

The Road to Extremism: Field and Experimental Evidence that Significance Loss-Induced Need
for Closure Fosters Radicalization

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Abstract

The present studies examined the hypothesis that loss of personal significance fuels extremism via the need for cognitive closure. Situations of significance loss—those that make one feel ashamed, humiliated, or demeaned—are inconsistent with the desire for a positive self-image, and instill a sense of uncertainty about the self. Consequently, individuals become motivated to seek certainty and closure that affords the restoration of personal significance. Extremist ideologies should thus increase in appeal, because they promise clear-cut strategies for such restoration. These notions were supported in a series of studies ranging from field surveys of political extremists imprisoned in the Philippines (Study 1) and Sri Lanka (Study 2) to experiments conducted with American samples (Studies 3-4). Implications of these findings are considered for the psychology of extremism, and for approaches to counter-radicalization, and de-radicalization.

Keywords: significance quest, need for cognitive closure, extremism, humiliation

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“These people are not going there to behead American journalists... They're seeking answers, they're seeking certainty, they're seeking direction, and many converts are going.” (Richard Barrett on foreign fighters in Syria; Myers & Barrett, 2014)

In a recent interview, noted counter-terrorism expert Richard Barrett commented on the motives of foreign fighters currently volunteering to fight with Islamic militants in Syria and Iraq. He discussed what drives these individuals to leave their home countries and flock to the Middle East, where they join violent extremist groups such as Jabhat al-Nusra and the Islamic State of Iraq and Syria (known as ISIS or ISIL). His response might surprise some—it isn't to quench a blood lust, or to follow the dictates of religious beliefs, but rather to find a sense of certainty and structure. And as he put it, many are going. Recent numbers suggest that roughly 30,000 individuals around the world have joined the fight, making it the largest mobilization of foreign fighters from Muslim majority nations since 1945 (The Soufan Group, 2015).

The phenomenon of extremism is rampant and rising (Clarke, 2015) and is considered a major threat to the security of nations. Major terrorism events have become commonplace, with numerous large-scale terrorist attacks occurring in recent months (i.e., Paris, London, Manchester, Manila, Brussels, San Bernardino, Orlando, Dhaka, Baghdad, Medina, Istanbul, Amman, the list goes on). Despite immense efforts and the investment of vast resources, the threat of terrorism continues to loom large, and experts have pointed out the insufficiency of purely military ways and means of addressing the phenomenon (Byman, 2007; Mazetti, 2006). It is increasingly apparent that stemming the tide of terrorism requires a psychological approach to

gain an understanding of how extreme organizations succeed in winning the hearts and minds of potential recruits. In essence, we need to understand the process of radicalization by which one comes to adopt or endorse extreme attitudes and behaviors. The purpose of the present research is to contribute to this understanding.

Our analysis concurs with Richard Barrett's insight (noted earlier) as to the role of certainty-seeking in promoting extremism. We interpret this tendency within a model of radicalization—significance quest theory (Kruglanski, Chen, Dechesne, Fishman, & Orehek, 2009; Kruglanski et al., 2013; 2014, 2017)—and propose that extremism may be driven by a desire to attain meaning in one's life or a sense of personal significance. As we elucidate in the following sections, circumstances that lower one's sense of significance induce self-uncertainty, which activates a need for closure. Extreme ideologies then increase in appeal, as they offer unambiguous means toward significance restoration.

Significance Quest Theory

Significance quest theory (SQT) provides a theoretical framework for understanding radicalization. SQT highlights the role of individual motivation in radicalization as it interfaces with cultural ideologies and social networks (Kruglanski et al., 2014, 2017). Accordingly, extreme behavior is seen as a means to gaining or restoring an individuals' sense of personal significance, importance, or effectiveness; that is, the sense of mattering in the eyes of oneself and others who matter. Importantly, significance quest is believed to lie at the core of many motivational constructs previously listed as prompting violent extremism. These constructs include but are not limited to: honor, humiliation, injustice, vengeance, social status, monetary gains, loyalty to a leader, and desire to enter heaven (e.g., Gambetta, 2005; Stern, 2004). The

significance-quest construct thus unites these seemingly disparate motives under a common umbrella.ⁱ

The pathway to radicalization often begins with a triggering event that activates the significance motive. A common, though not an exclusive triggering event, is one that entails a loss of significance (LoS) for the individual (see Kruglanski et al., 2014). Any incident that induces humiliation, shame, or dishonor could be a catalyst in this regard. SQT specifically stipulates two forms of significance loss. The first describes humiliation directed at one's social group(s). To individuals strongly identified with the group, such denigration evokes a loss of their own significance. For example, the invasion of one's home country by an occupying force, an event that diminishes the collective significance of the entire nation, has been identified as a powerful motivating force behind suicide terrorism (Pape, 2005). Likewise, young Muslim immigrants likely experience group-based significance loss because of Islamophobia expressed by natives throughout Europe (Kruglanski, Crenshaw, Post, & Victoroff, 2008; Sageman, 2008).

The second form of significance loss occurs when humiliation is directed at one's personal circumstances. For instance, consider the Chechen Black widows who embarked on suicide missions as a result of personal humiliation experienced after their significant others were wrested from them by Russian forces (Speckhard & Akhmedova, 2005). Pedazhur (2005) likewise describes Palestinians who became suicide bombers after suffering stigmas such as infertility or divorce that were neither related to their group identities nor the Palestinian-Israeli conflict.

Presently, the majority of the support for the relationship between LoS and extremism has come from research using databases of terrorist attacks (i.e., Jasko, LaFree, & Kruglanski, 2016; Webber et al., 2015). For instance, Jasko and colleagues (2016) found that domestic extremists

within the United States were more likely to perpetrate violent crime if they had experienced significance loss of either economic or relational kind. Similarly, Webber and colleagues (2015) found that suicide bombers with the highest magnitude of significance motivation, relative to those for whom this motivation was lower, carried out attacks with a greater number of casualties. The most direct evidence comes from field surveys conducted with former terrorists who were currently detained in rehabilitation facilities, and who had already completed the rehabilitation program (Webber et al., 2017). Specifically, the researchers found a significant relationship between feelings of insignificance and the endorsement of extremism, such that increased feelings of insignificance were related to increased extremism. The present studies look to both build on these previous findings, and elucidate a potential mechanism that mediates this relationship between insignificance and extremism, namely, the need for closure (e.g., Webster & Kruglanski, 1994). Need for closure thus paves the way from feelings of insignificance to the embracement of extremism. We elaborate on this mechanism in the following section.

