 100) = 4.54$, $p < .036$, $\eta_p^2 = 0.005$, 90% $CI_{\eta_p^2}$ [0.0014, 0.1173], $\beta = -.29$. No other effects reached significance, Fs(1, 100) < 1.21, ps > 0.250, η_p^2s < 0.012.

Meta-analytical results. Although the patterns of results were consistent with our predictions across two studies and different dependent variables, some results fell short of significance. We thus pooled the individual-level data from Studies 1 and 2, combining the datasets and treating study as a full random factor in the analysis. Across both studies, the predicted effects were highly robust, as only one out of six effects was marginal. Study did not influence the predicted effects, indicating that the results did not significantly differ between studies. The meta-analytical results are reported in Table 1.

Discussion

Study 2 replicated the effects of Study 1 with respect to one DV (support for military conflict resolution), and less so with respect to the other (pacifism). Meaning threat influenced support for military conflict resolution in accordance with individuals' preexisting values. When their meaning was subtly threatened, low glorifiers demonstrated less support for military conflict resolution, whereas high glorifiers demonstrated more

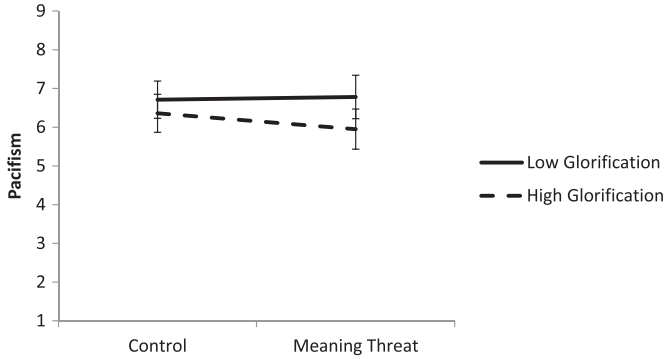

Fig. 3: Study 2: Pacifism as a function of meaning threat and glorification, while controlling for main and interaction effects of attachment (with 95% CI error bars)

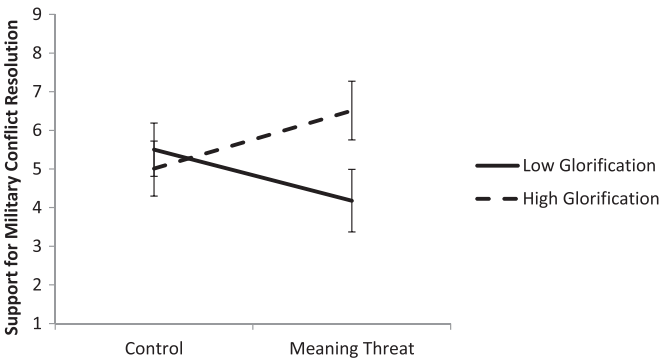

Fig. 4: Study 2: Support for military conflict resolution as a function of meaning threat and glorification, while controlling for main and interaction effects of attachment (with 95% CI error bars)

Table 1. Meta-Analysis of Studies 1 and 2. Test Statistics are *F* tests for interactions and for *t* tests for simple effects. Effect sizes for interactions are partial eta squared and for simple effects are Cohen's d's.

Test	Test statistic	*df*	*p* Value	Effect size	Effect size 90% CI
Condition × glorification interactions					
Military conflict resolution	14.89	1, 220	.0001	0.063	[0.0198, 0.1146]
Pacifism	6.72	1, 220	.0102	0.030	[0.0037, 0.0710]
Simple effects					
Military conflict resolution					
Low glorifiers	3.43	220	.0007	0.45	
High glorifiers	−2.56	220	.0113	0.33	
Pacifism					
Low glorifiers	−1.73	220	.0845	0.23	
High glorifiers	2.28	220	.0234	0.30	

support for it. Results with pacifism, while not significant, showed patterns consistent with this effect. Study 2 also extended Study 1 in important ways. First, it demonstrated similar effects even in a more tightly controlled laboratory setting with a sample of American college students. Second, it demonstrated the effects even with measuring glorification and attachment several weeks before the study. Third, by extending the time interval between the threat manipulation and the conflict resolution measures, it demonstrated the long-lasting nature of the effect. Overall, the study provided additional evidence for our hypotheses, as is further supported by the meta-analytical results across Study 1 and 2.

Although the three-way interaction of condition, attachment, and glorification on positive affect in Study 2 was significant, this interaction cannot explain our findings, for several reasons. First, as discussed above, the effects remain largely unchanged when controlling for affect. Second, the effects of threat on positive affect was the same for high and low glorifiers, but the effects of threat on our primary DVs differed for high and low glorifiers, precluding the possibility that affect can explain our main results. Third, the effects on conflict resolution were independent of attachment, whereas the effects on positive affect critically depended on attachment. Finally, the affect literature would make the exact opposite prediction about the role of affect in promoting or inhibiting predispositions; a large body of research suggests that positive affect promotes dominant inclinations (e.g., Huntsinger, Sinclair, Dunn, & Clore, 2010; for reviews see Huntsinger, Isbell, & Clore, 2014 and Isbell, Lair, & Rovenpor, 2013), whereas in the present study it was the *absence* of positive affect—under meaning threat—that accentuated high and low glorifiers' preexisting tendencies. If anything, differences in affect likely *weaken* our effects, rather than account for them.

