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ATTITUDES AND SOCIAL COGNITION

Frustration-*Affirmation*? Thwarted Goals Motivate Compliance With Social Norms for Violence and Nonviolence

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When thwarted goals increase endorsement of violence, it may not always reflect antisocial tendencies or some breakdown of self-regulation per se; such responses can also reflect an active process of self-regulation, whose purpose is to comply with the norms of one's social environment. In the present experiments (total N = 2,145), the causal link between thwarted goals and endorsement of violent means (guns and war) was found to be contingent on perceptions that violence is normatively valued. Experiments 1–3 establish that thwarted goals increase endorsement of violence primarily among U.S. adults of a lower educational background and/or men who endorse a masculine honor culture. Experiment 4 manipulates the perceived normative consensus of college educated Americans, and demonstrates that thwarted goals increase college educated Americans' endorsement of whatever norm is salient: prowar or antiwar. Generalizing the model beyond violent means, Experiment 5 demonstrates that goal-thwarted Europeans report increased willingness to volunteer for refugee support activities if they perceive strong social norms to volunteer. Altogether, these findings support a frustration-*affirmation* model rather than frustration-aggression, whereby thwarted goals increase compliance with perceived norms for behavior, which can increase endorsement of violent means such as guns and war, but also nonviolent charitable actions.

Keywords: thwarted goals, group norms, guns, violence, social cognition

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Since Dollard and colleagues introduced the Frustration-Aggression hypothesis (Dollard, Miller, Doob, Mowrer, & Sears, 1939), psychologists have considered how the thwarting of individuals' goals triggers a range of negatively tinged reactions, ostensibly unrelated to the original goal pursuit, including displaced aggression and tendencies toward violence (e.g., Berkowitz, 1989, 2012; Marcus-Newhall, Pedersen, Carlson, & Miller, 2000). One possible interpretation is that thwarted goals trigger primitive violent impulses that are not only (self-)destructive but also generally antisocial; that is, thwarted goals cause some kind of breakdown in self-regulation that ultimately *decreases* compliance with social norms. Yet, both the inevitability and generality of the resulting aggression have been questioned (cf. Berkowitz, 2012; Miller, Sears, Mowrer, Doob, & Dollard, 1941). Another possible interpretation is that the endorsement of violence is both purposive and socially motivated. Such a motive is more symbolic than materialistic and likely driven by perceptions that violence is valued and respected in one's social and cultural context. If this were the case, individuals would be open to a range of responses to thwarted goals, which could include violence as well as nonviolent alternatives.

Against this backdrop, we propose that a shift toward violence is more purposive and reliant on social norms than it may have appeared thus far. Specifically, thwarted goals may prompt a search for means to address a psychological need (Gollwitzer & Wicklund, 1985; Lewin, 1926), and in certain social and cultural contexts, endorsing violence may be a means to that end. Indeed,

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self-affirmation theory has long argued that, when facing various psychological threats, people become motivated to reaffirm a sense of "moral and adaptive adequacy" (Sherman & Cohen, 2006; Steele, 1988). Similarly, the significance quest theory of violent extremism specifies how, when, and why psychological threats lead individuals to embrace violent cultural narratives (Kruglanski et al., 2013, 2014, 2019). A common thread among such theories is that they postulate a generalized need to be in control, competent, good, praiseworthy, and deserving of respect (Kruglanski, Bélanger, & Gunaratna, 2019; Sherman & Cohen, 2006); also assuming that *social and cultural norms* provide information about the types of actions that symbolize means to potentially address this generalized need.[1] Consequently, goal-thwarted individuals may shift toward violent means not in defiance of social norms, but in compliance with them—affirming norms to affirm oneself. If so, the shift toward violence may not reflect a breakdown of self-regulation per se, but rather a process of self-regulation that can materialize in different ways, depending on one's social context. In short, we propose that the general process that accounts for violent ideas in response to thwarted goals is not frustration-aggression, but rather frustration-*affirmation*.

If thwarted goals increase endorsement of violence in part because of perceived social norms, it suggests that a shift toward violence is neither universal nor inevitable: Whereas some norms may imbue violence with symbolic value, other norms may instead value nonviolent, charitable actions. It would also help to reconcile a seeming paradox in the literature—namely, that threats to control can increase both the endorsement of violence and compliance with normative influences. For example, threats to personal control (and hence to one's sense of adequacy or significance) increase some of the insidious normative influence effects studied in the wake of the Holocaust, including the bystander effect and obedience to authority (Fennis & Aarts, 2012; Glick, 2005). Threats to personal control may also increase endorsement of authoritative social institutions (Kay, Whitson, Gaucher, & Galinsky, 2009), presumably representing a "tight" normative environment (Gelfand et al., 2011), as well as general compliance with perceived norms, leading to conservative or liberal shifts (Jost, Glaser, Kruglanski, & Sulloway, 2003; Kay et al., 2009; Stollberg, Fritsche, & Jonas, 2017). Ostracism can also threaten control, and ostracism is similarly linked to both increased aggression and increased norm compliance (Warburton, Williams, & Cairns, 2006; Williams, Cheung, & Choi, 2000). Taken together, this research suggests that threats to personal control increase compliance with norms.

The proposed model refocuses the analysis on the higher order construct of the *thwarted goal* to determine whether any subsequent endorsement of violence is part of an orderly self-regulatory response. Whereas Dollard and colleagues (1939), in their classic work on the frustration-aggression hypothesis, did stress the issue of frustrated goals, the research agenda in recent decades subtly shifted toward theorizing on the affective and cognitive pathways to aggression. Befitting the cognitive revolution of the time, Berkowitz's (1989, 2012) cognitive neo-association model proposed that the negative affect triggered by thwarted goals (automatically) precipitates the activation of hostile or aggressive scripts via spreading activation of negatively valenced constructs. An unfortunate limitation of such a model is that it essentially sidelined the role of the intentional agent: frustration primarily became a source of negative affect and biased information processing, and the originally thwarted goal has no further role in the process. This approach also suffered from a second key limitation, shared also by Dollard and colleagues' (1939) analysis, in that it could only explain negatively valenced (i.e., proviolent) reactions to thwarted goals, but not prosocial ones. Thus, past reformulations of frustration-aggression not only replaced (purposive) motivation with an associative priming mechanism; it also reinforced the focus on aggression as the sole outcome. To address these limitations, a new model would be needed—one that both reasserts the concept of frustration (i.e., the thwarted goal and the compensatory motivation this evokes) and, thus, also questions both the inevitability and generality of aggression as the result.

Motivated Compliance With Perceived Norms

The proposed model revives the idea that frustration is inherently motivational, which means frustration should operate in accordance with common principles of goal pursuit, including goals operating in the service of superordinate needs (Kruglanski et al., 2002). Thus, goal nonattainment or frustration has implications for need deprivation, intensification, and prioritization. According to the classic definition, frustration specifically pertains to situational interference with the attainment of a desired end state (Dollard et al., 1939). The specific conditions can vary widely, including but not limited to obstacles, setbacks, delays, failure feedback, or even the absence (or removal) of one's previously available means and affordances for goal pursuit. Frustration can be distinguished from the aversive conditions that produced it, because what matters, psychologically, is the thwarted goal rather than the specific conditions per se (Leander & Chartrand, 2017). Frustration can also be distinguished from other goal-related concerns, including fears and uncertainties about the future, because goal *non*attainment is a known event (or an expected event). As such, thwarted goals mainly refer to a known lack or loss of viable means, and according to contemporary theories of goal pursuit such as Goal Systems Theory, this should prompt a *means-shift* toward some other, alternative means (Kruglanski et al., 2002). If the frustration simply pertained to a material need (hunger, thirst), individuals could look to their physical environment for an alternative means of sustenance. However, if the need is psychological (i.e., symbolic), individuals may instead have to look to their social environment to identify actions that are imbued with the kind of symbolic value they seek. This is where social and cultural norms may become relevant for determining individuals' responses to frustration.

The 3N Model and the Quest for Significance

Multiple theories converge on the idea that thwarted goals can lead to norm compliance, but additional theorizing is required to make a connection to violence. One option is to adapt the logic of the significance quest theory of violent extremism and generalize it to everyday responses to thwarted goals.

The significance quest theory articulates how the endorsement of violence can reflect a combination of motivational and social processes (Kruglanski et al., 2013, 2014; Webber & Kruglanski,

[1] Significance quest theory, in our view, constitutes an elaboration of the self-affirmation theory through a more specific identification of its motivational basis. That is, it identifies significance and mattering as a fundamental human need (of evolutionary adaptiveness) served by living up to societal values embedded in social norms of given cultural communities.

2017). The theory's point of departure is the assumption that goals derive from people's basic needs (Kruglanski et al., 2002), and behavior constitutes means to goal attainment (Kruglanski, Fishbach, et al., 2019). The means to satisfy social needs can be spelled out by an appropriate cultural narrative, or norm.[2] The narrative identifies a behavior that serves a cultural value, such that the behavior's enactment confers value upon the actor (and hence, significance). For instance, if the value ensconced in a given cultural narrative was *physical power*, then demonstration of power (e.g., through violence and aggression) would be a normative means to significance; if the value was *charity*, demonstration of charitable behavior would be a normative means, and so on.

For a narrative to be compelling, it has to be ingrained in one's culture, that is, embraced by one's cultural network or reference group. Embracement by the network validates the narrative through the network's epistemic authority (Kruglanski et al., 2005) and turns it into a shared reality (Higgins, 2019). In addition to validating the narrative, the network dispenses rewards, in terms of acceptance and recognition, to those who abide by its dictates. Altogether, the combined elements of *Need*, *Narrative* and *Network* form the 3N model of violent extremism and other, socially motivated behavior (Kruglanski, Bélanger, et al., 2019; Kruglanski, Webber, et al., 2019).

The Frustration-*Affirmation* Model

The basic process outlined in the 3N model connects thwarted goals to norm compliance. From a frustration-*affirmation* perspective, thwarted goals (that deny a social *need*) motivate compliance with the perceived norms of one's social and cultural context (*narrative* and *network*).

The 3N model also makes a connection to violence by explicitly advancing the idea that one's social context determines the normative value of violence (Jasko et al., 2019). Although the theory was originally developed to explain the special case of violent extremism, the model has been previously applied to normal populations: in a recent study of American gun owners, thwarted goals increased endorsement of armed vigilantism against suspected violent criminals, befitting modern gun culture narratives about armed heroism and frontier justice (Leander et al., 2019). This suggests the operation of a general self-regulatory process, wherein thwarted goals motivate individuals to endorse violent action when it is normatively valued.

The model we propose also builds upon a history of theorizing on motivated endorsement of social norms, including tenets of self-affirmation theory (Sherman & Cohen, 2006), terror management theory (Greenberg, Vail, & Pyszczynski, 2014), and social identity theory (Tajfel & Turner, 1979). Self-affirmation theory has, in recent years, begun to theorize that the endorsement of violence may indeed be a means of self-affirmation, citing the specific example of how disadvantaged youths endorse the proviolent norms of gangs to experience control and gain respect (Matsuda, Melde, Taylor, Freng, & Esbensen, 2013; Cohen & Sherman, 2014). Terror Management Theory similarly argues that mortality salience increases compliance with norms that are often violence-promoting, to obtain enduring significance after death (Greenberg et al., 2014; Schindler, Jonas, Fritsche, Koopmann, & Greenberg, 2019). Social identity theory posits that negative self-evaluations can motivate people to compensate at a group-level, seeking positive group-level evaluations through, for instance, endorsing violence against outgroups (Tajfel & Turner, 1979). These theories diverge when drilling down to their specific content and process assumptions, but their similarities might point to a general self-regulatory process: under psychological conditions of deprivation, the shift toward violence depends on the perceived norms of the social environment.

A frustration-*affirmation* model offers a parsimonious explanation for such effects without conflicting with the validity, scope or usefulness of their parent theories. What binds these theories is a common idea that, whether frustrated people turn toward violence or nonviolence, may depend partly on the social and cultural contexts that people rely on for normative information. For example, men who expect to be fired from their jobs may be more drawn to means of violence, such as guns, if they ascribe to norms related to masculinity culture and/or modern gun culture (Cohen, Nisbett, Bowdle, & Schwarz, 1996; Mencken & Froese, 2017). In contrast, higher education negatively predicts support for guns and war (Pew Research Center, 2003, 2017), which we speculate is due to institutions of higher education normatively devaluing violence (through promoting, e.g., liberal ideologies about nonviolence). That is, in situations of thwarted goals that bear on symbolic concerns, higher education and masculine honor may moderate individuals' support for guns and war in different ways. If true, this illustrates, in line with our model, how the social environment is key to understanding how people respond to thwarted goals.

Our model is also consistent with a growing body of evidence suggesting that people often look to their social environment when their personal goals are thwarted (Orehek & Kruglanski, 2018). For example, in their model of group-based control, Fritsche, Jonas, Stollberg, and colleagues identified a pathway of control restoration rooted in acting as part of a group (Fritsche et al., 2013; Stollberg, Fritsche, Barth, & Jugert, 2017). Their model implies that goal-thwarted individuals can increase their identification with agentic groups to experience control via the social self (Fritsche et al., 2013; Greenaway, Cruwys, Haslam, & Jetten, 2016; Greenaway, Haslam, et al., 2015). Our model stipulates that people's social network represents the social ecology within which they learn what behaviors are valued; groups may exist within the network, but attachment to a group is not a necessary condition for individuals to perceive certain behaviors as appropriate means to address their psychological needs. Befitting Deutsch and Gerard's (1955) theorizing on normative influence, people do not need to be psychologically attached to a group to rely on its norms as information for how to act (see also Cialdini & Goldstein, 2004). For example, Giannakakis and Fritsche (2011) demonstrated that under experimental conditions in which psychological control is threatened, individuals behave in accordance with either individualistic norms or collectivistic norms—whichever is salient. This suggests the priority is norm compliance and not collectivism per se, befitting a process of normative influence upon intentional agents.[3]

[2] Such social needs are thought to animate much social behavior, as stressed by major social philosophers, including Hegel, Mead, Marx, and Sartre (for discussion, see Honneth (1992)).