Loss of Significance and the Need for Closure

We propose that instances of significance loss induce a mindset that leads individuals to seek certainty and closure. At the psychological level, humiliating and demeaning experiences should elevate one's sense of personal uncertainty. People are motivated to perceive themselves positively; as moral, valued, good, and competent (e.g., Carver & Scheier, 1981; Leary, Tambor, Terdal, & Downs, 1995; Maslow, 1943; Rogers, 1951; Solomon, Greenberg, & Pyszczynski, 1991; Steele, 1988; Tesser, 1988). Instances of significance loss create an inconsistency between the positive way persons want to perceive themselves, and the humiliating experience they are having (cf. McGregor, Zanna, Holmes, & Spencer, 2001). The discrepancy between current and

ideal states induces feelings of uncertainty and anxiety, which ultimately motivate behavior aimed at reducing the discrepancy and restoring certainty (Festinger, 1957).

In other words, these circumstances instate a desire for a quick and decisive answer, and an aversion to ambiguity. This motivational state has been conceptualized as a need for cognitive closure (NFC; Kruglanski, 2004; Webster & Kruglanski, 1994; Kruglanski & Webster, 1996; Kruglanski, Pierro, Mannetti, & De Grada, 2006). Considerable evidence attests that individuals with a heightened NFC endeavor to develop strong beliefs and form clear-cut impressions in their quest for certainty.

Extremism as the Antidote to Uncertainty

We define extremism as deviancy from a general pattern of behavior or attitude that prevails in a given social context. Relatedly, Webster's dictionary defines extremism as "belief in and support for ideas that deviate from what most people consider correct or reasonable." Violent extremism, which involves engagement in or support of aggression against others, is thus a form of deviancy, as violence against others is typically not widely accepted. The deviancy concept implies a continuum wherein some attitudes or behaviors may deviate from a central tendency to a greater degree than others. In this sense, sacrificing one's life for a cause is more extreme than donating money for that cause, or supporting it verbally, simply because fewer individuals would be willing to carry out the former than the latter. Similarly, the death penalty is a more extreme form of punishment than a jail sentence, because it is administered more rarely.

The deviancy concept also implies *context-dependency*. Deviancy is a referential concept; it is relative to a specific standard. Depending on the nature of that standard, the same attitude or behavior may be deviant in one social context and modal in another. A cursory glance at findings from recent polling (Pew Research Center, 2013) with Muslims in 23 countries demonstrates this

relativism. Consider support for Sharia law, which refers to Islamic religious law derived primarily from the Qur'an and the Sunna (i.e., the sayings, practices, and teachings of the Prophet Mohammed). The Sharia guides all aspects of Muslim life including daily routines, familial and religious obligations, and financial dealings. The poll inquired whether the Sharia should be made the official law of the land. Across the Middle East and North Africa (MENA), South Asia, and sub-Saharan Africa there was widespread support for this notion, with 99% in Afghanistan, 83% in Morocco, and 71% in Nigeria favoring the implied change to the current legal system. However, Muslims across Southeastern Europe and Central Asia overwhelmingly rejected Sharia as the law for their lands, for instance, with only 12% in Albania and 10% in Kazakhstan supporting the idea. Thus, support for the Sharia would constitute extremism in these latter countries, as well as in the United States where Muslims comprise about 1% of the population and where multiple states have banned Sharia in fear that it may come stateside (Sacirbey, 2013). In the former countries, where Sharia receives widespread support, condoning it is modal, hence the opposite of extreme.

In contrast, support of suicide bombing is more universally extreme across Muslim populations. A question regarding the justification of suicide attacks against civilians in defense of Islam was posed to Muslims living in 21 different nations (Pew Research Center, 2013). In every nation surveyed, support for suicide bombing constituted the minority opinion. For instance, in Afghanistan, where 99% supported Sharia as law of the land, only 39% supported suicide bombings. In most of the other nations surveyed, support for suicide bombing was below 15% of the Muslim populations. Thus, unlike Sharia, attitudes toward suicide bombing in many Muslim populations were exceptional and, therefore, extreme.

The relation between extremism and certainty derives from the well-established fact that deviancy is typically costly and difficult to sustain. As Alquist, Ainsworth, and Baumeister (2013) noted: “Nonconformity requires effort...people can save themselves considerable effort and energy by going along with the crowd” (p. 81). Socio-psychological research attests to the considerable difficulty of opposing a majority. In Asch’s (1955) classic conformity paradigm, 66.6% of the research participants complied with the majority opinion even though it contradicted the evidence of their own eyes. In Milgram’s (1965) research, a clear majority of research participants (72.5%) complied with an authority figure in carrying out the questionable activity of delivering a painful electric shock to a seemingly sickly individual. Whether the norm is represented by a majority opinion, or by an authority figure, it holds considerable sway with individuals. Deviating from it comprises a difficult challenge that requires substantial energetic resources (Kruglanski et al., 2012; Kruglanski et al., 2017).

Because of that difficulty, individuals committed to extreme views tend to protect their deviancy from majority pressures by holding them with considerable certainty. In consequence, extreme views are often embedded in confidence-affording and clear-cut ideologies consensually supported by others who share one’s minority opinion (Hogg, Kruglanski, & van den Bos, 2013; Moscovici, 1980). It is for that reason that individuals whose confidence was shaken by a humiliating loss of significance and who, therefore, experience a heightened need for closure and certainty, should find extreme views appealing.

Consistent with the foregoing discussion, we propose that circumstances that induce LoS concomitantly induce a quest for cognitive closure. This mindset should subsequently increase the appeal of extreme ideologies and behaviors. Stated simply, we hypothesize an indirect effect of significance loss on extremism through a heightened need for closure.