Study 3

Studies 1 and 2 demonstrated that experimentally manipulating basic meaning threat leads to shifts in high and low glorifiers' support for conflict resolution in ways that align with their preexisting values. Study 3 sought to extend these effects and explain the underlying mechanism by measuring meaning as a mediator and demonstrating its implications in the context of an ecologically valid real-world conflict, where threats to meaning can be much stronger and more relevant to the conflict than the experimental manipulations used in Studies 1 and 2. In fact, violent intergroup conflict should pose a meaning threat in and of itself, at least for those who disagree with violent approaches to conflict (i.e., low glorifiers). We thus tested whether during violent (but not relatively less violent) conflict, low glorification would be associated with reduced meaning and in turn greater support for peaceful conflict resolution.

We investigated these dynamics among Jewish Israelis in the context of the Israeli–Palestinian conflict. In July and August 2014, the Israeli military and Hamas

engaged in a major violent confrontation. Hamas members launched rockets and carried out ground attacks on Israeli soil, and Israel's military conducted aerial bombardments as well as a ground invasion of Gaza, which led to thousands of Palestinian casualties. Rather than experimentally manipulating meaning threat, we quasi-experimentally compared this time of high conflict-related meaning threat to a time of low(er) meaning threat (i.e., over 3 months after the "hot" conflict ended), and measured perceived meaning, glorification and attachment, and support for peaceful conflict resolution at both times. Doing so enabled us to investigate the natural unfolding of these processes in the context of meaning threat related to a real-world intergroup conflict.

The Israel–Gaza conflict in Summer 2014, like many conflicts, should serve as a meaning threat for low glorifiers because they tend to see violence committed by the ingroup as immoral and a threat to their identity (Leidner & Castano, 2012). High glorifiers, on the other hand, often justify violence perpetrated by the ingroup (Leidner et al., 2010; Roccas et al., 2006). Thus, we predicted that (i) meaning would be more threatened for low glorifiers during hot conflict compared to cold conflict, that (ii) low glorifiers would be more likely to support peaceful approaches to ending the broader conflict at times of hot compared to cold conflict, and that (iii) this increased support of peaceful approaches would be explained by glorifiers' threatened meaning during hot as compared to cold conflict. In other words, given that low glorifiers were predicted to experience less meaning during this particular time of hot conflict than high glorifiers, the primary research question was whether low glorifiers would endorse peaceful conflict resolution strategies *because* their meaning was more threatened by "hot" rather than "cold" conflict.

Method

Participants. We collected data from three samples of participants: One during "hot" conflict (Time 1) and two during "cold" conflict (Time 2). Of the latter two samples, one consisted of a follow-up of the same participants as Time 1 (Time 2 longitudinal), and the other consisted of new participants who had not previously participated at Time 1 (Time 2 cross sectional). Testing our predictions not only between Time 1 and Time 2 longitudinally but also between Time 1 and Time 2 cross sectionally allowed us to address possible problems arising out of attrition and the resulting small longitudinal sample.

Time 1 sample. One hundred sixty-six Jewish Israeli participants were recruited and participated online via the Midgam panel service (www.midgam.com) on 23 July 2014, approximately 2 weeks into the IDF's "Operation Protective Edge," at the height of the tension and military operations. One participant was excluded for reporting that they had not taken the study seriously, five were excluded for reporting having language difficulties, one was excluded for completing the study on a mobile phone, and eight were excluded for taking a significantly longer time to complete the survey (univariate outliers; Tabachnick & Fidell, 2007), leaving 151 participants.

Time 2 longitudinal sample. We invited all 151 participants retained for analyses in the first wave of data collection to participate in the online study a second time between 11 and 15 December 2014. At this time there was no war in Israel and tensions with Palestinians were significantly reduced relative to Time 1. Comparing the same participants during and after a conflict allowed for a powerful test of within-subject changes because of the conflict. Eighty-five participants completed the study the second time. Three participants were excluded because they reported language difficulties, two were excluded for taking a significantly longer time to complete the survey, two for technical issues (i.e., difficulty advancing through the survey because of poor internet connection), and one for completing the study while in another country (Uruguay), leaving 77 participants, constituting 51% of the original Time 1 sample.

Time 2 cross-sectional sample. In addition to following up with the same participants at Time 2, we recruited an entirely separate sample of 152 Jewish Israelis who had not participated at Time 1. These participants also completed the study between 11 and 15 December 2014. This allowed us to compare samples across time points cross sectionally. One participant was excluded for reporting not taking the study seriously, four for reporting language difficulties, one for technical issues (i.e., difficulty advancing through the survey because of poor internet connection), two for taking the study on their mobile phone, and seven for taking a significantly longer time to complete the survey, leaving 137 participants.

For all three samples, discrepancies between the sample sizes reported in this section and the degrees of freedom reported in the analyses below are because of participants who provided partial data (i.e., missing values). See Table 2 for demographic information for each sample.

Procedure. The study procedures were identical at all time points. Participants did not undergo any experimental manipulation and instead, after providing consent, completed a series of questionnaires in the order presented below on 9-point analog visual scales. All questionnaires were translated into Hebrew. Unless indicated otherwise, the scale endpoints were labeled *Completely disagree* and *Completely agree*. Participants then answered demographic questions and were debriefed. See Table 3 for reliabilities of the measures for each sample.