[3] In the 3N model, the relative importance of Network support depends on the extent to which the norm is shared in the society at large. Network support is of particular importance when the group is a minority, whose norm deviates from that of the society at large (e.g., in the case of a small terrorist groups or guerrillas; Kruglanski, Bélanger, & Gunaratna, 2019; Moscovici, 1980).

Ultimately, frustration-*affirmation* refers to an attempt at self-regulation, in which thwarted goals prioritize the satiation of a social psychological need through increased compliance with a perceived norm, as indicated by some display or endorsement of the standards and aspirations of that norm. Accordingly, frustration-*affirmation* can be distinguished from aggression as a direct response to frustration because any shift toward violence involves fitting into normative notions of what is good, praiseworthy, and moral. The proposed model is conceptually and operationally distinct from aggressive behavioral intent, which involves a proximal goal to harm a target, believing that a given action will indeed harm the target, and believing the target is motivated to avoid such harm (Anderson & Bushman, 2002; Baron & Richardson, 1994). Although aggressive intent may often occur in response to thwarted goals, and in some cases even may be motivated by a control-related psychological need (e.g., Leander & Chartrand, 2017; Poon, Chen, Teng, & Wong, 2020; Warburton et al., 2006), frustration-*affirmation* does not necessitate aggressive intent but rather the perception that any given action is normatively valued.

Common Sources of Norms About Violence (and Nonviolence)

Although societal norms may commonly devalue violence, various subcultures may endorse norms for masculinity, frontier justice, and retribution, that value the use of violent means of action (Postmes & Spears, 1998; Sherif, 1936). We will examine two pervasive social milieus in which norms might value violence—namely, a milieu of individuals with *low level of education* and a context characterized by *masculinity culture* (masculine culture of violence). Education level and masculinity are broad cultural categories, and likely to connect to most people, but normative consensus about the desirability or undesirability of violence can also develop within discrete social networks (e.g., family, friends, or peers).

Education Level

The process of becoming college educated in the West involves participation in social institutions (schools and universities) that enforce and reward nonviolent norms and humanitarian values. A person's educational background could determine the specific network that they consider self-relevant, and whose norms determine one's attitude toward violent or nonviolent behavior. Although education level is often ignored in social psychology, research across the social sciences indicates that differences in higher education—the so-called diploma divide—reflect a cultural cleavage in which people of similar education levels tend to flock together and adopt similar values (Depaepe & Smeyers, 2008; Hou & Myles, 2008; Stubager, 2013). This can foster different norms among those with and without access to higher education. These education effects are independent of, and sometimes opposite to, effects of income, indicating that education is not simply a proxy for social class or socioeconomic status. For example, public polls show that (a lack of) college education predicts endorsement of proviolent policies, including Stand Your Ground or "shoot first" laws (American Voters Back "Stand Your Ground," Quinnipiac University National Poll Finds; Obama Tops Republicans on Economy, 2013), military intervention in the Middle East (Pew Research Center, 2003), and the death penalty (Pew Research Center, 2018). Citizens of nations that spend more on education (as a proportion of GDP) are also more likely to reject (terrorist) attacks against civilians as a justifiable means of behavior (Gallup, 2011). Social science research similarly shows that college education negatively predicts intimate partner violence (Stith, Smith, Penn, Ward, & Tritt, 2004), negative intergroup attitudes (Easterbrook, Kuppens, & Manstead, 2016), and authoritarian aggression (Carvacho et al., 2013). All of which suggests that education level corresponds with norms that eschew violence. Thus, we predict that violence should be a more normative response to frustration among lower educated individuals, insofar as it is perceived to elicit recognition and approval from members of their social milieu (cf. Iacoviello & Spears, 2018).[4]

Masculinity Culture

Just as a higher education level might attenuate violence supporting norms, a masculine culture of honor should conversely exacerbate them. Masculine norms in Western countries are often characterized as being agentic, dominant, and tough (Hogan, 1977; but also see Nowak, Gelfand, et al., 2016; Wong, Tsai, Liu, Zhu, & Wei, 2014). If threatened in their masculinity or status, men may try to compensate for such a challenge to (or loss of) significance through physical aggression (Bosson, Vandello, Burnaford, Weaver, & Arzu Wasti, 2009; Cohn, Seibert, & Zeichner, 2009; Goff, Di Leone, & Kahn, 2012). Norms pertaining to male dominance and aggression are considered so pervasive that the American Psychological Association (APA) released guidelines for psychologists to help boys and men address challenges rooted in masculinity ideology (American Psychological Association, Boys and Men Guidelines Group, 2018). Problems of precarious manhood and toxic masculinity may be especially relevant to male gun owners (Cohen et al., 1996; Mencken & Froese, 2017), as guns are a powerful "*mode by which one asserts one's masculinity*" (Haider, 2016 p. 558). This is consistent with the finding that almost all mass shooters are men (Haider, 2016). In the present research, we use endorsement of gun use as a proxy for this masculine subculture and norm. As per the lower educated milieu, masculine honor culture corresponds with violence supporting norms.

Community of Volunteers

According to the present model, thwarted goals may also motivate charity if perceived norms imbue such behaviors with value. Millions of people carry out volunteer activities every year, either

[4] In the present research, the reference to "education level" pertains to Western liberal education, because education in, say, a Salafi madrasa taught by a radical cleric, may actually normalize violent jihad against infidels. We also treat education level as distinct from socioeconomic status, for which it is often used as an indicator; and distinct from income, which has sometimes opposite effects. For example, high education has a negative relation with authoritarianism and prejudice, but income has a positive relation (Carvacho et al., 2013). Education is also more important to one's self-concept, which has implications for one's values (Easterbrook, Kuppens, & Manstead, 2020). In this vein, low education, and not low income, predicts voting based on cultural issues (e.g., anti-immigration policy, see Houtman, Achterberg, & Derks, 2008; Stubager, 2013); low education was a much stronger predictor than low income of voting for Brexit and Trump (Goodwin & Heath, 2016; Silver, 2016). Although education and income are related—and they might have similar effects on violence in some cases (Markowitz, 2003), education is more strongly and specifically related to (anti-) violence norms.

spontaneously or through planful engagement, and research suggests that charitable activities yield psychological benefits for the individual (Clary et al., 1998; Jasko et al., 2019). One's network of family, friends, and relevant others may provide normative information, such as by highlighting that charity and volunteerism are praiseworthy and deserving of respect. Indeed, close others often bring to mind interpersonal activities that they value and deem praiseworthy (Fitzsimons & Bargh, 2003); often these are prosocial, charitable activities. Consistent with that logic, if social norms of charity and volunteerism are salient, then a goal thwarting, far from promoting aggressive behavior, could facilitate volunteering.

The Present Research

We theorize that thwarted goals increase endorsement of violent and nonviolent means, including guns, war, and charitable volunteerism, all in accordance with perceived norms. We develop the foundations of our model in three preliminary experiments and formally test the model in four main experiments. The overarching empirical objective is to determine the plausibility of a frustration-affirmation model—that is, to test the central hypothesis that thwarted goals facilitate compliance with social norms. Rather than try to investigate all aspects of the model, the present research focuses on this first step, to establish the model's heuristic potential and provide a basis for its further development.

Three preliminary experiments form the basis for our model's predictions and research methods. We measured education level, manipulated the thwarting of goals, and assessed endorsement of violent activities as exemplified by war (Pilot 1a), and nonviolent activities such as humanitarian assistance to others (Pilot 1b). The third preliminary experiment (1c) tested our theoretical assumptions that a thwarted goal indeed reduces feelings of personal adequacy and increases endorsement of social norms linked to violence.

Four main experiments then test the central hypothesis. Each experiment involves three distinct components: the motivation (thwarted goal), the norm (measured or manipulated), and a potential compensatory reaction toward compliance with the norms of one's network. Each experiment also uses either a behavioral goal thwarting manipulation or a behavioral dependent measure. Across experiments, we predict an interaction between *thwarted goals* and perceived *norms* on subsequent endorsement of violent (Experiments 2–4) or nonviolent (Experiment 5) activities. Experiment 2 assesses whether endorsement of guns and gun culture are predicted by the interaction of a thwarted goal and (lower) education level. Experiment 3 tests norms pertaining to masculine honor culture and behavior on a shooting task. Experiment 4 tests whether even highly educated people can endorse violent means if they perceive violence to constitute their norm.

In keeping with tradition and past literature, most of the experiments focus on violence. However, the model pertains more broadly to the hypothesis that thwarted goals increase compliance with social norms, some of which may be nonviolent in content. Experiment 5 tests the idea that thwarted goals also increase endorsement of nonviolent activities, when they are normative. Demonstrating compliance with nonviolent norms would broaden the implications of our model—it would show that violence need not be the sole outcome of thwarted goals.

Across experiments, all data were collected before analyses and all exclusions, manipulations and relevant variables are reported. Institutional ethics approval was obtained for all experiments. Full methodological details are provided in the online supplemental materials.

All analyses were conducted in R and R studio (R Core Team, 2017; RStudio Team, 2016). Full data analytic details are provided in the online supplemental materials (e.g., R-code inputs and outputs, Johnson-Neyman plots, power analyses).

Preliminary Experiments

Pilot Experiments 1a and 1b

Two small pilot experiments provided initial evidence that responses to thwarted goals vary by education level. U.S.-based participants were recruited from Amazon's Mechanical Turk (MTurk; Pilot 1a: $N = 103$, 69 women, $M_{age} = 34.46$; Pilot 1b: $N = 78$, 46 women, $M_{age} = 34.69$).[5] Both pilots used a behavioral goal thwarting manipulation used in prior research on displaced aggression (Leander & Chartrand, 2017), which identified two distinct factors that interact to produce a "thwarted goal": the activation of an *achievement goal* followed by a *task failure*. In those prior studies, displaced aggression mainly increased under the combined conditions of a primed achievement goal (vs. control) and forced task failure (vs. success). Rather than revisit the full 2×2 factorial design, we narrowed our manipulation to the priming of an achievement goal (vs. neutral prime) via a Scrambled Sentence Task (see also Chartrand & Bargh, 1996). Then, to instantiate failure, all participants completed an extremely difficult anagram task (Chartrand, Cheng, Dalton, & Tesser, 2010; Trope & Pomerantz, 1998). Thus, participants were either in an Achievement Prime + Failure condition or a Neutral Prime + Failure condition. By manipulating goal activation, but holding failure constant, we ensure that it is not just a failure experience per se that drives responses, but the nonattainment of a primed achievement goal in particular. Achievement primes increase expectations of successful performance and the self-relevance of failure feedback (Custers, Aarts, Oikawa, & Elliot, 2009; Engeser & Baumann, 2014; Moore, Ferguson, & Chartrand, 2011).[6]

The dependent measure is derived from prior research on how psychological threats affect the endorsement of guns, war, and violent extremism (Ein-Dor & Hirschberger, 2013; Leander et al., 2019; Webber et al., 2018). Immediately following the goal thwarting manipulation, participants read about the atrocities perpetrated by the Syrian regime during the Syrian Civil War (July 2013), and then rated their endorsement of either four violent interventions (Pilot 1a) or four nonviolent interventions (Pilot 1b). The four violent interventions in Pilot 1a pertained to lethal actions

[5] In Pilot 1a, one additional participant was excluded for providing nonsensical text entries on the scrambled sentence task. In Pilot 1b, three additional participants had missing data on the education level item and were excluded from the analysis.

[6] In the achievement prime condition, words related to achievement were embedded throughout (e.g., "gain," "win"); in the control condition, neutral words were embedded instead (e.g., "want," "kept"). For the failure task, participants were presented with 25 six-letter anagrams (e.g., dauber → earbud) and were instructed that it was a standard expectation to solve each anagram in about 15 s (Leander & Chartrand, 2017). Each item had a 15 s time limit, making it virtually impossible to perform well. At the end of both pilots, participants were asked to describe the anagram task experience; the vast majority described it in terms of failure, stress, or difficulty (87.4% in Pilot 1a; 89.9% in Pilot 1b).

and escalation of war (e.g., "*Targeted air strikes (against military artillery and weapons)*)," each rated 0 = *not at all* to 100 = *absolutely*; $M = 38.54$, $SD = 22.98$, $\alpha = .76$).[7] The four nonviolent interventions in Pilot 1b pertained to humanitarian actions and de-escalation of war (e.g., "*Safe Zones (establish protected areas in Syrian territory where refugees could gather and be sheltered)*;" $M = 61.97$, $SD = 24.87$, $\alpha = .77$).[8]

Education level was assessed prior to debriefing (*high school* = 1, *some college* = 2, *college* = 3, *graduate/professional degree* = 4, *doctorate* = 5; Pilot 1a: $M = 2.53$, $SD = .91$; Pilot 1b: $M = 2.46$, $SD = .85$).

Effects on Endorsement of Violent Action (Pilot 1a) and Nonviolent Action (Pilot 1b)

Separate regression analyses predicted endorsement of military action (Pilot 1a) and humanitarian action (Pilot 1b) from the goal thwarting condition (coded: Achievement Prime + Failure = 1, Neutral Prime + Failure = −1), education level (standardized), and their interaction. For both pilot experiments, results indicated no direct effects of the goal thwarting or education level (all direct effects: abs(B) < 2.70, abs(t) < 1.00, ps > .32). Rather, both pilot experiments indicated two-way interactions in opposing directions. In Pilot 1a, there was a negative crossover interaction for violent intervention, $B = -6.65$, 95% CI (confidence interval) [−11.06, −2.23], $t(99) = -2.99$, $p = .004$. As illustrated in Figure 1 (top panel), the goal thwarting increased support for violent action at −1 *SD* education level, $B = 7.41$, 95% CI [1.22, 13.60], $t(99) = 2.38$, $p = .019$. Conversely, in Pilot 1b, there was a positive crossover interaction for nonviolent action, $B = 7.75$, 95% CI [2.18, 13.31], $t(74) = 2.77$, $p = .007$. As illustrated in Figure 1 (bottom panel), the goal thwarting decreased support for nonviolent action at −1 *SD* education level, $B = -10.44$, 95% CI [−18.23, −2.65], $t(74) = -2.67$, $p = .009$.