The Present Research

Commentators have noted that psychological research on political violence has suffered from over-reliance on experimental laboratory research (Atran, 2010) and a paucity of field studies. As Ginges and colleagues (2011) put it “one reason psychology so far has not clearly demonstrated its obvious relevance to understanding violent extremism is its relative unwillingness to venture off campus” (p. 36). To address such concerns, the present research examined the proposed model in both laboratory and field settings. Two field studies utilized survey instruments to examine the proposed model among groups of extremists—imprisoned Islamic militants in the Philippines (Study 1), and former militant members of the Liberation Tigers of Tamil Eelam (LTTE) held in detention in Sri-Lanka (Study 2). We then built upon these field studies using experiments with American samples that were neither extreme nor at particular risk of becoming so (Studies 3-4) to provide a more stringent test of our proposed models causal properties.

Study 1

Study 1 examined the proposed indirect effect of LoS on extremism through need for closure using a sample of suspected Islamic militants from the Abu Sayyaf Group (ASG) imprisoned in the Philippines. Per the National Counter Terrorism Center (NCTC), the ASG is the most violent Islamic separatist group in the southern Philippines. Their aim is to create an independent Islamic state in western Mindanao and the Sulu Archipelago. They have used terrorist means toward this aim, including the kidnapping of foreign nationals, rape, child sexual assault, drug trafficking, and numerous bombings (e.g., Martin, 2012). The ASG also has known ties to the Indonesian Jemaah Islamiyah, which in turn is connected to Al Qaeda (National Intelligence Coordinating Agency, 2007), and battalions from the ASG recently pledged

allegiance to the Islamic State (ISIS, Weiss, 2016). Our access to this detainee sample provided a unique opportunity to examine our variables of interest with a group of extremists.

As discussed previously, we conceive of instances that induce LoS as those that induce feelings of humiliation, shame, or dishonor related to one's personal circumstances and/or to one's group identity. In the present analysis, we focused on personal feelings of insignificance, and specifically on feelings of shame and humiliation—that terrorism experts have often identified as a potential motivator of extremism (e.g., Pedazhur, 2005, Speckhard & Akhmedova, 2005). Indeed, this cluster of emotions captures a sense of personal devaluation, and is believed to comprise an evolutionary adaptation to the loss of social standing (Elison, 2005; Elison & Harter, 2007; Kaufman, 1992; Miller, 1993; Nathanson, 1992; Tomkins, 1963).

We used a shortened version of the Need for Closure (NFC) scale (Webster & Kruglanski, 1994) to assess whether LoS is related to increased need for closure and whether need for closure, in turn, is related to extremism. The NFC scale has been translated and used across numerous cultures (Mannetti, Pierro, Kruglanski, Taris, & Bezinovic, 2002), and constitutes a well-validated measure of need for closure (see Roets, Kruglanski, Kossowska, Pierro & Hong, 2015). Although NFC is considered a stable dispositional characteristic (Webster & Kruglanski, 1994), it is also sensitive to situational variables that induce certainty seeking (e.g., Van Hiel & Mervielde, 2003; Orehek et al., 2010). Accordingly, we anticipated that individuals reporting higher personal humiliation would likewise express a higher NFC.

Finally, in so far as our participants in this study were Muslim militants, we operationalized extremism as *Islamic extremism*. We defined such extremism as a highly conservative/fundamentalist perspective on Islam, including an emphasis on violent jihad (struggle) against infidels. As discussed earlier, violent jihad (in the form of suicide bombings) is

widely rejected across many Muslim populations (Pew Research Center, 2013). Moreover, we collaborated with Muslim clerics from the Hadija Mosque in Singapore to ensure that our extremism items tapped an extreme form of Islam that would not be shared by the majority of Muslims. We predicted that participants reporting greater humiliation would report a higher NFC, which in turn would be related to increased endorsement of extreme Islamic attitudes.

Method

Participants

Seventy-four (male) suspected members of the ASG terrorist organization participated in the study. Due to missing responses, information pertaining to age, length of detainment, and marital status was only available for 65 participants. Of those responding, the average prisoner was 34.29 years old ($SD = 8.88$), and had been incarcerated in the Special Intensive Care Area (SICA) in the Bicutan Jail for 7.29 years ($SD = 3.19$). In terms of relationship status, 84.6% of the sample reported being married. All but one of the participants were born in the Mindanao island group in the Philippines, with the sole exception hailing from Malaysia. Education level was only reported by 46 participants, but of those responding, 37.0% had only a primary education, 28.3% had a high school education, 8.7% received vocational training, and 26.1% had some level of college education.

Pilot Studies

As already noted, a series of items were developed in conjunction with Muslim clerics from Singapore to assess non-normative Islamic religious views. These items were pilot tested on Muslim community members living in Singapore ($n = 25$) and the Philippines ($n = 91$). Participants indicated the extent to which a variety of statements reflected a “moderate” or “extreme” version of Muslim belief. Only items that were identified as extreme by 65% of those

surveyed in both Singapore and the Philippines were deemed to constitute viable indicators of extremism. This resulted in the selection of 11 items (see Table 1).

These 11 Islamic extremism items ($\alpha = .87$) were validated with a sample of 558 Indonesians that belonged to either (a) moderate organizations that support religious tolerance ($n = 235$), (b) Islamist organizations that fight for the implementation of Sharia law, but do *not* endorse the use of violence ($n = 203$), and (c) jihadist organizations that support the use of violent jihad and suicide bombing ($n = 120$). We thus sampled three groups that differed in extremism in a linear fashion. Participants indicated the extent to which they agreed or disagreed with statements presented to them using a 7-point scale (1 = *Strongly disagree*; 7 = *Strongly agree*). If our items accurately measure Islamic extremism, this linear trend should be reflected in participant responses. This is exactly what we found. A one-way ANOVA and Bonferroni corrected comparisons revealed that jihadists ($M = 4.83$, $SD = 1.09$) expressed significantly greater extremism than Islamists ($M = 3.67$, $SD = 1.18$; $p < .001$), who expressed significantly greater extremism than moderates ($M = 3.01$, $SD = 1.09$; $p < .001$); $F(2, 555) = 104.12$, $p < .001$, $\eta^2 = .27$). We were therefore confident in using a composite of these items as an indicator of Islamic extremism in the present study with the ASG.