Meaning. Meaning was measured using Steger et al.'s (2006) meaning presence subscale of the

Table 2. Demographic information for Study 3. Where there are no subscripts, the samples do not significantly differ in their percentages. Differing subscripts indicate significant differences across samples.

	Time 1	Time 2 longitudinal	Time 2 cross-sectional
n	151	77	137
Male	48%	50%	52%
Relationship status			
Single	27% $_a$	25% $_a$	38% $_b$
Married	54%	58%	53%
Divorced	18% $_a$	16% $_a$	9% $_b$
Widowed	1%	1%	0%
Geographic location			
Northern Israel	28%	28%	21%
Southern Israel	13%	12%	18%
Central Israel	54%	53%	56%
West Bank	5%	7%	5%
Religiosity			
Secular	54%	59%	63%
Traditional	28%	27%	18%
Orthodox	11%	9%	15%
Ultra-Orthodox	7%	5%	5%
Occupation			
Student	17%	8%	16%
Soldier	0%	0%	1%
Employed	59%	60%	66%
Unemployed	18%	15%	15%
Retired	6%	7%	2%
Subjective SES			
Below average	42%	45%	45%
Average	33%	36%	28%
Above average	15%	14%	21%
No response	10%	5%	6%
Age	*M* = 39.00	*M* = 40.71	*M* = 37.71
	SD = 13.30	*SD* = 13.30	*SD* = 13.29
	Range = 18–63	Range = 18–64	Range = 18–64

meaning in life questionnaire (e.g., "I understand my life's meaning," "My life has a clear sense of purpose"). Although often used as a trait measure, this scale has been shown to have significant and meaningful within-person variability over time (e.g., Steger & Kashdan, 2013). Scale endpoints were Completely untrue – Completely true.

Perceiving positive aspects of conflict. Three items assessed the extent to which individuals perceived that conflict had positive aspects to it, to be used as a validity check of our use of the meaning presence subscale of the meaning in life questionnaire as a proxy for how much meaning people derived from hot or cold conflict (e.g., "It lifts one's spirits to see how the Israeli army fights to protect its nation during times of conflict," "There is a heightened sense of excitement when our nation manages to unite in solidarity in order to deal with its enemies").

Security threat. One item assessed the extent to which Israelis were troubled by or worried about the security situation in Israel (with the scale endpoints Not at all – Completely), to be used as a validity check of our use of two specific time points as hot and cold conflict.

Support for peaceful conflict resolution. Two items assessed participants' support for a peaceful resolution to the Israeli–Palestinian conflict ("The sooner Israelis and Palestinians can reach a peace agreement, the better," "I think Israel needs to advance a two-state solution with the Palestinians").

Attachment and glorification. National ingroup attachment and glorification were measured using the items from Studies 1 and 2, which were adapted to refer to Israel as the national ingroup.

Results

Main effects of time and validity of the two time points as reflecting hot versus cold conflict. Table 3 displays the Cronbach's alphas, means, and standard deviations for all variables and samples, as well as tests of mean differences between time points. Table 4 displays the correlations among the variables. As expected, perceived security threat was higher during hot rather than cold conflict. This difference was only trending toward significance for the comparison between Time 1 and the cross-sectional sample at Time 2, but it was significant for the longitudinal (i.e., within-person) comparison (see Table 3). Both types of comparisons yielded significant effects of time on perceived positive aspects of conflict, which was higher during hot conflict. Support for peace did not differ across time points, nor did meaning. Yet, this was expected, because rather than differing for everyone (i.e., low *and* high glorifiers), we expected that meaning in life would only differ between time points for low but not for high glorifiers. Finally, attachment and glorification were also higher during the conflict according to both types of analyses, which is consistent with research on the rally around the flag effect (Mueller, 1970, 1973).

Validity of meaning in life scale as a measure of conflict-specific meaning. We predicted that when administered during hot conflict (when violence is ongoing) rather than cold conflict (when violence has ceased) the meaning in life scale would reflect the extent to which people derive meaning from hot conflict. To provide at least a modicum of validity for this claim, we assessed the correlation between meaning in life and perceiving positive aspects of conflict during hot and cold conflict. If meaning in life was indeed a proxy for meaning derived from conflict, the correlation should be significantly positive during hot, but not cold, conflict. As expected, meaning in life was positively correlated with perceiving positive aspects of conflict during hot conflict (i.e., at Time 1), but unrelated during cold conflict (i.e., at Time 2), in both the cross-sectional and longitudinal sample (see Table 4). This pattern of results corroborated our assumption that when measuring meaning in life during hot conflict, it was shaped by perceptions of the hot conflict and reflected the extent to which people found meaning during this time of hot conflict.