Altogether, thwarted goals increased endorsement of violent action and/or decreased support for nonviolent action mainly among the lower educated; if anything, the higher educated showed an opposing response pattern. We reiterate that the foregoing two pilot experiments were small and underpowered, as potentially highlighted by the lack of direct effects of education level; nevertheless, the pilots provided the basis of our model.[9] To ensure adequate statistical power in all subsequent experiments, minimum sample sizes were determined through a power simulation with the assumption of small effects (Baranger, 2019; see online supplemental materials).

Preliminary Experiment 1c

The aim of this experiment was to provide a manipulation check that a thwarted goal reduces feelings of being an effective, good, and moral person; thus, indicating a deprived psychological need. Reduced personal adequacy should, in turn, predict increased compliance with social norms prevalent in one's community. If lower educated individuals endorse war against a murderous dictator, it may be that they are endorsing traditional norms for "negative reciprocity," which promote (violent) retribution as the correct and appropriate response to unfavorable treatment (Eisenberger, Lynch, Aselage, & Rohdieck, 2004; Gouldner, 1960; Perguini, Gallucci, Presaghi, & Ercolani, 2003).

U.S. based adults were recruited from MTurk ($N = 451$, 134 women, $M_{age} = 34.69$).[10] Given the prior results, participants were prescreened by education level and only noncollege graduates (those with less than a 4-year degree) were recruited. Participants completed the goal thwarting manipulation from Pilot Experiments 1a and 1b, followed by a battery of measures that included the dependent variables of interest. *Feelings of personal adequacy* were assessed via the extent to which participants felt *important*, *empowered*, *vengeful*, *merciful*, *combative*, *cooperative*, *smart*, and *incompetent* (each rated *1 = not at all* to *7 = very much*). The items were coded in a positive direction so that higher scores reflect being good, moral, and effective ($M = 3.60$, $SD = 0.65$, $\alpha = .67$).[11] Endorsement of *negative reciprocity* was later assessed via agreement with three proverbs pertaining to retributive action, "*Fight fire with fire*," "*Revenge is sweet*," and a reverse-coded item, "*Forgive and forget*" (rated −3: *disagree strongly* to 3: *agree strongly*; $M = -0.85$, $SD = 1.40$, $\alpha = .60$). Participants were debriefed at the end of the experiment.

Independent sample t tests indicated that the goal thwarting reduced feelings of personal adequacy as predicted ($M_{goal} = 3.52$, $SE = 0.03$, vs. $M_{control} = 3.67$, $SE = 0.03$), $t(449) = -2.46$, $p = .014$, 95% CI [−.27, −.03]; the goal thwarting also increased endorsement of negative reciprocity ($M_{goal} = -0.66$, $SE = 0.07$, vs. $M_{control} = -1.02$, $SE = 0.06$), $t(449) = 2.72$, $p = .007$, 95% CI [.10, .62]. A mediation analysis using PROCESS (Model 4, 5000 resamples, bias corrected; Hayes, 2013), indicted that the experimental effect on feelings of personal inadequacy at least partially explained the experimental effect on endorsement of negative reciprocity (*thwarted goal → feelings of personal adequacy → negative reciprocity*); indirect effect: $B = .03$, 95% CI [.01, .06]. This suggests

[7] The four violent interventions were, "*Provide weapons and ammunition to rebels*," "*Targeted air strikes (against military artillery and weapons)*," "'*No Fly Zone' (preventing further air attacks)*," and "*Deploy special forces (to eliminate and sabotage military command)*." A fifth item, "*No intervention*" undermined scale reliability and had no bearing on the results as a covariate.

[8] The four nonviolent interventions were, "*Advanced diplomacy (to increase defections and convince al-Assad to resign)*," "*Humanitarian corridors (establish short corridors into Syrian territory through which humanitarian supplies could be delivered)*," "*Safe Zones (establish protected areas in Syrian territory where refugees could gather and be sheltered)*," "*Electronics blackout (using cyber technology to deactivate government communication and missile systems)*." A fifth item, "*No intervention*" undermined scale reliability and had no bearing on the results as a covariate.

[9] We separately sought to validate our assumption that education level predicts endorsement of violence, at least when the violence is for a good cause (e.g., using violence to fight evil). We recruited U.S. based adults ($N = 585$) for an online survey. The predictors were education level and income; the dependent variable was an eight-item scale assessing support for redemptive violence (e.g., "*It is our duty to deal with evil in the world, even if this means using force and violence*," $\alpha = .93$; see Campbell & Vollhardt, 2014). A simultaneous multiple regression resulted in the expected negative effect of education level ($B = -0.17$, 95% CI [−0.296, −0.048], $t(582) = -2.72$, $p = .007$); income had no effect ($B = 0.09$, 95% CI [−0.036, 0.212], $t(582) = 1.39$, $p = .164$). Full details are provided in the online supplemental materials.

[10] In Experiment 1c, we excluded participants who had duplicate IPs ($n = 9$) or who provided nonsensical text entries on the scrambled sentence task ($n = 25$).

[11] The three negative items (*vengeful*, *combative*, and *incompetent*) had no bearing on the results. The reported effects of the goal thwarting manipulation were entirely driven by the positively valenced items.

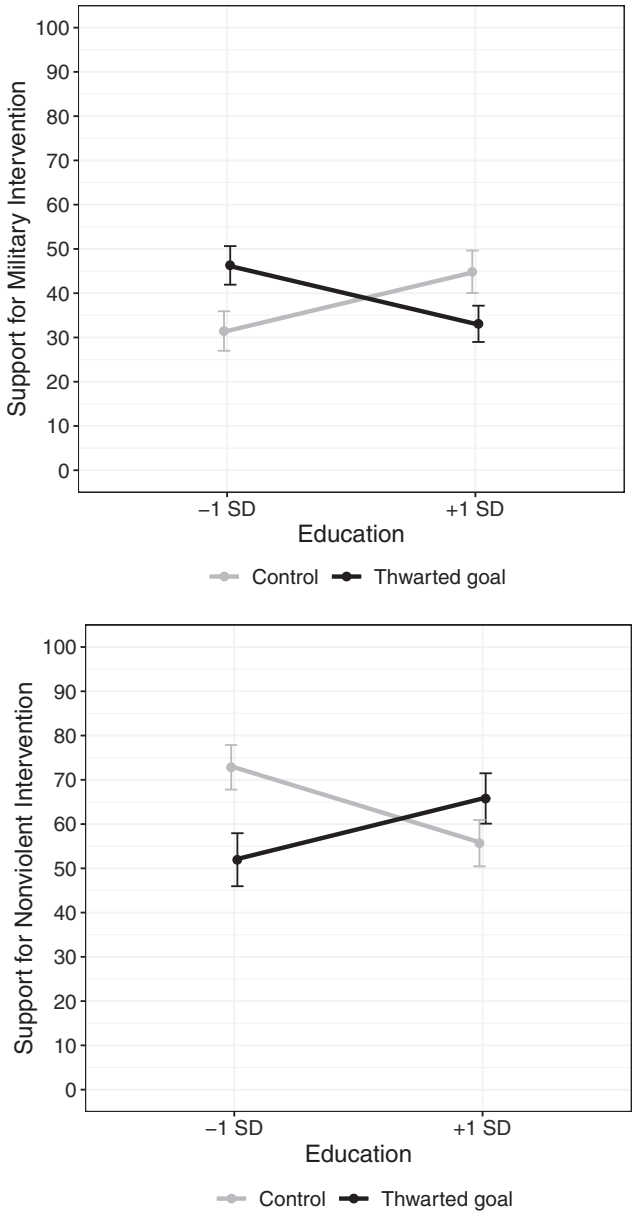

Figure 1. Support for violent action in Syria (top panel, Pilot 1a) or nonviolent action (bottom panel, Pilot 1b), as a function of goal condition and education level.

that the decreased feelings of personal adequacy mediated the increased endorsement of negativity reciprocity.

Discussion of Preliminary Experiments

Pilots 1a and 1b suggest that individual differences in education level moderate whether a thwarted goal is likely to increase the endorsement of violence; when the lower educated are thwarted, they do not simply endorse any action, but violent actions in particular. Preliminary Experiment 1c provided some insight into why this occurs: the thwarted goal specifically reduced feelings of personal adequacy, which mediated the effects of the thwarted goal on increased endorsement of traditional social norms that correspond with violent retribution.

Against this backdrop, the main experiments described below test whether perceived norms moderate responses to thwarted goals in the context of guns and war. Experiments 2–4 maintain the tradition of focusing on violence, whereas Experiment 5 focuses on charity. Therefore, the main experiments mostly examine violence-related responses, but the final one tests how responses to thwarted goals can include nonviolent alternatives.

Main Experiments

Experiment 2

Experiment 2 tests whether education level moderates male gun owners' responses to thwarted goals, particularly their attitudes toward guns and their endorsement of the modern gun culture. In-depth interviews of male gun owners indicate that many endorse a culture of defensive gun ownership not just as a means of utilitarian self-defense, but also to reassert their sense of masculine agency (Yamane, 2018). Specifically, and consistent with the present theorizing, men have been found to make symbolic claims that carrying a gun signals that one deserves dignity, respect, and recognition as a "real man" (Carlson, 2015; Stroud, 2016).

The present experiment was embedded in a broader study on American gun owners that examined the psychological antecedents and consequences of owning a gun for self-defense ("defensive gun ownership," see Stroebe, Leander, et al., 2017). It includes a manipulation of forced failure (vs. success) on an achievement task, a measure of defensive gun ownership, and a measure of education level. We had originally predicted a two-way interaction of *goal thwarting* and *defensive gun ownership* on participants' attitudes toward guns, because defensive gun owners are likely to adhere to modern gun culture. Based on our preliminary experiments, we included *education level* as an additional, third-order moderator.

Method.

Participants. There were 403 male U.S. gun owners who were recruited online via the market research firm Qualtrics Panels. We focused on U.S. gun owners because they qualitatively differ from gun nonowners in that they are likely to perceive guns in a positive light and as means of personal control and individual empowerment (Leander et al., 2019; Stroebe, Leander, & Kruglanski, 2017; see also Shepherd & Kay, 2018). We focused on men because problems with gun violence are, overwhelmingly, a male phenomenon, and because men are the most likely to endorse symbolic reasons for gun carrying (Carlson, 2015; Stroud, 2016; Yamane, 2018).

A prescreening questionnaire ensured that participants were surreptitiously recruited on the basis of gun ownership and male gender, and were stratified by region of country, age, education, and income to get a broad sample of respondents across the U.S. Ten additional respondents were excluded from the analysis for providing unusable data (e.g., straight lined responses, nonsensical text entries, missing data).[12]

[12] When we conducted this experiment, we also conducted a similar version with gun nonowners. In brief, none of the key results reported in this article were replicated among those who did not own guns. Full details of the nonowner samples and their comparison with the gun owners are reported by Stroebe, Leander, et al. (2017).

Procedure. The informed consent form stated that our purpose was to assess beliefs, attitudes, and experiences regarding gun ownership and the use of firearms.

Education level. We used participants' responses from the prescreen session. Response options were: 1 = *some high school or less*, 2 = *high school graduate/GED*, 3 = *some college*, 4 = *college graduate*, 5 = *graduate degree* (M = 3.09, SD = 1.03).

Defensive gun ownership. Participants first completed a questionnaire battery that included an assessment of their reasons for gun ownership. Important for the present work is that participants reported the extent to which each of the following was a reason they owned a gun: *Protection/Self-Defense*, *Hunting*, *Target/Sport Shooting*, *Constitutional Right/Second Amendment*, *Collecting Guns/Hobby*, and *Other*. Participants gave their ratings on a scale ranging from 1 (*not important* or *not applicable*) to 7 (*very important*). The critical moderator variable was *Protection/Self-Defense* (M = 5.96, SD = 1.67); people who own guns for *Protection/Self-Defense*, or "defensive gun owners," own guns as means of violence against other human beings (Stollberg et al., 2017).

Failure task manipulation. To manipulate a thwarted achievement goal, participants were randomly assigned to receive an impossible (vs. easy) cognitive test (Leander et al., 2019). Past research observed that achievement goal failure can be experimentally induced by manipulating whether participants are confronted with difficult (vs. easy) puzzles from Raven's Progressive Matrices (Bongers, Dijksterhuis, & Spears, 2009; Raven, 1941). To ensure the goal-relevance of the task, the cover story stated that it was a test of cognitive ability, which was linked to a person's intellectual capacity, career potential, and goal successes over the life span. Participants in the failure (versus control) condition were instructed "*. . . the standard is to solve each puzzle in 12* [vs. 36] *seconds. Therefore, if you do not answer a given puzzle, you will be given a new one after about 17* [51] *seconds.*" Participants in the failure condition received two puzzles of medium difficulty, then five puzzles that were generally too difficult to solve in 17 s, and finally two impossible puzzles. Participants in the control (success) condition received nine easy puzzles. To ensure that an achievement goal was salient throughout the task, a loading screen with cues to intellectual achievement appeared between each puzzle (clipart-style images of a brain, trophy, award ribbon, etc.).