Main Study

Loss of significance. LoS was measured as participants' personal feelings of humiliation and shame. Participants responded to three items ($\alpha = .73$) assessing the frequency with which they experienced feelings of "humiliation", "shame", and "people laughing at them" in their daily life. Responses were provided using a 5-point scale (1 = *Rarely or never*; 5 = *Very often*).

Need for Closure. Participants completed an abridged 14-item ($\alpha = .89$) version of the NFC Scale (Webster & Kruglanski, 1994) to measure their motivation to avoid ambiguity and

uncertainty. The scale included items such as “In case of uncertainty, I prefer to make an immediate decision, whatever it may be,” and “Any solution to a problem is better than remaining in a state of uncertainty.” Participants indicated the extent to which they agreed with each item on a 6-point scale (1 = *Strongly disagree*; 6 = *Strongly agree*).

Extremism. Participants indicated their agreement (1 = *Strongly disagree*; 7 = *Strongly agree*) to the 11 ($\alpha = .70$) Islamic extremism items.

Procedure

All instructions and materials were presented in Tagalog, the official language of the Philippines. All scales went through a standard process of translation and back-translation to ensure that they captured the intended meaning. It was explained to participants that the survey was anonymous, independent of governmental agencies or prison authorities, and that no benefit or penalty would result should they refuse to participate. After providing informed consent, participants completed a questionnaire packet containing the scales of interests, among other items. All measures relevant to the hypotheses of interest are reported. Researchers remained in the room to answer questions, and prison staff supervised the process from outside the room.

Results

We used the PROCESS macro and guidelines (Hayes, 2013) to examine the indirect effect of LoS on extremism mediated through NFC. Analyses were conducted first on the full sample ($n = 74$), and only including the variables of interest (i.e., LoS, NFC, and extremism). Analyses were then repeated controlling for differences on the demographic variables of age, length of detainment, education level, and marital status. These analyses were restricted to the subset of the sample for which this information was available ($n = 46$).

Analyses on the full sample first revealed a non-significant total effect between the predictor (LoS) and the outcome (extremism); $b = .15$, $SE = .12$, $p = .217$. Results next revealed that LoS predicted NFC; $b = .26$, $SE = .13$, $p = .050$; and that NFC subsequently predicted extremism; $b = .36$, $SE = .10$, $p < .001$. The direct effect of LoS on extremism was not significant; $b = .06$, $SE = .11$, $p = .622$. To examine the significance of the indirect effect, we calculated bias corrected 95% confidence intervals of the indirect effects using 10,000 bootstrapped resamples. As “0” was not contained within the confidence intervals, the indirect effect was indeed significant; $CI [.024, .215]$. The results are depicted in Figure 1. The pattern of results was unchanged when analyses were conducted on the reduced sample and including the covariates; $CI [.013, .452]$.ⁱⁱ

Discussion

The results of Study 1 provide initial support for the proposed indirect process model; the experience of personal humiliation was positively related to NFC, which was then positively related to Islamic extremism. This suggests that experiences of humiliation that occasion a sense of lost significance may shake individuals’ self-confidence, motivating them to restore their sense of certainty and closure. This mindset should thereby increase the appeal of extreme ideologies that offer simplistic, certainty-affording worldviews. Importantly, these results were found amongst a group of suspected extremists imprisoned in the Philippines, a context high on external validity regarding the radicalization process that our model seeks to explain.

It will be noted that the present findings examined a specific form of extremism, namely religious extremism related to Islam. A straightforward implication of the deviancy conception of extremism is its relativity to context, a sentiment captured in the common phrase “one man’s terrorist is another man’s freedom fighter.” In Study 2, we thus operationalized extremism in

terms of deviation from norms within a context wherein extremism has little to do with matters of faith. Indeed, one of the most violent terrorist organizations to date, the Liberation Tigers of Tamil Eelam (LTTE), was primarily motivated by politics and not religion. Somewhat like the ASG, the LTTE sought to advance a separatist cause via extreme means. However, while the ASG strives for a theocratic society governed by fundamentalist Islam, the LTTE cause was ethno-nationalist in nature. Separatist ideologies arose among Sri Lankan Tamils because of historical inequalities between the minority Tamils and the majority Sinhalese, including the “Sinhala only act” that failed to recognize the Tamil language as an official language of Sri Lanka. Our access to an LTTE sample in Study 2 thus provided an opportunity to test our model of extremism in a different population of relevant participants.

Study 2

We examined a large sample of former members of the LTTE in Sri Lanka, officially recognized as a terrorist organization by 32 nations, including those in the European Union, the United Kingdom, the US, India, and Canada (e.g., Home Office, 2015; The Council of the European Union, 2015; US Department of State, 2014). Under the autocratic leadership of Velupillai Prabhakaran, the LTTE carried out a 30-year struggle against the Sinhalese majority in Sri Lanka, during which thousands of civilians were killed (including heads of state, generals, politicians, journalists and academics). In 2009, the Sri Lankan military decisively defeated the LTTE. The roughly 12,000 surrendered LTTE members were detained in rehabilitation facilities where comprehensive efforts were made toward deradicalizing them, and preparing them for reintegration into Sri Lankan society. Individuals were assigned to rehabilitation centers based on the severity of their crimes. In the present analysis, we particularly sampled high-risk individuals detained in the Boosa detention facility in Galle, a coastal city in Southern Sri Lanka.

This risk category included individuals with high status within the LTTE and who had perpetrated violence and killing, including the so-called Black Tigers, an elite cadre of suicide bombers responsible for more than 330 suicide missions.