Table 3. Descriptive statistics and main effects of time point on primary Study 3 measures

	T1			T2 longitudinal			T2 cross sectional			T1–T2 longitudinal			T1–T2 cross sectional				
	α	M	SD	α	M	SD	α	M	SD	t	df	p	d	F	df	p	d
Meaning in life	.92	6.32	2.02	.94	6.63	1.82	.89	6.27	2.02	−1.30	76	.198	0.11	0.05	284	.832	0.02
Positive aspects of conflict	.89	7.82	1.47	.94	7.48	1.62	.87	7.43	1.56	2.97	67	.004	0.36	4.47	269	.035	0.26
Security threat	N/A	6.56	2.30	N/A	6.21	2.28	N/A	6.07	2.34	2.28	62	.026	0.25	2.96	261	.086	0.21
Support for peace	.70	5.49	2.61	.76	5.84	2.44	.84	5.59	2.61	−0.17	63	.864	0.02	0.10	264	.756	0.04
Attachment	.93	7.54	1.59	.95	7.22	1.61	.91	7.09	1.60	2.65	66	.010	0.22	5.40	267	.021	0.23
Glorification	.85	6.17	1.78	.86	5.74	1.83	.83	5.73	1.72	3.39	66	.001	0.29	4.24	266	.041	0.25

Did hot conflict pose a meaning threat to low glorifiers? We predicted that low but not high glorifiers would experience a meaning threat in the context of hot conflict. Consistent with this prediction, a positive partial correlation emerged at Time 1 between glorification (controlling for attachment) and meaning in life, $r = .261$, $p = .002$, indicating that the lower people were on glorification, the less meaning they reported. Importantly, this relationship was not significant during cold conflict, $r_{\text{cross-sectional}} = .003$, $p = .971$; $r_{\text{longitudinal}} = -.011$, $p = .928$. To further assess whether hot conflict *itself* threatened meaning for low glorifiers *only*, we conducted a moderated regression analysis in the cross-sectional sample testing the interaction between glorification and hot (Time 1) vs. cold (Time 2 cross sectional) conflict on meaning. The glorification by conflict interaction revealed a trend in the predicted direction, $F(1, 259) = 2.32$, $p = .129$, $\eta_p^2 = 0.009$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0363]. As expected, low glorifiers reported marginally significantly lower meaning during hot ($M = 5.44$) compared to cold ($M = 6.10$) conflict, $t(259) = -1.72$, $p = .086$, whereas high glorifiers' meaning did not differ as a function of hot ($M = 6.48$) versus cold ($M = 6.26$) conflict, $t(259) = 0.55$, $p = .584$. Thus, as is evident in Figure 5, the differential patterns of relationships during hot vs. cold conflict were driven by low glorifiers, not high glorifiers. We conducted a comparable mixed model analysis in the longitudinal sample using maximum likelihood estimation. This analysis again revealed that time point did not influence meaning for high glorifiers, $t(59) = 0.22$, $p = .824$, but that low glorifiers reported lower meaning during hot ($M = 5.69$, $SE = 0.24$) compared to cold conflict, ($M = 6.29$, $SE = 0.27$), $t(59) = -2.15$, $p = .036$. However, given the less than ideal statistical power, the omnibus test of the glorification by conflict interaction did not reach significance, $F(1, 59) = 2.34$, $p = .131$ (see Figure 6). Taken together, these results support the validity of our quasi-experimental paradigm for assessing the relationship between meaning threat and support for peaceful conflict resolution among low glorifiers.

Given the limited power afforded by using the cross-sectional or longitudinal samples alone, we conducted a single analysis taking advantage of all available data in both the longitudinal *and* the cross-sectional Time 2 samples. That is, we conducted a path analysis testing the effects of glorification on meaning at each time point in separate equations, using full information maximum likelihood (FIML), which estimates parameters based on all participants at each time point, regardless of whether they participated at both time points. Time 1 glorification and attachment were exogenous variables (allowed to covary) predicting Time 1 meaning as endogenous variable. Likewise, Time 2 glorification and attachment were exogenous variables (allowed to covary) predicting Time 2 meaning as another endogenous variable. This analysis revealed that glorification had the expected positive effect on meaning at Time 1, $\beta = .304$, $t = 3.25$, $p = .001$, but not at Time 2, $\beta = .003$, $t = 0.05$, $p = .963$. A test of the difference between the path coefficients of the path from Time 1 glorification to Time 1 meaning compared to the path from Time 2 glorification to Time 2 meaning (equivalent to the glorification by time point interaction) was significant, $t = 2.51$, $p = .012$. This provides strong cumulative evidence for our assertion that meaning was threatened during hot conflict for low glorifiers only.

Glorification and support for peaceful conflict resolution. As expected, glorification (controlling for attachment) was negatively correlated with support for a peaceful resolution to the broader Israeli–Palestinian conflict during hot conflict, $r = -.274$, $p = .001$. Further, this relationship was not significant during cold conflict, $r_{\text{cross-sectional}} = -.038$, $p = .670$; $r_{\text{longitudinal}} = -.064$, $p = .608$. To investigate this further, we tested whether hot vs. cold conflict moderated the relationship between glorification and support for peace in the cross-sectional data. The interaction effect revealed a trend consistent with our hypotheses, $F(1, 254) = 2.45$, $p = .119$, $\eta_p^2 = 0.010$, 90% $CI_{\eta_p^2}$ [0.0000, 0.0379] (see Figure 7). Low glorifiers tended to support peace more during hot ($M = 6.50$) than cold conflict ($M = 5.75$), $t(254) = 1.50$, $p = .134$, whereas high glorifiers, if anything, tended to support peace less during hot ($M = 5.01$) rather than cold ($M = 5.45$) conflict, $t(254) = -0.80$, $p = .423$. Again, the correlational patterns