Participants subsequently rated their hostile affect (*angry*, *irritated*, and *frustrated*, α = .88), anxious affect (*tense*, *anxious*, and *nervous*, α = .83), and quiescent affect (*calm*, *relaxed*, and *serene*, α = .81, see Schaefer et al., 2010). As can be expected, the failure manipulation increased both hostile and anxious affect (Fs > 17.90, ps < .001, η_p^2 = .04–.08), and decreased quiescent affect (F = 5.92, p = .015, η_p^2 = .02). However, self-reported affect had no bearing on the subsequent results and will not be discussed further.[13]

Attitudes toward guns. The dependent measure was participants' evaluation of guns. Participants were presented with an image of four common categories of guns and asked: "*What is your general* ***attitude*** *towards the following: Handguns, precision rifles, modern sporting rifles (e.g., AR-15 pattern rifles),* and *shotguns*." Participants rated each category on a 7-point scale (−3: *extremely negative*, *−2*, *−1*, *0: neutral*, *1*, *2*, *3*: *extremely positive*). The ratings were combined to form a single scale representing their attitudes toward guns, which tended to be positive overall (M = 1.84, SD = 1.15, α = .80).

Secondary dependent measures. The experiment was embedded in a broader survey of American gun ownership; other variables in the dataset afforded exploratory tests of whether the heightened gun attitudes corresponded with endorsement of gun culture values, independent of any realistic self-defense concerns. Three secondary dependent measures were assessed after the experiment and their correlations with defensive gun ownership have been previously reported by Stroebe, Leander, et al. (2017). The scale of interest specifically pertained to endorsement of a gun culture, comprised of five items assessing opposition to gun restrictions and claims that gun ownership promotes order in society ("*gun rights advocacy*," M = 3.90 [out of 7], SD = 1.34, α = .70; Stroebe, Leander, et al., 2017). The two other scales pertained more directly to self-defense: the *right to kill* in self-defense (three items, M = 6.07 [out of 7], SD = 1.12, α = .76; Cohen & Nisbett, 1994), and *justification to shoot* a home intruder (five items, M = 5.12 [out of 7], SD = 1.51, α = .84; Stroebe, Leander, et al., 2017). The *right to kill* and *justification to shoot* were highly correlated with each other, r = .64, p < .001, but each was only modestly correlated with gun rights advocacy ($r_{right\ to\ kill}$ = .28, p < .001, $r_{justification\ to\ shoot}$ = .21, p < .001). Participants were debriefed at the end of the experiment.

Results

The predicted interaction of the goal thwarting manipulation and defensive gun ownership was only observed when including *education level* as an additional moderator. A regression analysis predicted participants' attitudes toward guns from the goal thwarting condition (failure = 1, control/success = −1), defensive gun ownership (i.e., the extent to which *Protection/Self-Defense* was a main reason for gun ownership, standardized), education level (standardized), and all possible interactions. Full regression results are displayed in Table 1. Direct effects included a marginal, positive effect of the goal thwarting, B = 0.10, 95% CI [−0.01, 0.21], t(395) = 1.81, p = .071, a positive effect of defensive gun ownership, B = 0.31, 95% CI [0.20, 0.42], t(395) = 5.60, p < .001, and a negative effect of education level, B = −0.11 [−0.22, −0.01], t(395) = −2.06, p = .041. These direct effects were qualified by a three-way interaction of goal thwarting, defensive gun ownership, and education level, B = −0.14, 95% CI [−0.25, −0.02], t(395) = −2.33, p = .020.

As illustrated in Figure 2, attitudes toward guns became more positive mainly among defensive gun owners who were both goal-thwarted *and* of a lower education level (i.e., a social milieu that corresponds with violence-supporting norms). This interpretation was supported by probes of the three-way interaction. Specifically, there was a simple two-way interaction of Goal Thwarting × Education at higher levels of defensive gun ownership (1 *SD*), B = −0.16, 95% CI [−0.32, −0.01], t(394) = −2.04, p = .042, but not at lower levels of defensive gun ownership (−1 *SD*), B = 0.11, 95% CI [−0.05, 0.27], t(394) = 1.36, p = .176. The

[13] That the failure manipulation increased negative affect, independently of the increased positive attitudes towards guns, is consistent with the idea that this is a motivational phenomenon, not an affective phenomenon per se (Leander & Chartrand, 2017; Poon, Chen, Teng, & Wong, 2020).

Table 1
Summary of Multiple Regression Analysis on Attitudes Toward Guns (Experiment 2, N = 403)

Variable	*B*	*t*	95% CI
Goal thwarting manipulation (failure)	.10	1.81	[−.01, .21]
Education level	−.11	−2.06*	[−.22, −.01]
Defensive gun ownership (DGO)	.31	5.60***	[.20, .42]
Failure × Education	−.03	−0.48	[−.14, .08]
Failure × DGO	−.04	−0.72	[−.15, .07]
Education × DGO	−.06	−1.01	[−.18, .06]
Failure × Education × DGO	−.14	−2.33*	[−.25, −.02]

Note. CI = confidence interval. Model $R^2_{adj} = .089$.
* $p < .05$. *** $p < .001$.

significant simple interaction, among defensive gun owners, was specific to those of a *lower* education level (−1 *SD*) showing a positive effect of goal thwarting, $B = 0.22$, 95% CI [0.009, 0.44], $t(395) = 2.04$, $p = .042$. Defensive gun owners of a higher education level (1 *SD*) showed no effect of goal thwarting, $B = -0.10$, 95% CI [−0.33, 0.12], $t(395) = -0.91$, $p = .362$. Altogether, the thwarted goal mainly led to more positive attitudes toward guns among defensive gun owners of a lower education level.

Secondary dependent measures. To test whether the increase in gun attitudes reflects endorsement of gun culture norms, we applied the regression model to the secondary dependent measures (gun rights advocacy, right to kill in self-defense, and justification to shoot). Full details are provided in the online supplemental materials (Tables S1–S3), but in brief, gun rights advocacy yielded a pattern nearly identical to the gun attitudes: there was a marginal direct effect of the goal thwarting, $B = 0.13$, 95% CI [−0.001, 0.26], $t(395) = 1.96$, $p = .051$, a direct effect of defensive gun ownership, $B = 0.19$, 95% CI [0.06, 0.32], $t(395) = 2.87$, $p = .004$, and a three-way interaction, $B = -0.16$, 95% CI [−0.30, −0.02], $t(395) = -2.25$, $p = .025$. The three-way interaction pattern, for gun rights advocacy, mirrored that for gun attitudes (online supplemental materials Fig. S6). A test of moderated-moderated mediation (PROCESS Model 12) accordingly indicated a reliable indirect effect (*goal thwarting → gun attitudes → gun rights advocacy*), specifically among defensive gun owners (1 *SD*) of a lower education level (−1 *SD*), $B = 0.13$, 95% CI [0.02, 0.27]. There were no such effects on the other secondary dependent measures, nor did controlling for them meaningfully alter the results.

Discussion

The results suggest that whether or not a thwarted goal increases endorsement of violent means depends upon individuals' education level. It was mainly just defensive gun owners, of a lower education level, who subsequently reported heightened positive attitudes toward guns. The shifts in gun attitudes corresponded with shifts in gun rights advocacy, which is consistent with the idea that heightened positivity toward guns indicates compliance with gun culture norms. Experiment 3 sought to further characterize the process of norm-compliance using a behavioral measure of motivational bias.

Experiment 3

This experiment examines how goal-thwarted men, of either a lower *education level*, or who ascribe to *masculinity culture* (masculine honor), perform on a simulated shooting task. The key question is whether defensive gun use is facilitated or disrupted by the motivational process we propose. Judicious shoot or no-shoot decisions require vigilance to differentiate between threatening (armed) targets and nonthreatening (unarmed) targets, and hence prevent deadly shooting mistakes. However, if part of the motivation, underlying shoot decisions, is to assert control and gain respect (cf., Leander & Chartrand, 2017; Leander et al., 2019), individuals might evaluate targets not just as potential sources of threat, but also as potential means to assert control and gain respect. To the extent that gun culture and masculinity culture promote the use of guns to assert power and dominance, individuals motivated to conform to such norms may want to brandish their firearms even in situations that do not warrant their use—increasing the risk of accidentally shooting unarmed targets (committing a "false positive" error). Research in criminology and epidemiology accordingly suggest that guns are much more often used for intimidation than self-defense, and even many cases of self-defensive gun use involve escalating arguments (Azrael & Hemenway, 2000; Hemenway, Azrael, & Miller, 2000). From a frustration-*affirmation* perspective, norms and narratives that promote assertive gun displays may, in certain ambiguous situations, increase the risk of using them.

The use of a shooter simulation has methodological advantages for detecting shifts in normatively guided violence: First, videogames help to disinhibit expressions of masculine power and dominance as well as glamorizing gun violence (Dill & Thill, 2007). Second, if we implement the classic shooter paradigm by Correll and colleagues (2002), we can conduct discriminant validity analyses to distinguish false positives motivated by the embracement of proviolence norms (to display power or enact a particular gun-use narrative), from false positives because of hypervigilant self-defense, which involves doing

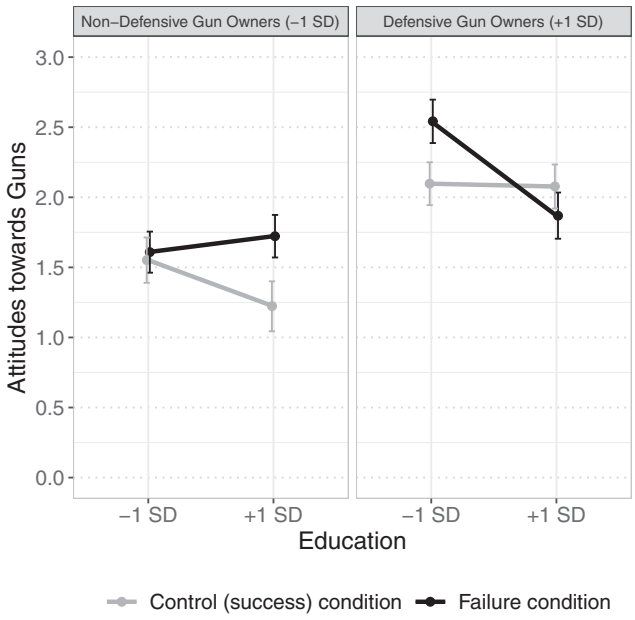

Figure 2. Experiment 2: Attitudes toward guns as a function of failure condition, education level, and defensive gun ownership. Error bars are standard errors of the regression. Y-Axis begins at the midpoint of the scale.

whatever is necessary to ensure survival, including committing more false positives to maximize true positives (Correll et al., 2002; Scholer, Stroessner, & Higgins, 2008). Hypervigilance pertains to threat avoidance specifically, not frustration per se, and as such, hypervigilance can be inferred if false positives mainly increase toward stereotypically threatening targets (i.e., Black men; Correll et al., 2002; Maner et al., 2005; Payne, 2001). A frustration-related response may be more gains-focused (e.g., to restore adequacy or gain significance), and hence driven not by the threat posed by armed targets per se, but rather by one's own eagerness and zealotry. Frustration could increase false positives, independently of target race, because any stimulus target that is not obviously armed (but could be), may represent a sufficiently ambiguous or weak situation that affords a motivationally biased interpretation—one that favors the perceiver's desired outcome of making a shoot decision (e.g., Balcetis & Dunning, 2006; Mischel, 1973).

We operationalized the thwarting of an achievement goal via the expectation of losing one's job (rather than forced failure on a behavioral task). This was done to increase ecological validity and ensure that the effect is not merely an artifact of the experimental techniques used in the previous experiments. The expectation of job termination can have the same psychological consequences as actual termination (Dekker & Schaufeli, 1995; Latack & Dozier, 1986), such as reduced control and esteem (Bukowski, Fritsche, Guinote, & Kofta, 2017; Kinnunen, Vermulst, Gerris, & Mäkikangas, 2003). Expected (or recent) job termination is also a recognized form of goal thwarting that precipitates gun homicides and rampage killings (Fox & Levin, 1994). Yet, expectations of job termination can increase cognitive activation of one's social network (Smith, Menon, & Thompson, 2012), and hence activation of social norms. Thus, we hypothesized that job termination would interact with (lower) education and/or norms for masculinity, to predict false positives on a shooter task.[14]

Method

Participants. There were 285 male handgun owners who were recruited online via the market research firm Qualtrics Panels. We prescreened specifically for handgun ownership to maximize power; handgun owners endorse defensive gun ownership at higher rates than those who exclusively own long guns (such as rifles and shotguns; Stroebe, Leander, et al., 2017). Participants were predominantly non-Hispanic Whites (84.9%; M_{age}: 44.31). Thirty-eight additional respondents were excluded for providing unusable survey data (e.g., duplicate IP addresses, straight lining), and another $n = 136$ provided unusable data on the behavioral shooter task (detailed below).

Procedure. Participants first provided demographic information and gave informed consent, which stated that the purpose of the research was to study attitudes toward gun ownership and use, and that it would include a shooting simulation task. The present experiment was embedded in a broader survey, with no manipulation and, thus, we only report relevant variables below.[15]

Job termination expectancy. We used a measure from Smith et al. (2012) to assess expectations of job termination: "*I am likely to lose my job or be laid off in the next 12 months.*" (0: *Not applicable*, 1: *Not likely at all* To 5: *Very likely*, 6: *Already happened*; $M = 1.60$, $SD = 1.48$). Smith and colleagues (2012) observed that expecting to lose one's job in the next 12 months predicts heightened cognitive activation of one's social network—and hence the potential salience of social norms. Given that we recruited gun owners rather than employed persons per se, we added response options for those who were not employed. Participants who indicated 0: *Not applicable* tended to be the older and younger members of our sample (e.g., retirees and students), who by virtue of not being employed had no expectation of job termination and, thus, no thwarting. In contrast, participants who indicated *6: Already happened* experienced the strongest goal thwarting. Although expected job termination can have the same psychological consequences as actual job termination (Dekker & Schaufeli, 1995; Latack & Dozier, 1986), actual job termination may additionally precipitate a lack of money, lower status, and lost purpose.[16]

Education level. We used participants' responses from the prescreen: 1 = *some high school or less*, 2 = *high school graduate/GED*, 3 = *some college*, 4 = *college graduate*, 5 = *graduate degree* ($M = 3.33$, $SD = 0.95$).