As in Study 1, participants completed a series of questionnaires that tapped personal loss of significance (LoS), need for closure (NFC), and extremism. Extremism measures in this case assessed support for the violent struggle against the Sri Lankan population. Polling in Sri Lanka during the time of the civil war demonstrates the extremity of this position. In 2000, most Sri Lankans surveyed (i.e., 65% of Sinhalese, 81% of Tamils) thought that the LTTE and Sri Lankan government should declare a cease-fire to end the violence (Centre for Policy Alternatives, 2001). Moreover, polling conducted in 2008 revealed that 77% of Tamils believed that the route to peace was through political negotiation. Only a very small minority (7.5%) thought peace could be attained through the LTTE defeating the Sri Lankan military (Centre for Policy Alternatives, 2008). Thus, although Tamils generally were dissatisfied with their perceived unequal status in Sri Lanka, violence as a means toward addressing this grievance was far from normative.

As in Study 1, here too we predicted an indirect effect of LoS on extremism through NFC. If our model is valid, feelings of shame experienced by our participants should be positively related to NFC, which should be positively related to the appeal of violent extremism.

Method

Participants

Our sample consisted of 237 (male) former members of the LTTE that, at the time, resided in the Boosa detention center in Galle, Sri Lanka.ⁱⁱⁱ Due to incomplete survey responses, demographic data was available for only 224 participants. The average participant was 32.63

years of age ($SD = 6.33$), and had resided in the facility for 34.58 months ($SD = 5.78$). In terms of relationship status, 47.8% were married, and 42.9% had children. The majority (83.9%) had a high school education or less. Participation was completely voluntary, and no compensation of any kind was offered to respondents.

Materials

LoS and NFC were assessed using the same respective 3-item ($\alpha = .62$) and 14-item ($\alpha = .85$) measures used in Study 1. Extremism was assessed as participants' attitudes toward and willingness to violently support the LTTE movement. Twelve items ($\alpha = .62$) were completed on a 7-point scale (1 = *Strongly disagree*; 7 = *Strongly agree*). The scale included items such as "Armed fight[ing] is a personal obligation of all Tamils today"; "Suicide bombers will be rewarded for their deed in the afterlife"; "The only way to teach a lesson to our enemies is to threaten their lives and make them suffer"; and "Sacrificing my life for the armed struggle is an act of heroism, not an act of terrorism".

Procedure

All instructions and survey materials were presented in participants' native language of Tamil. All scales went through a standard process of translation and back-translation to ensure that the items captured the intended meaning. The reported scales were part of a larger survey that contained other materials not pertinent to the present hypotheses. All measures relevant to the hypotheses of interest are reported. Researchers informed participants that the survey was anonymous, independent of government agencies or prison authorities, and that no benefit or penalty would result from agreeing or refusing to participate. Participants then provided standard informed consent. Researchers handed participants a questionnaire packet and a pen, and

remained in the area to answer any questions that may arise. Unarmed detention center staff supervised the process from the periphery.

Results

As in Study 1, we examined the indirect effect of LoS on extremism through NFC using the PROCESS macro and guidelines (Hayes, 2013). Analyses were conducted first on the full sample ($N = 237$), and only including the variables of interest (i.e., LoS, NFC, and extremism). Analyses were then repeated controlling for differences on the demographic variables of age, length of detainment, education level, and marital status. These analyses were restricted to the subset of the sample for which this information was available ($N = 224$).

Analyses on the full sample revealed a significant total effect of LoS on extremism; $b = .27, SE = .05, p < .001$. Analyses further revealed that LoS was related to increased NFC; $b = .27, SE = .11, p = .012$; and NFC was related to increased extremism; $b = .06, SE = .03, p = .048$. The direct effect of LoS on extremism remained significant; $b = .25, SE = .05, p < .001$. Ninety-five percent confidence intervals obtained with 10,000 bootstrapped resamples revealed that the indirect effect was significant; $CI [.0001, .044]$. Analyses on the reduced sample and including covariates revealed an identical pattern of results, and levels of significance were unchanged; $CI [.0004, .051]$. Results are depicted in Figure 2.

Discussion

The results of Study 2 replicated the indirect effect from Study 1 using a group of extremists with a different cultural background, representing an ethno-nationalist (rather than a religious) form of extremism. As predicted, we found that feelings of humiliation and shame were positively related to the need for closure, which in turn was positively related to endorsement of the violent struggle for a separate Tamil state. The results thus begin to speak to

the generalizability of our proposed model, as the same indirect pathway was found using two very different groups of extremists.

Note, however, that the proposed model should not be limited to individuals independently classified as extremists. According to our theorizing, anyone experiencing feelings of insignificance should experience a heightened need for closure, and extremism should subsequently increase in appeal as a mechanism for restoring certainty. Therefore, having demonstrated the effect amongst extremists, the remaining studies examined the model with samples drawn from populations not previously identified as extremist. Moreover, we designed the remaining studies to examine the same indirect effect demonstrated thus far, but using an experimental manipulation of loss of significance.

Study 3

Study 3 was conducted as the first step toward experimentally establishing the proposed indirect relationship wherein LoS induces NFC, which subsequently increases the endorsement of extremism. As such, we first aimed to design a manipulation of insignificance that would lead to increased extremism. To do so, we designed a LoS manipulation to mimic how LoS was assessed in the survey data, specifically, by asking participants to recall a time in which they felt ashamed, humiliated, and experienced people laughing at them. These are the same indicators of LoS measured in both the LTTE and ASG samples.

Extremism was operationally defined and measured as political extremism, and specifically, as the unwillingness to compromise on core tenets of one's political ideology. Although politics in the US have become increasingly partisan and polarized in recent decades, most Americans still fall somewhere in the political middle ground. The Pew Research Center (2014), for instance, assessed the extent to which individuals adhere strictly to the tenets of one

political party's agenda. The percentage of the population that resides at either of these poles has nearly doubled, from 11% in 2004 to 21% in 2014, yet most Americans (79%) are moderate, and endorse tenets of both political parties (Pew Research Center, 2014). Furthermore, when it comes to political compromise (i.e., Republicans and Democrats working together for the betterment of the country), the most frequent response of even those at the political extremes (!) is that the two parties should meet halfway (Pew Research Center, 2014). With this in mind, we created an extremism measure that assessed the unwillingness to compromise on core tenets of one's political ideology. We expected that in response to a manipulation of LoS, participants would report increased agreement with, and endorsement of, politically extreme attitudes consistent with their general worldviews.