Table 4. Zero-order correlations among primary Study 3 measures within each time point

	T1					T2 longitudinal					T2 cross sectional				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
1. Meaning in life						0.135					0.031				
2. Positive aspects of conflict	0.222*					−0.033	0.135				0.177*	0.028			
3. Security threat	−0.136	−0.037				−0.215^{+}	−0.302*	0.313*			−0.122	−0.143	−0.047		
4. Support for peace	−0.319*	−0.238*	0.211*			0.455*	0.370*	0.133	−0.099		0.239*	0.317*	0.166^{+}	−0.164^{+}	
5. Attachment	0.243*	0.424*	0.108	−0.233*		0.242*	0.542*	0.240^{+}	−0.120	0.518*	0.105	0.433*	0.101	−0.104	0.427*
6. Glorification	0.346*	0.427*	0.103	−0.346*	0.576*										

*$p < .05$.
$^{+}p < .10$.

thus appear to be driven by low glorifiers during hot conflict, who, at least descriptively, were the most likely of the four groups to support peace. A mixed model analysis on the longitudinal data using maximum likelihood estimation revealed that low glorifiers tended to report higher support for peace during hot ($M = 6.32$, $SE = 0.33$) compared to cold conflict, ($M = 5.78$, $SE = 0.39$), $t(56) = 1.29$, $p = .203$, whereas high glorifiers did not differ in their support for peace during hot ($M = 4.91$, $SE = 0.35$) and cold conflict ($M = 5.21$, $SE = 0.47$), $t(59) = -0.59$, $p = .560$. Given the small size of the Time 2 longitudinal sample, omnibus test of the glorification by conflict interaction was not significant, $F(1, 56) = 1.36$, $p = .249$ (see Figure 8).

We again conducted a path analysis using FIML in order to use all cross-sectional and longitudinal data in a single analysis. Time 1 glorification and attachment were exogenous variables (allowed to covary) predicting Time 1 support for peace, while Time 2 glorification and attachment were exogenous variables predicting Time 2 support for peace. This analysis revealed that glorification had the expected negative effect on support for peace at Time 1, $\beta = -.311$, $t = -3.29$, $p = .001$, but not at Time 2, $\beta = -.054$, $t = -0.69$, $p = .492$. A test of difference between the path from Time 1 glorification to Time 1 support for peace compared to the path from Time 2 glorification to Time 2 support for peace (i.e., the glorification by time point interaction) was significant, $t = -2.07$, $p = .038$. This finding was fully consistent with Studies 1 and 2, such that low glorifiers showed greater support for peace when meaning threat was present rather than absent.

All in all, the very clear patterns of correlations (significant during hot conflict but not significant during cold conflict), the trending moderated regression analyses on the cross-sectional data and mixed model analyses on the longitudinal data, and the significant path analyses using all available information at once, all converged on the notion that meaning was most threatened—and that pacifism also tended to be higher—among low glorifiers during hot conflict. Given that these converging effects were consistent with our hypotheses and suggested a link between low glorifiers' reduced meaning during hot conflict and their greater support for peace, we next used conditional process modeling to explicitly test whether low glorifiers tended to be more supportive of peaceful conflict resolution during hot conflict *because* of their lower levels of meaning during hot conflict.

Glorification, meaning in life, and support for peaceful conflict resolution. To test whether glorification was related to support for peaceful conflict resolution in part *because* of the relative presence or absence of meaning, we tested a mediational model using bias-corrected bootstrapping with 5000 resamples (Hayes, 2013, model 8). As predicted the indirect effect of glorification

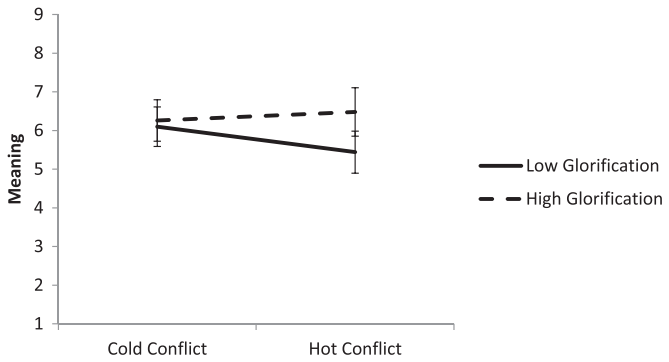

Fig. 5: Study 3 Cross-Sectional: Meaning as a function of hot vs. cold conflict and glorification, while controlling for main and interaction effects of attachment, in the cross-sectional sample (with 95% CI error bars)

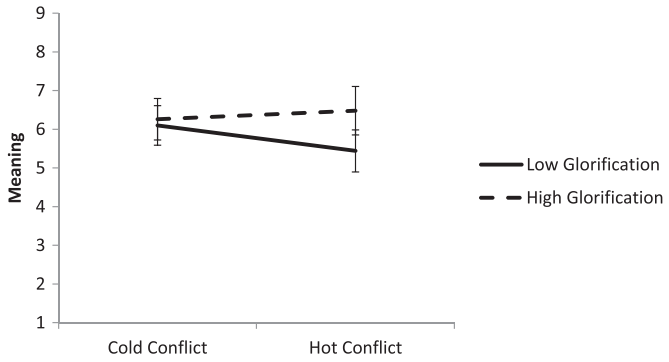

Fig. 6: Study 3 Longitudinal: Meaning as a function of hot vs. cold conflict and glorification, while controlling for main and interaction effects of attachment, in the longitudinal sample (with 95% CI error bars)