Masculinity culture. Cohen and Nisbett (1994) theorized that the relationship between southern culture of honor and gun ownership was specifically because of an ethic of self-protection and violent retribution. Thus, we sought to specifically tap into male norms for respect and acting as protectors and fighters: (1) "*It is essential for a guy to get respect from others.*" (2) "*It is a man's responsibility to protect his family.*" (3) "*A man should not be afraid to fight.*" (rated 1: *disagree strongly* to 5: *agree strongly*; cf. Pleck, Sonenstein, & Ku, 1994; Saucier et al., 2016). We observed a left-skewed distribution in the resulting scale ($M = 4.17$, $SD = 0.69$, $\alpha = .58$). Cronbach's α was lower than expected, with $\alpha = .60$ typically recommended as the minimum, but Cronbach's α can underestimate reliability for scales with fewer items and nonnormal distributions (Trizano-Hermosilla & Alvarado, 2016). McDonald's ω coefficient was indeed higher and within acceptable limits ($\omega = .64$). More important, the results were virtually identical when testing each masculinity item as a separate moderator, so we proceeded with the combined scale.[17]

Shooter task. Participants completed a shooter simulation task, modified from Correll et al. (2002). In this task, participants were instructed that there is an active shooter in the area and they are the

[14] We only predicted heightened false positives. We did not specify a hypothesis for true positives (correctly shooting armed targets) because of concerns about interpretability: if there were increases in true positives, it could reflect either successful affirmation of progun norms, or it could reflect successful hypervigilance.

[15] The key variables are also unique to this report (job termination expectancy, education level, masculine honor culture, and "shooting" unarmed targets). Note that the survey also measured *disempowerment in society*—a generalized indicator of thwarted goals that predicts progun attitudes under certain conditions (Leander et al., 2019). Disempowerment in society had no bearing on the present results. We speculate that this is because job termination is more focally relevant to men who ascribe to masculine gender roles (being a "breadwinner").

[16] It is possible that "6: Already happened" is qualitatively distinct and does not belong on a continuum of job termination expectancy. Only $n = 8$ participants reported that they had already lost their jobs, and the results were virtually unchanged when excluding them from the analyses (i.e., all significant effects remained significant, all nonsignificant effects remained nonsignificant). Thus, we retained them in the analysis.

[17] Each of the three masculinity items independently moderated the hypothesized results when entered as separate, single-item moderators (all two-way interaction $ps < .05$, full details are in the online supplemental materials Table S4). The stability of these individual-item moderation analyses, with interitem correlations ranging from .19 to .44, supports the use of the combined scale.

only ones with a firearm who can respond. Across eight practice trials and 40 test trials, participants were exposed to images of Black and White male targets, holding guns or harmless objects, in front of complex naturalistic backgrounds. Participants were instructed to "shoot" armed targets (active shooters) and to "not shoot" unarmed targets (innocents), within a limited time frame (1,000 ms), by pressing one of two buttons on the keyboard. This results in four possible outcomes: (a) "shooting" an armed target (true positive), (b) "shooting" an unarmed target (false positive), (c) "not shooting" an unarmed target (true negative), and (d) "not shooting" an armed target (false negative). Participants received points after each trial and were disproportionately punished for errors (true positive: 10 points, false positive: −20 points, true negatives: 5 points, false negatives: −40 points). The dependent variable of interest was false positives—that is, the proportion of unarmed (innocent) targets that participants decided to shoot (M = 25.40%, SD = 19.80%).

Shooter task data cleaning and validation. The shooter task requires participants to make shoot or no shoot decision in less than a second, and failures to respond within the time window are referred to as "timeouts" and represent task noncompliance. Correll et al. (2002) recommend a strict exclusion criterion of no more than 12.5% trial timeouts (1/8 of all trials). In the present Internet-based experiment, this resulted in n = 136 participants being excluded from the original dataset due to excessive trial timeouts.[18] Applying these criteria resulted in our aforementioned final sample of N = 285 participants. Correll et al. (2002) also provided a means to validate the shooter task: their classic racial bias against Black targets, as indicated by within-subjects differences in response times (RTs) to the four possible target categories ([Black vs. White] × [armed vs. unarmed]), resulting in a two-way interaction. The gist is that most people are slower to not shoot unarmed Blacks (vs. unarmed Whites), but faster to shoot armed Blacks (vs. armed Whites). Testing for the racial bias is a useful way to validate our present data because (a) it is conceptually and statistically unrelated to our theoretical variables of interest (the RTs are calculated from correct responses only, whereas we are interested in error rates), and (b) a meta-analysis suggests the racial bias is highly replicable (Mekawi & Bresin, 2015). In the present data, a validation analysis fully replicated the classic within-subjects racial bias (two-way interaction: F = 7.95, p = .005, η_p^2 = .03, see online supplemental materials). Thus, we proceeded with our main hypothesis test.

Results and Discussion

There were only small correlations between the independent variables, job termination expectancy and education level, r = −.06, p = .338, job termination expectancy and masculinity culture, r = .05, p = .405 and education level and masculinity culture, r = −.14, p = .015. Thus, we proceeded with our planned analyses. First, we tested whether job termination interacts with education level to predict incorrect shoot decisions (false positives). Next, we tested whether job termination also interacts with masculinity culture. Subsequent discriminant validity analyses sought to isolate the false positives to a frustration-*affirmation* bias rather than a hypervigilance alternative.

Moderation by education level. A regression analysis predicted incorrect shoot decisions (false positives) from job termination expectancy (standardized), education level (standardized) and their interaction. Results indicated no direct effects of job termination, B = 0.01, 95% CI [−0.01, 0.04], $t(281)$ = 1.07, p = .29,

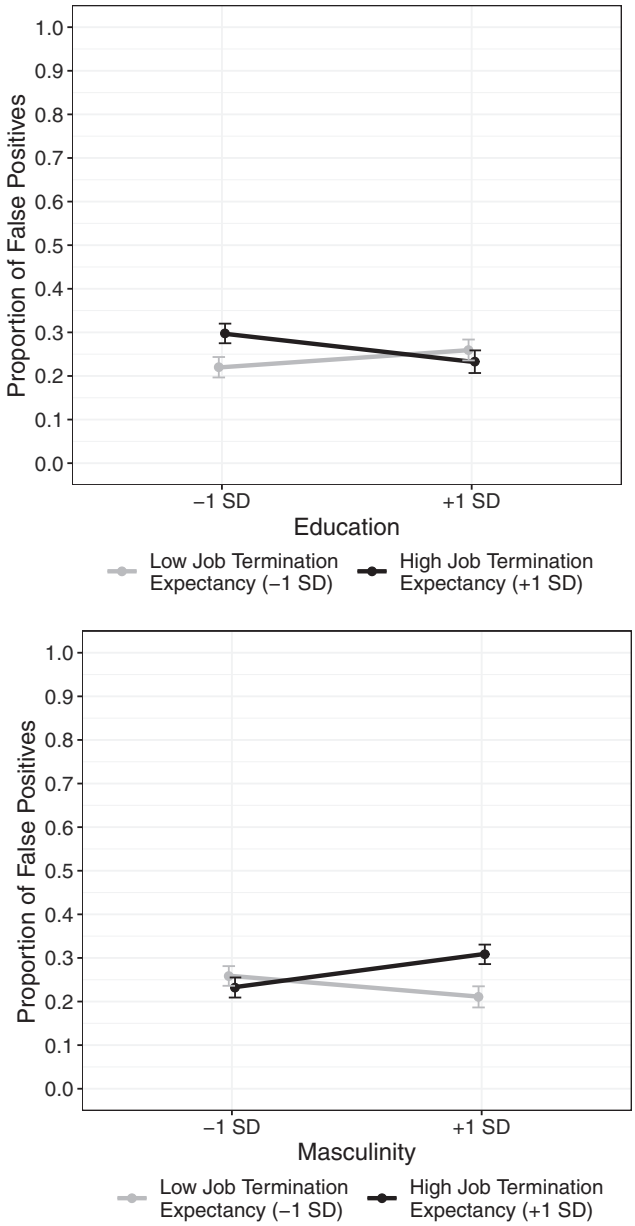

Figure 3. Experiment 3: Male handgun owners' false positives (shooting an unarmed target) as a function of job termination expectancy, as moderated by education level (top panel) or masculine culture of honor (bottom panel). Error bars are standard errors of the regression.

[18] To be expected, laboratory-based studies have fewer exclusions because of timeouts. Despite these exclusions, (a) we fully replicate the classic shooter bias (see online supplemental materials), suggesting the task was successfully implemented, and (b) exclusions due to timeouts were unrelated to our variables of interest. The main predictors of whether or not a participant was excluded because of excessive timeouts were, in order of magnitude: (a) participant age, (b) whether the participant self-reported technical problems with the task (coded 1 or 0), and (c) whether the participant used a computer with a smaller screen display resolution (that would make the gun/no-gun objects less perceptible). These issues are germane to Internet-based data collection.

or education, $B = -0.01$, 95% CI [−0.03, 0.02], $t(281) = -0.54$, $p = .59$, but rather a two-way interaction, $B = -0.03$, 95% CI [−0.05, −0.001], $t(281) = -2.05$, $p = .041$. As illustrated in Figure 3 (top panel), simple slopes analyses indicated that job termination expectancy mainly predicted false positives among participants of a lower education level (−1 *SD*), $B = 0.04$, 95% CI [0.02, 0.07], $t(281) = 2.43$, $p = .016$, and not among participants of a higher education level (1 *SD*), $B = -0.01$, 95% CI [−0.05, 0.02], $t(281) = -0.72$, $p = .472$. When expecting job termination, handgun owners of a lower education level showed an increased tendency to shoot unarmed targets.

Moderation by masculine honor. A separate regression analysis predicted incorrect shoot decisions (false positives) from job termination expectancy (standardized), masculinity culture (standardized) and their interaction. Results indicated no direct effects of job termination, $B = 0.02$, 95% CI [−0.01, 0.04], $t(281) = 1.529$, $p = .13$, or masculinity $B = 0.01$, 95% CI [−0.02, 0.03], $t(281) = 0.604$, $p = .55$, but rather a two-way interaction, $B = 0.03$, 95% CI [0.01, 0.05], $t(281) = 2.76$, $p = .006$. As illustrated in Figure 3 (bottom panel), job termination expectancy predicted false positives at 1 *SD* masculinity culture, $B = 0.05$, 95% CI [0.02, 0.08], $t(281) = 2.95$, $p = .003$, but not at −1 *SD* masculinity culture, $B = -0.01$, 95% CI [−0.04, 0.02], $t(281) = -0.837$, $p = .404$.

Discriminant validity. We hypothesized that job termination expectancy would increase false positives for individuals whose culture values the use of violence. However, a greater proportion of false positives could also issue from hypervigilance in the interest of self-defense. We reasoned that hypervigilance, in particular, would predict a stronger bias against Black targets, who are stereotyped as threatening (Correll et al., 2002; Maner et al., 2005; Payne, 2001). Thus, false positives because of hypervigilance might involve a third-order, within-subjects, interaction with target race. Such a higher-order interaction can be absent if the focal motivation was to affirm one's significance.

To test whether the heightened false positives were because of significance or hypervigilance, we conducted mixed models on the proportion of shoot decisions as a function of target type (within-subjects: unarmed vs. armed), target race (within subjects: Black vs. White), job termination expectancy (between-subjects), and either education level or masculinity culture (between-subjects).[19] Full results are in the online supplemental material (Tables S5 and S6), but in brief, there were no effects of target race, which is inconsistent with a hypervigilance hypothesis, but remains consistent with a frustration-*affirmation* hypothesis. The mixed models also revealed that the effects were specific to false positives; there were no effects on true positives. Specifically, when entering education level as the moderator, there was a positive direct effect of job termination expectancy on the overall number of shots fired (False Positives + True Positives), $F(1, 281) = 4.66$, $p = .032$, but this was qualified by a three-way within-subjects interaction of job termination expectancy, education level, and target type (armed vs. unarmed), $F(1, 843) = 8.40$, $p = .004$. Lower educated individuals, who expected to lose their jobs, shot more unarmed targets (but did not shoot more armed targets). In turn, when entering masculinity as the moderator, there was a positive direct effect of job termination expectancy, $F(1, 281) = 4.71$, $p = .031$, qualified by a three-way interaction of job termination expectancy, masculinity, and target type (armed vs. unarmed), $F(1, 843) = 19.27$, $p < .001$. Individuals who ascribed to masculinity culture, who expected to lose their jobs, also shot more unarmed targets (but not armed targets).[20,21]

To summarize, job termination expectancy interacted with education level and masculinity culture to predict less judicious shoot decisions. Results are consistent with our theorizing that, rather than becoming more vigilant to threat, individuals who were seeking to assert control and gain respect via guns were at increased risk of shooting unarmed targets. Ironically, although the motivation to shoot may be to affirm significance, the commission of false positives would be ultimately self-defeating in this regard (contrary to moral and adaptive adequacy). The mere possibility that violence-promoting norms can be self-defeating highlights the need to examine how flexible people are in their responding to thwarted goals, to determine how easily people can be led to endorse violence, and whether certain normative contexts also promote nonviolent alternatives.

Experiment 4

The aims of Experiments 4 and 5 were to isolate the effect to norm compliance in particular. It remains possible that, in response to thwarted goals, our moderators simply reflect personal chronic tendencies unrelated to norms (e.g., the higher educated may have improved critical skills, or be less affected by their goal thwarting). In Experiment 4, we sought to show that a higher education level does not represent immunity to thwarted goals; rather, thwarted goals make the higher educated comply with the perceived normative consensus for higher educated people, which presumably tends toward nonviolence (cf., Carvacho et al., 2013; Easterbrook et al., 2016). We recruited only Americans of a higher education level (i.e., college graduates), and manipulated whether the perceived norm among Americans with college degrees was to support (vs. oppose) war in the Middle East. We hypothesized that, when goal-thwarted, highly educated individuals will endorse violence when it is framed as normative for the higher educated.