Method

Participants

We recruited 196 (92 male, 102 female, 2 other) participants through various online websites ($M_{age} = 32.79$, $SD_{age} = 11.23$). Political orientations were distributed as follows: Democrat (57.7%), Republican (33.2%), and Libertarian (9.2%). Power analyses using a medium effect size ($f = .25$), two groups, and one covariate, revealed that a sample of 142 was needed to achieve 80% power.

Pilot Study

The first step in conducting Study 3 was to devise a manipulation that would induce feelings of insignificance. We created two conditions (LoS vs. control) of a cued recall task. Participants in the LoS condition were asked to "think back to a situation in which you were feeling humiliated and ashamed because (you felt like) people were laughing at you" and provide a "detailed description of who humiliated you, what this (these) person(s) did, and how you felt

during this experience.” Participants who had never experienced such a situation were further instructed to describe a similar situation that someone they cared deeply about, like a child or a spouse, may have gone through. In the control condition, participants recalled the last time they watched television and provided a detailed description of what they watched and how this made them feel.

A pilot study ($N = 161$) was conducted to check the effectiveness of this manipulation. After providing informed consent, participants were randomly assigned to one of the two cued recall tasks. Participants then completed a revised version of the PANAS (Watson et al., 1988) that included a series of items designed to measure insignificance: *ashamed*, *humiliated*, and *insignificant* ($\alpha = .86$). As expected, participants in the LoS condition ($M = 1.87$, $SD = 1.02$) indeed felt more insignificant than participants in the control condition ($M = 1.25$, $SD = .60$; $F(1, 159) = 21.63$, $p < .001$, $\eta^2 = .12$).

Main Study

Satisfied that the manipulation operated as intended, we conducted a study to examine if this manipulation would indeed induce political extremism. After providing informed consent, participants completed a demographic survey in which they indicated their political orientation. Participants were asked to self-identify as either a “Democrat,” “Republican,” or “Libertarian.” Participants were then randomly assigned to one of two cued recall tasks.

In accordance with the general process model of threat and defense (Jonas et al., 2013; see also Pyszczynski, Greenberg, & Solomon, 1999; Wichman, Brunner, & Weary, 2008), a delay period was inserted between the LoS manipulation and the measurement of extremism. We specifically employed a commonly used delay period (e.g., Proulx, Heine, & Vohs, 2010) during which participants responded to the Positive and Negative Affect Schedule (PANAS; Watson,

Clark, & Tellegen, 1988). The LoS manipulation highlights a discrepancy between the positive way individuals generally view themselves, and the less positive way brought up by the manipulation. This discrepancy leads to an immediate increase in feelings of uncertainty, that can be dealt with in two ways. First, proximal, avoidance-based defenses can be employed that deal *directly* with the discrepancy and remove it from focal attention, for instance, by distancing oneself from the importance of the threatened domain. Secondly, there are approach-based, distal defenses that deal with the discrepancy *indirectly*. Like the measure of extremism employed herein (i.e., increased endorsement of non-normative political stances), these compensatory reactions deal with the induced uncertainty in a manner unrelated to the threatened domain (i.e., offensive claims about participants' social identity). As previous research demonstrates, these latter defenses occur only after a delay (e.g., Jonas et al., 2013; Pyszczynski et al., 1999).

Participants then responded to the political extremism measure. All participants read an article that discussed core tenets of their political ideology. For Democrats, the article started with a quote from John F. Kennedy about social welfare, and elaborated on how social welfare for all and government regulation are key tenets of liberal ideology. For Republicans and Libertarians, the article started with a quote from William F. Buckley Jr. about limited government, and elaborated on how fiscal conservatism (i.e., limited government, free markets, the value of individual work effort) lies at the core of conservative ideology (cf. Libertarian National Committee, 2014; Republican National Committee, 2014). In both cases, participants were told that “the previous text described what it means to be a true conservative (liberal). These ideals represent the core beliefs for which a conservative (liberal) stands. There is no ambiguity in these issues. There is but a firm line drawn in the sand that cannot and should not be crossed not matter the circumstances.” Participants used 7-point scales to indicate the extent

to which they agreed with (1 = *Strongly disagree*, 7 = *Strongly agree*) and personally endorsed (1 = *Not at all*, 7 = *Totally*) the sentiment that they should never compromise their political beliefs. Upon completion, participants were debriefed about the true nature of the study. All measures relevant to the hypotheses of interest are reported.

Results

We examined whether the LoS manipulations increased political extremism as predicted. The agreement and endorsement items were collapsed into a single extremism composite because they were positively correlated; $r(195) = .87, p < .001$. Because there were few Libertarians in the sample ($n = 18$), and because Libertarians and Republicans completed the same dependent measure, we collapsed them into a single group of Fiscal Conservatives. A Loss of Significance Condition (LoS vs. control) \times Political Orientation (Liberal vs. Conservative) ANOVA was conducted on the extremism composite. Both the main effect of Political Orientation and the LoS Condition \times Political Orientation interaction were non-significant ($ps > .182$). Only the main effect of LoS condition was significant, such that participants in the LoS condition ($M = 5.19; SE = .17$) expressed significantly greater extremism than participants in the control condition ($M = 4.63; SE = .17$); $F(1, 192) = 5.52, p = .020, \eta^2 = .03$.

Discussion

These findings provide support for our proposed causal pathway, in demonstrating that a manipulation of significance loss can increase extreme attitudes, regardless of participants' political orientation. These results, however, are inconclusive regarding whether this effect is specific to extremism, or merely tapping general worldview defense (e.g., Greenberg et al., 1990; Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). Worldview defense is defined as increased endorsement of one's cultural beliefs, and has typically been measured in response to

various threats (e.g., death, meaning, uncertainty, compensatory control). Extremism, on the other hand, does not involve endorsement of any belief or value pertinent to one's cultural worldview, but only those beliefs and values that deviate from normative, typically held, beliefs. We reasoned that a manipulation designed to induce feelings of insignificance should only increase endorsement of the latter, and not the former, type of belief. This notion was tested in Study 4.