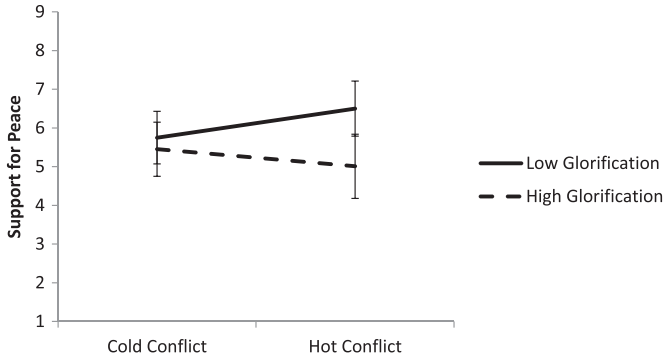

Fig. 7: Study 3 Cross-Sectional: Support for peace as a function of hot vs. cold conflict and glorification, while controlling for main and interaction effects of attachment, in the cross-sectional sample (with 95% CI error bars)

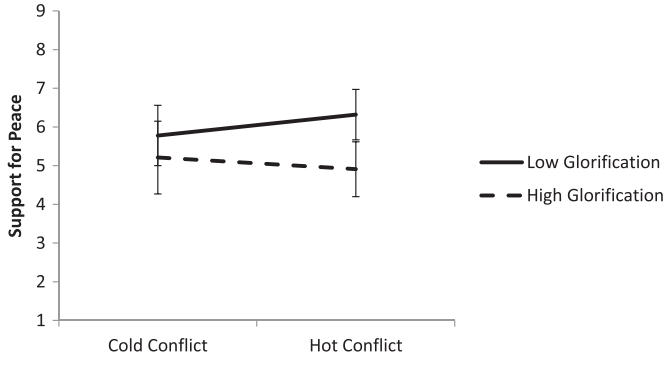

Fig. 8: Study 3 Longitudinal: Support for peace as a function of hot vs. cold conflict and glorification, while controlling for main and interaction effects of attachment, in the longitudinal sample (with 95% CI error bars)

(controlling for attachment) on support for peaceful conflict resolution through meaning during hot conflict (i.e., Time 1) was significant, boot coefficient = −0.0636, boot *SE* = 0.0351, 95% CI [−0.1600, −0.0139]. Consistent with our prediction that hot vs. cold conflict would moderate this effect, this indirect effect was not significant in the cross-sectional cold conflict sample (i.e., Time 2), boot coefficient = −0.0105, boot *SE* = 0.0257, 95% CI [−0.0723, 0.0334], and the difference between the indirect effects during hot vs. cold conflict (i.e., the index of moderated mediation) was significant, boot coefficient = 0.0531, boot *SE* = 0.0408, 95% CI[0.0014, 0.1817]. Also, the direct effect (c′) was weaker than the total effect (c) reported above, boot coefficient = −0.6471, boot *SE* = 0.2852, 95% CI[−1.2089, −0.0854], $p = .024$. Further, as expected, the indirect effect in the longitudinal cold conflict sample (i.e., Time 2) was not significant, boot coefficient = −0.0114, boot *SE* = 0.0488, 95% CI [−0.1653, 0.0538]. This difference in indirect effects between Time 1 and Time 2 longitudinal could not be attributed to a reduced sample size at Time 2 because of drop outs, because running the same analysis at Time 1 while including only the reduced sample of those - participants who returned at Time 2 (i.e., the same sample size as Time 2) still yielded a marginally significant mediation effect, boot coefficient = −0.0901, boot *SE* = 0.0857, 95% CI[−0.3612, 0.0031]; this effect was significant at a confidence interval of 93%, boot coefficient = −0.0901, boot *SE* = 0.0862, 93% CI[−0.3486, −0.0005]. The same moderated mediation via path analysis using all information from Time 1 and Time 2 longitudinal/cross sectional at once (through FIML) also revealed a significant indirect effect at Time 1, $\chi^2(1) = 6.02$, $p = .014$, but not at Time 2, $\chi^2(1) = 0.32$, $p = .576$; most importantly, a test of the difference between indirect effects was significant, $\chi^2(2) = 6.33$, $p = .042$. Taken together, these analyses demonstrate that reduced meaning stemming from hot conflict explains why low glorifiers endorse peaceful conflict resolution.