Method

Participants. There were 438 U.S.-based participants with bachelor degrees who completed the experiment via MTurk (240 women, $M_{age} = 39.14$).[22] An additional 93 respondents were

[19] Values beyond ±2.75 *SD* from the mean were winsorized.

[20] The proportion of true positives were, on average, quite high ($M = 82.6\%$, $SD = 14.7\%$). This may suggest a ceiling effect: it is possible the armed targets represented a clear and unambiguous situation that strongly afforded a "shoot" decision, irrespective of the goal thwarting. In contrast, the proportion of false positives was much lower ($M = 25.4\%$, $SD = 19.8$; difference: $p < .001$); yet, the variance for false positives was higher than the variance for true positives (difference in variances: $p \leq .001$). Unarmed targets may have represented an ambiguous or weak situation in which biases can emerge. In other words, the unarmed targets may have afforded more ambiguity, and this is where the bias emerged, producing the larger proportion of false positives among goal thwarted participants.

[21] Subsequent analyses ensured that job termination expectancy was not merely a proxy for low income. Participants' annual income had no direct or interactive effects on shoot decisions, nor did controlling for it alter the effects of job termination expectancy (all $ts < \text{abs}(1.12)$).

[22] To surreptitiously recruit only college graduates, we first recruited openly from Amazon's Mechanical Turk and had them report their demographics at the beginning, including gender, age, and education level ("*less than high school*," "*high school graduate*," "*some college*," "*2 year de-*

excluded due to data quality problems (Meade & Craig, 2012): $n = 57$ failed an attention check pertaining to whether or not they read the text-based manipulation of perceived norms (details are below), $n = 28$ did not follow instructions on the Scrambled Sentence Task, and $n = 8$ had duplicate IP addresses.

Procedure. After an initial demographic prescreen to ensure that only college graduates were recruited, participants completed the same behavioral goal thwarting manipulation from the preliminary experiments: Participants first completed a Scrambled Sentence Task, through which they were either primed with an achievement goal or not (Chartrand & Bargh, 1996), after which all participants were given an extremely difficult anagram task to ensure a failure experience (Leander & Chartrand, 2017).

The manipulation of perceived norms, as well as the eventual dependent measure, pertained to support for U.S. military intervention in Syria. Immediately after the goal thwarting manipulation, participants were presented with a text describing the atrocities of the Syrian civil war and the battle against ISIS. By the time this experiment was conducted (December 2016), the official estimate had risen to 301,781–470,000 deaths, including over 15,099 children, as well as 10.9 million Syrians having fled their homes, creating one of the largest refugee crises in history. The text mentioned these estimates, the war crimes of the Syrian regime, and also concerns that ISIS radicals were using the refugee crisis to infiltrate the west and launch terror attacks. It then mentioned that the United States explicitly endorsed military action against ISIS, but military aid was complicated by strategic and political disagreements.

Next was the manipulation of perceived norms, which regarded whether U.S. college graduates (vs. nongraduates) tended to support military intervention in Syria. The social norm was implied through a combination of value signaling to the higher educated and arguments about the effectiveness or feasibility of military intervention. Specifically, the text described an ostensible education gap between those who support a military intervention in Syria and those who do not. The first screen indicated that a military intervention was generally supported by *college graduates* (vs. nongraduates) for *intellectual* (vs. commonsense) reasons; this was followed by a second screen indicating that military intervention was generally opposed by the other group (noncollege graduates vs. college graduates) because of commonsense (vs. intellectual) reasons. The actual content of the arguments in support or opposition to war was held constant across conditions; we only manipulated whether the normative consensus among the higher educated was to support military intervention in this instance, with nongraduates taking the exact opposite position.[23]

Support for war. The dependent measure was endorsement of military intervention in Syria. Participants indicated their support for "*No military intervention/do nothing*" (reverse-coded), "*Targeted air strikes against ISIS*," "*Deploy special forces (against ISIS command)*," "*Deploy US army and marines to destroy ISIS*," and "*Total military occupation in Syria (to destroy ISIS and depose Assad)*," each rated 0 (*not at all*) to 100 (*absolutely*). All five items hung together as a single scale ($M = 47.19$, $SD = 24.66$, $\alpha = .83$).

Manipulation check of norm content. On the next screen, participants appraised the value of military intervention via three items: "*How strategically necessary is military intervention against ISIS?*" (rated 1 = *not at all* to 7 = *totally necessary*), "*How effective would US military action against ISIS be?*" (rated 1 = *not at all* to 7 = *extremely effective*), and "*Does the US have a moral duty to destroy ISIS?*" (rated 1 = *no moral duty* to 7 = *strong moral duty*). The items were combined into a single scale ($M = 4.37$, $SD = 1.49$, $\alpha = .81$). This scale served as a manipulation check to ensure that goal-thwarted participants indeed aligned with the notions of war as effective and moral means of action, consistent with theories of self-affirmation and significance.

Attention check. Given that the manipulation of perceived norms was delivered via multiple passages of text, its success depended on attentiveness and comprehension of the textual content. Embedded in a subsequent questionnaire, participants were reminded of the text they read about Syria and were asked a basic comprehension question pertaining to the perceived norms manipulation: "*According to the text, which group of Americans is more likely to support military intervention in Syria?*" Answer options included "*College educated Americans*," "*Americans without a college degree*," or "*The text did not mention either*"; the correct answer obviously depended on each participant's experimental condition. We had expected that inattentive participants would fail this item and, thus, oversampled accordingly to ensure a final sample of at least $N = 400$. Of the original sample, 11.4% ($n = 57$) failed the attention check, resulting in the aforementioned final sample size ($N = 438$).[24] Failure on the attention check was not directly or interactively predicted by the goal thwarting and/or perceived norms manipulations (all Fs < 1).

Auxiliary measure: Group identification. An auxiliary aim of Experiment 4 was to test whether frustration-*affirmation* can occur independently of one's attachment to a group. Our model stipulates that people's social network represents the social ecology in which norms are perceived, and although group identification may be a relevant variable, it is an empirical question whether group identification is a *necessary* condition for goal-thwarted individuals to perceive and endorse behaviors that are valued in their network. After the main experiment, we assessed group identification with the college educated as a potential moderator. Group identification with the college educated was assessed via self-reported solidarity, satisfaction, centrality, and self-stereotyping (12 items; Leach et al., 2008). Example items include "*I feel solidarity with other people who are college educated*" and "*Being college educated is an important part of my identity*," rated 1 = *strongly disagree* to

gree," and "*4 year (bachelor) degree or higher*"). Only those who reported having at least a bachelor degree were forwarded to the present experiment.

[23] The headline was, "*An Academic (*vs. *Commonsense) Case for US Military Intervention against ISIS*." Key phrases included: "*Americans with at least a 4-year bachelor's degree" (*vs. *"Americans who chose not to pursue or obtain a traditional, 4-year college degree*") *"tend to support US military action against ISIS*"; "*Leaders in academia (*vs. *Leaders with real-world experience) support this view*." A supporting argument was made by an ingroup exemplar ("*Professor M. Fitzpatrick, an international historian at Stanford*" vs. "*General M. Fitzpatrick, who has served in the military since graduating high school*)." The final screen described the opposing case by the outgroup (vs. ingroup). "*In contrast, most Americans without (*vs. *"with at least") a 4-year bachelor's degree oppose military action in Syria*." The text went on to describe a "*commonsense* (vs. *intellectual*) *assertion not to sacrifice more American lives in the Middle-East*" and, thus, avoid violent action.

[24] Given that there were only three answer options, random guessing could have produced correct answers one-third of the time (i.e., the true failure rate might have been one-third higher, or 21.3%). However, we preferred to ask a simple question with unambiguously right and wrong answers (vs. a harder question with trickier answer options) to maximize confidence in our exclusion criterion without over-excluding participants.

7 = *strongly agree* ($M = 4.97$, $SD = 1.20$, $\alpha = .91$). If motivated compliance with perceived group norms can occur at the individual level, it should do so independently of group identification. Participants were debriefed at the end of the experiment.

Results and Discussion

Support for war. To test whether goal-thwarted participants were more compliant with the norms manipulation, we conducted a 2 (goal thwarting) × 2 (perceived norm) analysis of variance (ANOVA) on support for war. Results indicated no main effect of goal thwarting condition, $F(1, 434) = 0.002$, $p = .967$, $\eta_p^2 < .001$, but rather a main effect of the perceived norm, $F(1, 434) = 13.36$, $p < .001$, $\eta_p^2 = .030$, and a two-way interaction, $F(1, 434) = 4.57$, $p = .033$, $\eta_p^2 = .010$. The main effect of the perceived norm indicated that support for military intervention was generally higher (vs. lower) when it was normative for college educated Americans to support (vs. oppose) military intervention in Syria. The two-way interaction was relatively weak, but theoretically consistent: As illustrated in Figure 4, there were no simple effects of the goal thwarting per se, neither under the prowar norm ($M_{\text{goal prime}} = 53.45$, $SE = 2.25$ vs. $M_{\text{control}} = 48.94$, $SE = 2.23$, $p = .589$), nor the antiwar norm ($M_{\text{goal prime}} = 40.06$, $SE = 2.36$, vs. $M_{\text{control}} = 45.48$, $SE = 2.41$, $p = .446$). Rather, there was a reliable simple effect of norm condition within the goal thwarting condition ($M_{\text{prowar}} = 53.45$ vs. $M_{\text{antiwar}} = 40.06$, $p < .001$), and not within the control condition ($M_{\text{prowar}} = 48.94$ vs. $M_{\text{antiwar}} = 45.48$, $p = .777$). In other words, the norms manipulation had a more reliable effect among goal thwarted participants. Goal-thwarted participants became more likely to endorse whatever action was normative.

Manipulation check of norm content (shift in values). The goal-thwarted participants also showed a shift in values as a function of the perceived norm. A 2 (goal thwarting condition) × 2 (perceived norm) ANOVA indicated no main effect of the goal thwarting condition, $F(1, 434) = 0.46$, $p = .499$, $\eta_p^2 = .001$, but rather a main effect of the perceived norm, $F(1, 434) = 5.85$, $p = .016$, $\eta_p^2 = .019$, and a two-way interaction, $F(1, 434) = 4.31$, $p = .039$, $\eta_p^2 = .010$. There was a reliable simple effect of norm condition within the goal thwarting condition ($M_{\text{prowar}} = 4.71$ vs. $M_{\text{antiwar}} = 4.07$, $p = .018$), but not within the control condition ($M_{\text{prowar}} = 4.34$ vs. $M_{\text{antiwar}} = 4.30$, $p = .997$). This indicated that goal-thwarted individuals shifted their self-reported values to align with the perceived norm.

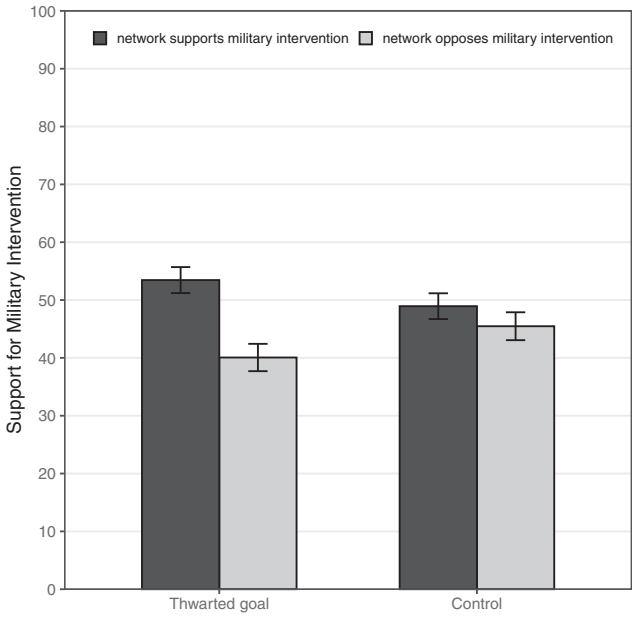

Figure 4. Experiment 4: College graduates' support for violent action in Syria as a function of goal condition and perceived norm for other U.S. college graduates. Error bars are standard errors.

Discriminant validity analysis. Group identification did not moderate the aforementioned effects: A regression analysis predicted support for war from participants' goal thwarting condition (thwarted goal = 1, control = −1), norms condition (prowar = 1, antiwar = −1), group identification (standardized), and all possible interactions. Results again showed the aforementioned direct effect of the norm condition, $B = 4.00$, 95% CI [1.75, 6.26], $t(430) = 3.51$, $p < .001$, and two-way interaction of the thwarted goal and norm condition, $B = 2.31$, 95% CI [0.05, 4.57], $t(430) = 2.01$, $p = .045$. However, group identification had no bearing on this effect. Group identification instead yielded a statistically independent direct effect, $B = 2.44$, 95% CI [0.01, 0.19], $t(430) = 2.19$, $p = .029$, and two-way interaction with the norm condition, $B = 3.55$, 95% CI [1.29, 5.81], $t(430) = 3.07$, $p = .002$. In other words, the thwarted goal predicted compliance with the perceived norm, and independently of this, group identification also predicted compliance (or conformity) with the norm. There were no other reliable effects—no two-way interaction of the thwarted goal and group identification, $B = 1.21$, 95% CI [−1.05, 3.48], $t(430) = 1.04$, $p = .299$, and no hint of a positive three-way interaction, $B = -0.84$, 95% CI [−3.11, 1.42], $t(430) = -0.73$, $p = .464$. Altogether, group identification was not a necessary condition for goal-thwarted individuals to perceive and endorse actions that are normatively valued in their network.