More importantly, Study 3 only examined the direct pathway between insignificance and the endorsement of extremism. We designed Study 4 to examine the full mediation model, including a manipulation of LoS, measurement of NFC, and measurement of extremism.

Study 4

Study 4 again examined extremism within the context of political extremism in the United States. As opposed to measuring unwillingness to compromise on important ideological values (as we did in Study 3), we measured the extent to which participants endorsed non-normative ideals of their political party. We identified various political issues on which conservatives and liberals take differing stances (e.g., abortion). We then created items that reflected moderate and extreme perspectives on these issues (i.e., supporting abortion under rare circumstances like rape (moderate), vs. abolishing all forms of abortion (extreme conservative) vs. supporting all forms of abortion, such as late-term abortion (extreme liberal)). This enabled us to examine whether a manipulation of insignificance would increase only extreme beliefs, or both extreme and moderate positions.

Between the LoS manipulation and the measurement of extremism, participants completed a NFC scale, enabling us to test the full mediation model. We expected to find a significant indirect effect when measuring extreme beliefs, such that the manipulation of

insignificance would increase endorsement of extremism by way of increasing the NFC. We expected one of two possible results when analyzing moderate beliefs, both of which would be consistent with our model. First, it is possible that the endorsement of moderate beliefs would be unaffected by the manipulation, and unrelated to NFC. Second, we envisioned the possibility of finding an indirect effect in the opposite direction, such that the LoS manipulation would increase NFC, which would be related to *lesser* endorsement of moderation. Indeed, moderation by definition is more ambiguous, and absent the clear-cut flavor that would appeal to one who searches for certainty. If the LoS manipulation does indeed increase the NFC, it may be expected to decrease endorsement of moderate beliefs.

Method

Participants

Participants were 344 (108 female, 236 male) Americans recruited from Amazon Mechanical Turk ($M_{\text{age}} = 38.29$, $SD_{\text{age}} = 13.02$). Political orientations were distributed as follows: Democrat (68.6%) and Republican (31.4%).^{iv} Fritz and MacKinnon (2007) present guidelines for sample size based on predicted effect sizes of the (a) predictor to mediator pathway, and (b) the mediator to outcome pathway. Based on previous results found by our research group, we expected a medium effect for pathway A. Based on the relations between NFC and extremism in Studies 1 and 2, we expected an effect that was small to medium for pathway B. Using a small effect on this latter pathway would suggest a sample of 391, whereas using a small-medium effect would suggest a sample of 116.

Pilot Studies

To demonstrate that our effects are specific to the endorsement of extreme beliefs, and not merely tapping worldview defense, we created a scale that assessed endorsement of both

moderate and extreme political beliefs. Items were selected through a pilot study ($N = 78$). Eleven political topics (e.g., abortion, gun control, climate change, government regulation, health care) were selected. For each topic, three items were created to reflect an extreme liberal stance on this topic, an extreme conservative stance, and a moderate stance. In all, participants responded to 33 items. For each item, participants indicated if they thought most Americans would perceive the item as “moderate” or “extreme.” Moderate beliefs were defined for participants as political views that are “endorsed by many individuals,” whereas extreme beliefs were defined as “polarizing.” We then calculated the percentage of respondents who rated each item as extreme. The six most extreme liberal items, the six most extreme conservative items, and the six items considered by most to be moderate, were selected for use in the scale. The items, along with the percentage who rated them as extreme are presented in Table 2.

In a second pilot study ($N = 97$), we aimed to conceptually replicate Study 3 using our newly devised scale. After providing informed consent, participants completed a brief demographic questionnaire where they reported their political orientation. They then completed the same LoS manipulation used in Study 3, followed by a delay period, and indicated their level of agreement (1 = strongly disagree, 7 = strongly agree) with the 18 items selected in the first pilot study. For liberal participants, extremism was calculated as the mean composite to the six liberal items ($\alpha = .77$). For conservatives, it was the mean composite of the six conservative items ($\alpha = .83$). For all participants, a mean composite was calculated for the six moderate items ($\alpha = .66$). A repeated-measures ANCOVA was conducted with condition (LoS vs. control) as a between-subjects factor, belief type (extreme vs. moderate) as a within-subjects factor, and political orientation as a covariate. Results revealed a significant Condition \times Belief interaction; $F(2, 93) = 6.04, p = .016, \eta^2 = .06$. A series of pairwise comparisons revealed that, as expected,

participants who recalled a situation in which they felt insignificant expressed higher agreement with extreme political beliefs ($p = .028$) but not moderate political beliefs ($p = .149$), relative to those in the control condition (see Table 3).

Main Study

In the main study, we examined the full model that included the indirect effect of an LoS manipulation on endorsement of extreme (or moderate) beliefs, through NFC. After providing informed consent, participants completed a brief demographics questionnaire that included a measure of political orientation. They then completed the same LoS manipulation. The delay period that had been employed previously was occupied now with filling out an NFC scale designed to assess state changes in the need for cognitive closure. Because the NFC scale is intended as a measure of individual differences, it was subtly revised to increase sensitivity to the LoS manipulation. Participants were instructed that “the best answer is what you feel is true of yourself at this moment, instead of how you would generally act.” Some of the 14 items ($\alpha = .83$) were also revised to remove references to general ways of acting. For instance, the item “Generally, I do not search for alternative solutions to problems for which I already have a solution available” was changed to “I would not search for alternative solutions to problems for which I already have a solution available.”

After completing the NFC scale, participants completed the measure of extreme and moderate political beliefs. For liberal participants, extremism was calculated as the mean composite to the six liberal items ($\alpha = .72$). For conservatives, it was the mean composite of the six conservative items ($\alpha = .83$). For all participants, a mean composite was calculated for the six moderate items ($\alpha = .61$). All measures relevant to the hypotheses of interest are reported.