Although the above mediation analyses support our theoretical claims, they represent a different data-analytic approach compared to the approach taken in Studies 1 and 2. Specifically, glorification was treated as a moderator in Studies 1 and 2 but was treated as an IV in the above analyses. While the above analyses demonstrate that meaning threat partially explains why low glorifiers support peace during a conflict, treating glorification as the moderator could test for differential effects for high and low glorifiers. Given that this study followed a quasi-experimental paradigm not inducing but measuring meaning threat, and that meaning was not threatened for high glorifiers during hot conflict, we expected to find the effect for low glorifiers only. Treating glorification as the moderator and conflict time point as the IV (Hayes, 2013, model 8) revealed a marginal (significant at a confidence interval of 90%) indirect effect of time point on support for peace through meaning for low glorifiers, boot coefficient = −0.1036, boot *SE* = 0.0923, 90% CI[−0.3260, −0.0021], but not for high glorifiers, boot coefficient = 0.0640, boot *SE* = 0.0745, 90% CI [−0.0137, 0.2483]. The difference between these indirect effects was also marginally significant, boot coefficient = 0.0480, boot *SE* = 0.0397, 93% CI[0.0010, 0.1553]. This suggests that for low glorifiers, hot conflict threatens meaning, which in turn increases support for peace, whereas this was not true for high glorifiers. We did not have sufficient statistical power to replicate these analyses using the longitudinal data.

Discussion

Study 3 extended Studies 1 and 2, showing that during a real intergroup conflict, low glorification predicted less perceived meaning and as a result greater support for peace. More specifically, we demonstrated that our measure of meaning was related to finding meaning in conflict, and that meaning was threatened primarily for low glorifiers during violent conflict. Low glorifiers supported peace more than high glorifiers did, and tended to do so to a greater extent during hot compared to cold conflict. Finally, meaning mediated the effect of glorification on support for peace during hot conflict, but not cold conflict. Comparisons of within- (longitudinal) and between- (cross-sectional) subject samples revealed comparable effects. Although it would be preferable for glorification not to differ across time points, glorification was higher during hot conflict. This should not have influenced the mediation analyses, however, given that they assessed patterns of relationships separately within each time point; glorification being higher at Time 1 should have only influenced the mean level of glorification and could not explain the difference in correlations across time points. Bolstering this argument, glorification at Time 1 and Time 2 (longitudinal) were strongly correlated, $r = .76$, $p < .001$, indicating that the same people who reported relatively high (or low) glorification at Time 1 also did so at Time 2 (see Table 5).

Testing our hypotheses in the context of a real conflict provided a strong test of our theoretical claim that meaning threat can have prosocial consequences even when intergroup conflict is salient, and without directly priming prosocial values such as compassion. In fact, we did not experimentally prime anything in this study, but rather found that even naturally occurring events happening outside the lab can predictably affect the relationships between glorification, perceived meaning, and support for peace. These results not only provided converging evidence from an additional methodology for the effects demonstrated in Studies 1 and 2, but enhanced the ecological validity of this line of research by illustrating its implications for promoting conflict resolution in a real-world conflict.

General Discussion

Drawing on the MMM, we hypothesized that people can react both prosocially and antisocially to threat even

Table 5. Correlations between longitudinal Time 1 and Time 2 responses (Study 3)

	Meaning in life (T1)	Pos. aspects of conflict (T1)	Security threat (T1)	Support for peace (T1)	Attachment (T1)	Glorification (T1)
1. Meaning in life (T2)	0.304*	0.245*	−0.111	−0.334*	0.328*	0.294*
2. Pos. aspects of conflict (T2)	0.170	0.515*	0.003	−0.163	0.399*	0.481*
3. Security threat (T2)	−0.004	0.123	0.634*	0.395*	0.224^{+}	0.224^{+}
4. Support for peace (T2)	0.002	−0.162	0.313^{+}	0.617*	−0.221^{+}	−0.204^{+}
5. Attachment (T2)	0.369*	0.210^{+}	0.048	−0.124	0.776*	0.472*
6. Glorification (T2)	0.214^{+}	0.230^{+}	0.160	−0.204	0.560*	0.763*

*$p < .05$.
$^{+}p < .10$.

in the context of intergroup conflict, based on preexisting meaning frameworks implicated in naturally occurring individual differences in ingroup glorification. We tested the prediction that people who do not glorify their ingroup—previously shown to subscribe to values of benevolence and universalism (Roccas et al., 2010)—would react to meaning threat by demonstrating greater support for pacifism and peaceful conflict resolution. In addition, consistent with prior research on threat, we predicted that people who do glorify their ingroup—previously shown to subscribe to values of security, power, and conformity (Roccas et al., 2010)—would react to meaning threat by supporting military-based approaches to conflict resolution.

We found support for these hypotheses across three studies. Two studies used highly controlled experimental methods to demonstrate that low glorifiers reacted to meaning threat with an increased commitment to pacifism and decreased support for military conflict resolution, whereas high glorifiers reacted to meaning threat with a decreased commitment to pacifism and increased support for military conflict resolution. A third study supported our hypotheses while attaining greater external validity. Study 3 tested the effects of meaning threat derived from an intergroup conflict itself using a quasi-experimental design in the context of the Israeli–Palestinian conflict. The summer 2014 "hot" Israel–Gaza conflict threatened meaning for low glorifying Jewish Israelis, and—critically—reduced meaning explained their heightened support for peaceful resolution to the broader Israeli–Palestinian conflict. Although the correlational nature of Study 3's design necessarily allows for alternative explanations of the effects, combined with our other results (e.g., validity checks, the finding that meaning was threatened primarily for low glorifiers) our analyses supported our interpretation of the data over alternative explanations, and, taken together, the three studies provide strong converging evidence for our predictions using multiple methodologies.