Altogether, we have observed that thwarted goals predict tendencies toward violence as a function of perceived norms. Whereas Experiments 1–3 examined chronic norms typically associated with differences in education level or masculinity culture, Experiment 4 suggests that situationally perceived norms can override any potentially chronic tendencies. This supports our theoretical claim that responses to thwarted goals are often based on perceptions of normative value. It also suggests that the superordinate goal is not to pursue violence per se, but rather to conform to the norms of one's social and cultural context.

Experiment 5

The aim of the final experiment was to generalize the model to nonviolent activities, which would help to distinguish a frustration-affirmation process from frustration-aggression. In Experiment 5, we tested how thwarted goals can increase endorsement of charitable volunteerism when it is perceived to be normatively valued. To maximize power via our methods, the present experiment shifted toward the Dutch response to refugees, during the peak of the migrant crisis in 2016. At the time, the refugee crisis was the top national concern, according to a study by the Dutch Social and Cultural Planning Office, leading to protests against hosting refugees, but also to nationwide surges in volunteering for refugee

support. Given the extent of polarization across society, we assessed participants' perceptions about the norms of people in their social network (friends, family, and relevant others), particularly with regards to volunteering. We also assessed personal values and other reasons to engage in volunteering. We tested whether a thwarted goal increased willingness to volunteer for refugee support specifically when such behavior was perceived to be normatively valued.

Method

Participants. There were 387 Dutch adults who were recruited via the online research firm ThesisTools (204 women, 156 men, $n = 27$ not reported; $M_{age} = 49.60$). An additional $n = 112$ were recruited but declined to complete the goal thwarting manipulation (detailed below) and were excluded before analysis.

Procedure.

Perceived norms. The moderator variable, perceived norms for volunteering, was assessed at the beginning of the experiment via a Dutch-translated version of the Volunteering Functions Inventory (Clary et al., 1998). This scale provides six motivations for volunteering, each of which offered a viable alternative explanation for our model—but only one subscale pertains to perceived norms. Translating the items to Dutch resulted in an 18-item version of the scale, with three items for each subscale. Most relevant to our model test was a subscale assessing whether volunteering was socially valued: "*People I know share an interest in community service*," "*Others with whom I am close place a high value on community service*," and "*Volunteering is an important activity to the people I know best*" (each item rated 1 = *not important at all* to 7 = *very important*). This subscale represented perceived social norms to volunteer ($M = 3.50$, $SD = 1.50$, $\alpha = .83$).

The other subscales were retained for discriminant validity testing, because each of them provided plausible alternative explanations for why goal-thwarted individuals might increase willingness to volunteer. However, none of them pertained to norm compliance per se. The other subscales pertained to *personal values* (e.g., "*I feel compassion toward people in need*," $\alpha = .85$, $M = 5.22$, $SD = 1.28$), *understanding* ("*Volunteering allows me to gain a new perspective on things*," $\alpha = .77$, $M = 4.54$, $SD = 1.43$), *career advancement* ("*Volunteering experience will look good on my resume*," $\alpha = .84$, $M = 3.03$, $SD = 1.68$), *ego-protection* ("*By volunteering, I feel less lonely*," $\alpha = .81$, $M = 2.65$, $SD = 1.48$), and *enhancement* ("*Volunteering increases my self-esteem*," $\alpha = .72$, $M = 3.22$, $SD = 1.41$).[25]

Thwarted goal. Participants were then either primed with an achievement goal or not, after which all participants wrote about a recent performance failure (Nash, McGregor, & Prentice, 2011; Stollberg, Fritsche, & Bäcker, 2015). For the achievement prime, participants completed a word search task (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Eitam, Hassin, & Schul, 2008). The objective of the word search was to find 12 words in a 16 × 16 letter grid. In the achievement prime condition, 10 of 12 words were achievement primes (e.g., *win*, *achieve*) and two were neutral (*umbrella*, *footpath*); in the control condition, all 12 words were neutral (e.g., *bucket*, *bookcase*; see Custers & Aarts, 2005).[26] The words were displayed above the search grid to ensure exposure to the primes. Participants had three minutes to find as many words as possible, after which they were advanced automatically to the next screen (Leander, Shah, & Sanders, 2014). After the goal manipulation, all participants wrote about a recent performance failure in a task domain in which they are typically competent—such as poor performance at work, insufficient skill to solve a problem, or some bad decision that led to problems. This approach was based on goal threat mindset manipulations used in previous research (Nash et al., 2011; Stollberg et al., 2015). Participants were asked to first explain how the failure pertained to their own skills and capabilities; second, to explain what skills, abilities, or experience they were missing; and third, to describe their feelings about it.[27]

Willingness to volunteer. Participants were then presented with an image of Middle-Eastern refugees at a train station, along with a harrowing tale of torture victimization in their home country.[28] On the next screen, participants indicated their willingness to volunteer in reaction to refugees entering the country, each rated 0 (*not at all*) to 100 (*very much*): "*Donate to charity (for example, UNHCR, UNICEF, Oxfam, etc.)*," "*Write a letter to the mayor expressing support for the admission of refugees*," "*Help the refugees as a volunteer by giving language lessons or being a buddy/mentor*," "*Invite a refugee/family to live in your home for a few weeks*" ($M = 35.87$, $SD = 23.36$, $\alpha = .74$).[29] Participants subsequently completed questionnaires and were debriefed.

Results and Discussion

A regression analysis predicted willingness to volunteer from the goal thwarting condition (*achievement prime* + *failure* = 1, *neutral prime* + *failure* = −1), perceived social norm to volunteer (standardized), and their interaction. Results indicated no direct effects of the goal thwarting condition, $B = 0.95$, 95% CI [−1.37, 3.26], $t(383) = 0.81$, $p = .421$, or perceived norm, $B = 1.03$, 95% CI [−1.29, 3.34], $t(383) = 0.87$, $p = .385$, but rather a two-way interaction of goal thwarting and perceived norm, $B = 3.69$, 95% CI [1.38, 6.01], $t(383) = 3.14$, $p = .002$. As illustrated in Figure 5, simple slopes analyses indicated that the goal thwarting increased willingness to volunteer among participants who perceived a strong norm to volunteer (1 *SD*), $B = 4.64$, 95% CI [1.37, 7.92], $t(383) = 2.79$, $p = .006$, but not among participants who perceived

[25] Participants then completed a multicultural personality questionnaire (van der Zee, van Oudenhoven, Ponterotto, & Fietzer, 2013), meant to test an unrelated research question related to the volunteering functions inventory. For the present research question, it simply functioned as a filler to obscure our interest in their motivations for volunteering.

[26] Achievement words: *winnen*, *succesvol*, *klaar*, *groeien*, *behalen*, *werken*, *uitbreiden*, *toekomen*, *welvaart*, *slagen*; neutral words: *voetpad*, *paraplu*, *emmer*, *boekenkast*, *boot*, *hendel*, *vrijwel*, *kist*, *rondom*, *ingang*, *zadel*, *banaan*.

[27] As previously mentioned, 112 participants declined to complete this failure task (e.g., leaving the text fields blank), but this tendency was not predicted by goal thwarting condition (Wald = 1.42, $p = .234$). Moreover, we had oversampled in anticipation of this exclusion criterion in an a priori effort to recruit a final sample of $N = 400$.

[28] We used two different photographs of refugees at a train station (licensed from Getty Images and Dreamstime). The photos differed in the number of refugees depicted, but the specific photo used did not affect the results. The text was consistent across both pictures.

[29] A fifth item, "*protest against the arrival of refugees*" (reverse coded) undermined scale reliability and was excluded (corrected item-total correlation = .09, $\alpha = .68$). It had no bearing on the results as a covariate.

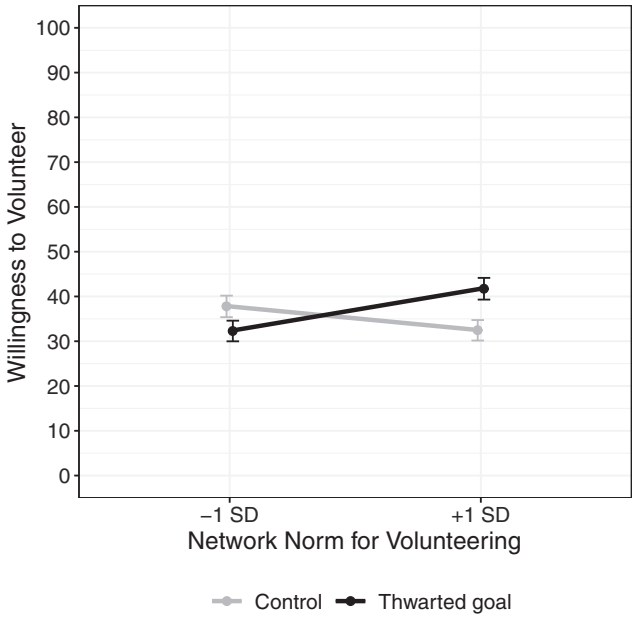

Figure 5. Experiment 5: Willingness to volunteer in refugee support activities as a function of goal thwarting condition and perceived social norms to volunteer.

a weak norm to volunteer (−1 *SD*), $B = -2.75$, 95% CI [−6.02, 0.53], $t(383) = -1.65$, $p = .100$. This helps to generalize our model by connecting it to endorsement of nonviolent means.

Subsequent discriminant validity analyses indicated that the perceived norms subscale moderated the effects of the thwarted goal even when controlling for the other volunteering subscales and/or their interactions with the goal thwarting. In response to the thwarted goal, the moderation by the perceived norm to volunteer was statistically independent of the other reasons to volunteer, such as because of participants' personal values, or for personal growth, career advancement, ego-protection, or enhancement.[30] This is consistent with the self-affirmation theory perspective that the point is not to esteem or praise oneself, but rather to act in ways that cultural norms deem to be praiseworthy and deserving of respect (Cohen & Sherman, 2014, p. 336). This is also consistent with the significance quest theory and 3N model, whereby achieving significance requires endorsing the narratives (norms) of one's network—again, the point is not to respect and admire oneself, but to demonstrate that one deserves praise and respect. This helps to isolate the effect to norm compliance in particular.

General Discussion

In this article, we described a frustration-*affirmation* model of responses to thwarted goals, along with several experiments designed to test the model's central hypothesis. Our theorizing further develops Dollard et al.'s (1939) frustration-aggression theory and its modifications (e.g., Berkowitz, 2012; Miller et al., 1941). We share with these approaches the notion that frustration is a psychological reaction to the threatening, delaying, or blocking of goals. However, our model differs in so far as it predicts that people, in an attempt to affirm themselves within a relevant network, will comply with its norms. As such, our model shifts from a focus on a generic response to frustration to a focus on context-dependent responding.

The starting assumption of our model is that goals derive from people's needs. When a goal is thwarted, individuals search for alternative means to address the need that was denied by the thwarting. Frustration-*affirmation* may not apply to all types of frustration, but rather to frustrations of a psychological need concerned with adequacy and significance (Kruglanski et al., 2019; Sherman & Cohen, 2006). Such a need motivates individuals to embrace the normative values of their social group or network; if the network promotes norms related to power displays, goal-thwarted individuals may be more likely to endorse violence; if the norm is to volunteer and help others then individuals may endorse charity.

Each of our experiments involved three distinct components: a thwarted goal (i.e., frustration), a perceived norm, and a potential compensatory response. Rather than using lab studies with students, we used Internet-based studies to recruit relevant adult populations, and relied mainly on real-world issues and variables (e.g., masculinity culture, education level, and job loss). Our approach had a double purpose: to test the prediction that thwarted goals increase people's compliance with the norms of their network, and to test whether education level and masculinity serve such network and normative functions. The latter issue is especially relevant to level of education and the endorsement of guns and war.

Summary of Findings

Pilots 1a and 1b supported two hypotheses: First, that a task failure mainly only represents a goal thwarting for individuals primed with an achievement goal; second, and more importantly, that a goal thwarting resulted in greater endorsement of violence mainly among individuals of lower education levels. Experiment 1c demonstrated that, among adults of a lower education level, the goal thwarting reduced feelings of adequacy on socially valued dimensions. Individuals who felt inadequate were likely motivated to restore or make gains to their adequacy (i.e., significance); accordingly, the reduction in felt adequacy mediated the effects of the thwarted goal on increased endorsement of traditional norms for retribution.

The prediction that thwarted goals increase endorsement of violent means mainly among individuals of lower education level was further supported in Experiments 2 and 3. Among samples of male U.S. gun owners, the thwarting of goals was either manipulated (failure vs. success on an achievement task), or measured via expectancies of involuntary job loss. Given that it is mainly defensive gun owners who adhere to the modern gun culture, Experiment 2 assessed whether participants owned their guns for self-defense and Experiment 3 recruited only handgun owners (i.e., owners of defensive weapons). In Experiment 2, the goal thwarting resulted in more positive gun attitudes among defensive gun owners of a lower education level; in Experiment 3, expectancy of job

[30] Our theorizing does not rule out the possibility that the other subscales could independently moderate the effect. What mattered for our model test was that the moderation by social norms was independent of such alternatives. Surprisingly, however, none of other subscales reliably moderated the effects of the thwarted goal when controlling for the social norm effects.

loss predicted more false-positive shooting errors, on a shooting simulation task, among individuals of a lower education level or who ascribed to a masculinity culture. Experiment 3 suggests that reliance on violent means (e.g., guns) may be self-defeating to the extent that it increases the risk of making deadly errors.

Altogether, Experiments 1–3 suggested increased endorsement of violence mainly occurs among goal-thwarted individuals whose social networks are likely to normatively prescribe violence. These experiments also demonstrated that education level and masculinity culture appear to fulfill such a network function.