Specifically, the three studies used different independent variables (basic, subtle meaning threat unrelated to conflict versus strong, real-world, conflict-related meaning threat), different experimental settings (online, lab, and ecologically valid quasi-experimental study), different time intervals between the manipulation and the dependent measures, measuring glorification and attachment before or after the other measures, different historical and cultural contexts, different languages (English and Hebrew), different populations (online adults on MTurk, American college students, Jewish Israelis), and different dependent measures (reactions to the Israeli–Palestinian conflict, hypothetical conflict scenarios involving both real [e.g., US–ISIS, US–Iran] and decontextualized fictitious conflicts). Our predictions were supported remarkably consistently across all studies, given the wide array of methodological variations across studies.

The Prosocial Potential of Threat

Our findings contribute to a growing body of work on the MMM and extend past research that showed prosocial effects of mortality salience (Hirschberger et al., 2008) to the domain of meaning threat. Further, the results contribute to the literature on threat more broadly (e.g., mortality salience, uncertainty, etc.), by demonstrating that threat can have prosocial effects based on naturally occurring individual differences rather than experimental inductions of prosociality or ingroup similarity. We demonstrated that these effects occur even when the context of the dependent variables are threat-related and when the source of meaning threat is closely related to intergroup violence. Our findings are consistent with the theoretical notion that rather than promoting negativity per se, the effects of meaning threat flexibly depend on prior values, as meaning threat appears to lead people to affirm their prior value frameworks, whether prosocial or antisocial. While this idea has been intuitive and compelling, the empirical support for it had so far been quite elusive, as the vast majority of research has documented the negative effects of threat, or positive effects only under highly specific circumstances engineered by help of direct priming.

Threat-Induced Positivity in the Context of Intergroup Conflict

Importantly, the present research serves to more thoroughly integrate the basic meaning threat literature with the intergroup literature, demonstrating the applications of the MMM for basic and applied research on intergroup conflict. The MMM's inherently context-dependent hypothesis (i.e., that meaning threat effects

should depend on preexisting values) fits well with recent perspectives on context-sensitive reactions to intergroup conflict. Demonstrating that threat can have different effects for different people, and that meaning threat can motivate prosocial reactions to conflict among individuals who do not glorify their ingroup, our findings are consistent with research showing that intergroup conflict can bring out positive behaviors in people (for a review see Leidner et al., 2013). Anger, for instance, predicted support for U.S. military action overseas after the 11 September 2001, attacks (Lerner, Gonzalez, Small, & Fischhoff, 2003; Skitka, Bauman, Aramovich, & Morgan, 2006; Smith, Rasinski, & Toce, 2001), whereas it predicted nonviolent policies in the context of the Israeli–Palestinian conflict before the Annapolis summit in November 2007 (Tagar, Federico, & Halperin, 2011), especially for people with low levels of hatred for the adversarial group. In line with this research, we found prosocial effects of meaning threat on dependent measures related to conflict (Studies 1 and 2) as well as when meaning was threatened by an extremely salient, violent "hot" conflict (Study 3).

Additionally, whereas much of the intergroup literature has focused on explaining the psychology of high glorifiers (Bilali, 2013; Leidner & Castano, 2012; Leidner et al., 2010; Roccas et al., 2006) and individuals holding conservative values (Pyszczynski, Abdollahi, Solomon, Greenberg, Cohen, & Weise, 2006), our findings help develop a better understanding of the psychology of low glorifiers and perhaps also individuals holding more liberal values. While we have known based on previous research that high glorifiers react to threat with ingroup bias, defense mechanisms, and aggression to intergroup conflict, to this point we have mostly only known that low glorifiers do not. We know much less, however, about what low glorifiers actually *do*. Based on the three studies we reported, it appears that under meaning threat low glorifiers not only reject ingroup-committed violence, but actively support its cessation and prevention. Further, our results from Study 3 suggest that meaning threats derived from intergroup conflict may be more salient, and thus potentially important to study, among low rather than high glorifiers, as their meaning is more threatened by intergroup conflict.

Studying the prosocial effects of threat and/or low glorifiers could also lead to fruitful applications for conflict resolution. A possible implication of our findings is that, contrary to common opinion, it may not be prudent to delay peace deals until intergroup conflict becomes less violent. Perhaps a better strategy is to push for peace deals precisely when violence is escalating and peace most needed. Not only would this arguably save the most lives, but our data suggests that it might also be the time at which it would be easiest to mobilize people who already support peaceful values and initiatives, and the time during which such people might be most prepared to act. In sum, our findings demonstrate support for the idea that people motivated to maintain meaning do so by relying on their values—whether prosocial or antisocial—and that meaning threat and meaning maintenance processes could perhaps be leveraged to resolve ongoing and prevent future intergroup conflict.

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Appendix: Intergroup Conflict Scenarios

Scenario 1: Imagine that 100 US soldiers have been captured and are being held hostage by "Country X."

Scenario 2: Imagine that three months ago it was discovered that Bundistonia has been dumping radioactive substances in the Pacific Ocean. This practice is damaging the water supply of the United States. Without water a country cannot survive. Bundistonia has been told that they must stop, but has so far ignored all requests to stop. This has led to increasing tension between the U.S. and Bundistonia.

Scenario 3: As you might know, Iran's program for nuclear power is advanced. Democrats and Republican members of Congress are nearly unanimous in arguing that an Iran with nuclear weapons is a threat to the United States and its allies.