To provide process evidence for norm compliance, Experiment 4 directly manipulated the perceived norm toward violent action. All participants in Experiment 4 were college educated. The prevailing norm was manipulated directly by instructing participants that college graduates either supported violent intervention in the Syria conflict or did not support violent intervention. Consistent with predictions, goal-thwarted individuals were more likely to behave in line with the norm manipulation. Although such a heavy-handed manipulation might have given rise to demand characteristics, it is important to note that our model test was not about the main effect of the norm manipulation, but rather that the norm manipulation interacted with the goal thwarting. Finally, to test whether our model can be generalized beyond endorsement of violent means, Experiment 5 tested whether thwarted goals increased compliance with social norms for nonviolent, charitable means of action. We recruited Dutch participants and assessed their perception of charitable norms through a questionnaire. Goal-thwarted individuals were more likely to endorse volunteering if their network valued volunteering.

All of the present experiments point to what we see as the core contribution of our article: that although thwarted goals can increase endorsement of violence, such responses are not necessarily because of a breakdown or lack of self-regulation per se, but rather a purposive response that involves endorsing behaviors perceived to be normatively valued.

Implications

The present research supports a motivational perspective on the link between thwarted goals and aggression and violence (Kruglanski et al., 2013, 2014, 2019; Leander & Chartrand, 2017). These models treat such responses as means to an end, where the "end" is more symbolic than materialistic. Among goal-thwarted individuals, this manifested itself in the endorsement of behaviors based on their perceived normative value. Our reasoning built upon a history of social psychological theories, which shows in various ways that psychological threat and deprivation can increase adherence to proviolent norms. Yet, it remained unclear how frustrated or thwarted goals in particular could lead to such effects. To justify our model predictions, we adapted Kruglanski and colleagues' 3N model of violent extremism and generalized it to everyday responses to thwarted goals (Webber & Kruglanski, 2017). We started with the idea that thwarted goals, to the extent that they imply lowered effectiveness on socially valued dimensions, increase the search for alternative means to address a frustrated or unmet psychological need. This process motivates looking to one's network for a narrative (or norm) that identifies the behaviors that are positively valued and, thus, if endorsed or implemented, may represent a symbolic means to address the need.

From a frustration-*affirmation* perspective, the shift toward violence reflects the prioritization of a psychological need that is ordinarily satisfied through the pursuit of everyday goals (e.g., in the realms of intellectual or professional success). Our theoretical assumptions are based on Goal Systems Theory (Kruglanski et al., 2002), which posits that goals and means are organized hierarchically in memory, whereby concrete goals, such as achievement, act as means to or subgoals to address abstract psychological needs. If responses to frustration are rooted in a broader goal system, the goal thwarting itself mainly serves as a catalyst for a shift in how one pursues the abstract need. Accordingly, the present experiments used a triangulation of research methods to argue that, when an achievement goal is unattainable via one means (e.g., forced failures on tasks or job loss), a shift toward violence occurs because the individual seeks another means to the same psychological end.

By clarifying that frustration-*affirmation* is about conceptualizing norm compliance (and consequent endorsement of violence) as a *means*, rather than the ultimate end, it affords a theoretical argument that violence is neither inevitable nor the sole outcome of thwarted goals. Previous applications of Goal Systems theory have shown that aggressive and violent responses are attenuated if the individual identifies alternative means to need satisfaction (Leander & Chartrand, 2017; Schumpe, Bélanger, Moyano, & Nisa, 2018). The present research similarly suggests that if the norms change, the means of responding to thwarted goals will change accordingly. Although the present research should not be confused with a study of aggressive intent, it remains possible that aggressive intent is often a product of its perceived normative value. In this vein, religious (but not nonreligious) persons who are exposed to violence-justifying Bible scriptures subsequently show heightened displaced aggression (Bushman, Ridge, Das, Key, & Busath, 2007). Accordingly, integrative theories of aggression, including the social interactionist theory as well as the General Aggression Model, propose that socialization and normative influence can influence both aggression and the fostering of nonaggression (Dewall, Anderson, & Bushman, 2011; Tedeschi & Felson, 1994). Ultimately, the shift toward violence involves fitting into normative notions of what is good, praiseworthy, and moral—endorsing violence to end violence (Syria), or exact frontier justice upon dangerous criminals (i.e., the violence is virtuous; Fiske & Rai, 2014). However, frustration-*affirmation* goes a step further to argue that violence is not a necessary response. It integrates violent responding with a range of potential alternative responses previously set forth by theories of psychological threat-defense (Greenberg et al., 2014; Cohen & Sherman, 2014).

Frustration-*affirmation* also connects violence to basic principles of goal pursuit, including processes of incentivization and expectancy of future gains. This means that advances in motivation science could clarify the nature of the response to frustration: With regards to goal failure, one can speculate on distinguishing "threat" (an uncertain future loss) from "frustration" (a known or expected loss). If frustrations stem from known losses (rather than feared losses), the motivated response may be primarily oriented toward the pursuit of gains—to restore what was lost—rather than preventing the loss. When considered in context to regulatory focus theory (Higgins, 2012), one difference between threat and frustration may be in the approach-versus-avoidance orientation of the resulting response.

An important implication of our reformulation of the frustration-aggression link is that violence is just one possible alternative means to resolve frustration. Whereas prior theorists agree that frustration does not invariably lead to aggressive responses (e.g., Berkowitz, 2012), their aim was not to provide a comprehensive theory of when it does. The present model specifies conditions in which proviolent responses occur (and when other responses might occur instead). In fact, Miller et al. (1941) invited three advances to frustration-aggression theory that the present model seeks to address: First, to determine when aggression-related responses would ". . . *occupy the dominant, the second, the third, or some other position in the hierarchy of instigations aroused by a frustrating situation*" (p. 341). Second, to identify fundamental principles that drive frustration-aggression. Third, to study the socialization processes and "*structure of the social maze*" (p. 341) in which frustration-aggression processes are situated. The present research proposes advances in all three areas: first, Miller et al.'s (1941) notions of a hierarchy of possible responses fits with a goal-means hierarchy, whereby people maintain their preferred means to address their needs but retain the potential for aggression as a means of last resort (Leander & Chartrand, 2017). Second, with regards to fundamental principles, we operationalize frustration in contemporary terms of goal pursuit and motivation. Third, with regards to socialization, the perceived norms of one's social and cultural context provide a mental structure of the social maze in which frustration-aggression processes are situated.

Aside from the theoretical implications, frustration-*affirmation* may have methodological consequences. Our early discovery—the moderation by *education level*, may be especially important given psychology's historic reliance on student samples on university campuses. In such studies, any failures to detect proviolent responses could be explained by the prevailing norms. When studying guns, war, refugees, and other sensitive issues, participants' social context might alter the normative appropriateness of any given course of action. The present research accordingly sought to recruit participants for whom the social context was likely self-relevant: Experiments 2 and 3 focused on guns and, thus, examined gun owners; Experiments 1a, 1b, and 4 focused on war and examined Americans' support for violent intervention in the Middle East. Experiment 5 focused on responses to refugees and, thus, examined Europeans during a migrant crisis. Indeed, despite the limitations of Internet-based experiments, they afford the study of relevant populations in their own (naturalistic) contexts.

Limitations

The results of the present experiments should not be overstated or overapplied. Our main empirical objective was to establish the plausibility of frustration-*affirmation* as a general process; authoritative claims cannot be made on the basis of a single set of Internet-based experiments, which might lack the experimental control of lab-based experiments. Although the patterns of the data across all the experiments were consistent and stable, the effect sizes of the interactions were small. It is unclear whether the small effects reflect a limit to frustration-*affirmation*, or whether they reflect our use of relatively mild manipulations, measurement operations, and online samples (Baumeister, 2020). The use of minimally intrusive methods may be ethically defensible—and even practical for initial model tests among general adult populations, but they can come at the cost of external validity. Even the measured dependent variables mainly only assessed ideas or intent; for such ideas to translate into real-world behavior, it may require more specialized sampling and more intense or sustained conditions (see also Bushman et al., 2016; Levin & Madfis, 2009). That said, small effects are meaningful when they show that a minimal manipulation suffices to predict variance in an important dependent measure (Prentice & Miller, 1992); in this case, mild goal frustrations sufficed to inch people toward endorsement of guns and war. Small effects may accumulate over time or precipitate stronger effects later. Furthermore, real-world instantiations of the independent variables can be more powerful when they constitute severe frustrations (e.g., experiences of discrimination; personal failures; relationship problems; see also Dollard et al., 1939), or when proviolent norms and narratives are conveyed through intense and relentless incitement by charismatic communicators (see, e.g., evidence discussed in Kruglanski et al., 2019; Kruglanski et al., 2019). Furthermore, although the effects in our experiments are small, the fact that they exist and are consistent across multiple experiments, supports their importance and points to their possible greater impact in the real world.

There are also limits to internal validity—that is, the clarity of the constructs the experiments purportedly manipulate and measure. For example, some experiments may be contaminated by demand effects, given that some participants were either explicitly given normative information (Experiment 4), or explicitly asked about a given norm (Experiments 3 and 5). To minimize such issues, we used multiple experiments that varied how directly any given norm could be linked to the dependent variable of interest, and tested for interactions between the norm and a thwarted goal rather than just a main effect of the norm. That being said, the prospect that goal-thwarted individuals are more susceptible to demand effects might fit with our theorizing, to the extent that demand characteristics (i.e., notions of what is valued and expected in a given situation) constitute a situational norm in themselves.

Another limitation is that the studies did not include manipulation checks to test whether, for instance, participants needed to consciously recognize that a goal was thwarted. However, the use of manipulation checks can be obtrusive and invoke new mental processes (Hauser, Ellsworth, & Gonzalez, 2018). Reflection and introspection could prevent aggression-related responses (Anderson & Bushman, 2002; Miller et al., 1941). More generally, when a goal is unobtrusively primed and then thwarted, drawing attention to the experience can attenuate individuals' typical self-regulatory response (Chartrand et al., 2010). To thwart goals, we relied on previously established methods, but we remain agnostic about the role of the phenomenological experience of the thwarting.

A related issue is that the experiments did not isolate the psychological need that is frustrated. Although the third preliminary experiment (1c) sought to ensure that the thwarted goal reduced feelings of personal adequacy, this was a rather general assessment of the theorized need that was deprived. Frustration-affirmation refers to a general process and the pattern across the experiments indicates support for such a process; yet, a single general process can have multiple different mediators, with the specific mediator depending on the context (see, e.g., Cohen & Sherman, 2014). One can nevertheless seek to isolate what remains common across contexts. For example, increased compliance with (proviolent) norms is commonly linked to significance: a deprived sense of significance (marked by feelings of worthlessness and shame) has been found to moderate the endorse-

ment of extremist violence among Indonesian Muslims who are connected to jihadist organizations (Jasko et al., 2019).

A more general limitation of this research is that the present experiments stopped short of testing all of the model's functional and final claims. The present work limited itself to predicting a particular response pattern and further theorizing is needed to specify conditions in which the response produces satiation. Other research hints at the potential for such gains: Surveys of Polish antigovernment protesters suggest that the personal importance of their group's cause moderates the perceived psychological gains from participating in group activism (Jasko, Szastok, et al., 2019). However, as indicated in Experiment 3, relying on violent means can be self-defeating in this regard. Even if the violence produces immediate gains, individuals may later come to regret the violence. Some people may require external feedback from their network, whereas others may find the process inherently self-regulatory (self-affirming). Given these possibilities, it was practical to first test the central hypothesis—that social norms moderate responses to thwarted goals, because such a test is a major endeavor in itself. Such an approach is meant to stimulate further research: as stated elsewhere, requiring extensive data before a theory is proposed can drain it of its heuristic potential for generating new hypotheses (Kruglanski, 2001). Social psychology has a long history of first proposing a general model, along with key indicators of its plausibility, so that it can be further elaborated upon, specified, or falsified.

Further Considerations and Conclusion

Future research can help to clarify the scope and boundary conditions of frustration-*affirmation*, especially with regards to the types of motivations and norms that are included. With regards to motivation, goal frustration need not pertain only to achievement goals. Prior work on significance quest theory covered various types of failures, including in real world professional, economic, relational, and romantic domains (cf. Jasko, Lafree, & Kruglanski, 2017; Webber & Kruglanski, 2017; Webber, Klein, Kruglanski, Brizi, & Merari, 2017; Webber et al., 2018), all of which had the potential to increase endorsement of violence against other people. However, not all goal frustration should lead to normatively guided behaviors, only those that bear on symbolic concerns; the frustration of material concerns can be irrelevant to social norms, and hence can yield different responses.

With regards to the role of norms, people who experience control threats tend to endorse agentic group strategies over nonagentic ones (Stollberg et al., 2015). Accordingly, all the dependent variables we examined involved an element of exercising agency upon the world (Bandura, 2006; Leander & Chartrand, 2017). It is an empirical question whether frustration-affirmation extends to nonagentic responses that are also normatively valued (e.g., seeking comfort; accepting one's circumstance). A frustration-affirmation model assumes that the endorsement of any given norm can depend on its perceived value and instrumentality, both in isolation and relative to other goals (Köpetz, Faber, Fishbach, & Kruglanski, 2011; Orehek, Mauro, Kruglanski, & van der Bles, 2012).

The present research also treated social norms as standards to follow, but sometimes, norms can be reference points for departure: some individuals may seek to outperform a given norm, perhaps in the pursuit of excellence—and perhaps toward extremism. Others might react against social norms when they are too controlling, or they might reject mainstream norms and instead comply with alternative social norms that create the illusion of deviance (Leander et al., 2016; Matsuda et al., 2013). For some frustrated individuals, the available norms may not suffice to address their needs, motivating them to seek alternatives.

To conclude, the present model proposes that goal-thwarted individuals' endorsement of violence may not always be a chaotic breakdown of self-regulation—nor even antisocial. Rather, displaced reactions to thwarted goals may be more purposive and norm-compliant than they appear to outside observers. More generally, our approach recasts a process often assumed to be atavistic and antisocial, to instead argue that a violent response to thwarted goals can be (pro-)social in its foundation.

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