Results

We once again examined the indirect effect of LoS on extremism through NFC using the PROCESS macro and guidelines (Hayes, 2013). We first conducted a moderated mediation model with political orientation as moderator. Because we did not have specific predictions as to which pathway of the model political orientation might moderate, we allowed it to moderate all pathways simultaneously (PROCESS Model 59, Hayes, 2013). None of the interactions were significant, so we conducted a traditional mediation model and included political orientation as a covariate. The total effect of LoS condition on endorsement of extreme political beliefs was not significant ($p = .828$). Analyses further revealed that participants in the LoS (vs. control) condition reported higher NFC; $b = .24$, $SE = .08$, $p = .003$; and NFC was related to increased extremism; $b = .17$, $SE = .08$, $p = .028$. The direct effect of LoS condition on extremism remained non-significant ($p = .892$). Ninety-five percent confidence intervals obtained with 10,000 bootstrapped resamples revealed a significant indirect effect; $CI [.006, .100]$. Analyses excluding political orientation as a covariate revealed the same pattern of results and levels of significance; $CI [.011, .113]$. Results are depicted in Figure 3.

We next conducted mediation analyses using *moderate* political beliefs as the outcome variable. The total effect was non-significant ($p = .710$). As with extreme beliefs, participants in the LoS condition reported higher NFC ($p = .003$), but NFC was negatively related to the endorsement of moderate beliefs; $b = -.12$, $SE = .06$, $p = .046$. The direct effect remained non-significant ($p = .961$). Ninety-five percent confidence intervals obtained with 10,000 bootstrapped resamples revealed a significant indirect effect; $CI [-.077, -.002]$. Analyses excluding political orientation as a covariate revealed the same pattern of results and levels of significance; $CI [-.099, -.008]$. Results are depicted in Figure 3.

Discussion

These findings are critical in two regards. First, they affirm the specificity of the effect of insignificance on extreme beliefs, and not as a specific form of worldview defense. Participants who recalled a situation in which they felt insignificant, reported higher NFC, which was subsequently related to increased endorsement of extreme political beliefs, and decreased endorsement of moderate political beliefs. It thus appears that, because extreme beliefs are non-normative in character, they are specifically suited to fulfilling the need for closure that is induced by feelings of insignificance. Indeed, participants eschewed (!) moderate beliefs, even though these beliefs enabled them to affirm their worldview, because their moderation rendered them ineffective at reducing the uncertainty instated by feelings of insignificance.

Second, these results provide clear evidence for the causal pathway of our model. Because we manipulated, as opposed to measured, feelings of insignificance, we are confident that LoS leads to an increased need for closure, which subsequently increases the appeal of extremism. These findings build upon the correlation evidence of Studies 1-2 to provide a clear picture of the proposed pathway from insignificance to extremism through NFC.

General Discussion

Four studies provided evidence that personal feelings of insignificance lead to increased extremism through increased need for closure. Studies 1 and 2 surveyed former extremists in detention, and found that self-reported feelings of insignificance were related to an increased need for cognitive closure. In turn, NFC was positively related to extreme attitudes in the contexts in question. Study 4 also tested the proposed model, but under conditions of experimental manipulation and using an American sample. We found that participants exposed to a manipulation that induced feelings of insignificance (see Study 3), reported significantly higher levels of NFC, which were subsequently related to increased endorsement of extreme

political beliefs (Study 4). Study 4 further demonstrated an indirect effect in the opposite direction when examining endorsement of moderate political beliefs. Taken together, these studies show that extreme beliefs increase in response to feelings of insignificance, and do so uniquely because they are particularly suited to the need for closure created when one feels insignificant. These findings build on recent research (e.g., Jasko et al., 2016, Webber et al., 2015; 2017) in support of the tenets of the significance quest theory of radicalization (e.g., Kruglanski et al., 2014, 2017), and provide the first evidence speaking to the process by which feelings of insignificance have this effect.

Although Studies 1, 2, and 4 found support for the same indirect effect, it is important to acknowledge subtle differences among these studies. In Studies 1 and 4, the indirect effect occurred in the absence of a significant total effect. The absence of the total effect suggests that there may be two different indirect pathways from LoS to extremism, that operate in opposite directions, in effect, canceling out the total effect (e.g., Hayes, 2009; MacKinnon, Krull, & Lockwood, 2000). In other words, this suggests that although LoS increases NFC, which is positively related to extremism, it may also increase another variable that is negatively related to extremism. For instance, feelings of insignificance could likewise be related to increased feelings of sadness, which have been shown to increase withdrawal (e.g., Frijda, Kuipers, & Ter Schure, 1989) and disengagement with collective causes (e.g., Smith, Cronin, & Kessler, 2008).

In Study 2, on the other hand, the indirect effect occurred alongside a significant total effect, but the direct effect between LoS and extremism remained significant after controlling for NFC. This suggests that factors other than NFC are likely contributing to increased extremism in response to LoS. This is to be expected, as significance quest theory has proposed additional mechanisms by which feelings of insignificance can increase the appeal of extremism (e.g.,

Webber & Kruglanski, 2016). Pertinent is research showing that insignificance is related to increased identification with one's ingroup (Kruglanski & Orehek, 2011). The intergroup context was likely most salient in Study 2, as a core component of the LTTE narrative concerns discriminatory practices that favored the ethnic majority Sinhalese, and thus created an avenue by which increased ingroup identification might contribute to extremism. Thus, although the present studies have clearly implicated NFC as an important mechanism that leads people who feel insignificant down a pathway toward extremism, NFC should not be viewed as the sole factor in this process.

We also note that the samples recruited in Studies 1 and 2 are of a less than ideal size for testing an indirect effect of the size reported within this manuscript. This is unfortunately the result of real-world constraints, and larger samples would have been collected if possible. Limited numbers of terrorist inmates were held in the two facilities in Sri Lanka and the Philippines. Our best efforts were employed to survey the entire populations of these facilities. Although the sample sizes can be viewed as a limitation, the samples themselves are highly unique and enable us to speak directly to issues of radicalization and terrorism. In heeding the warning of researchers before us (Atran, 2010; Ginges et al., 2011), we hope that our mixed-methods approach of both field and experimental studies provides an example of how social psychologists can demonstrate their relevance to the study of extremism and terrorism (conversations often dominated by researchers from fields other than psychology).

Importantly, the present studies provide convergent support for the proposed indirect effect using (a) different populations of participants, (b) different contents of extreme attitudes, and (c) different methodologies. The present samples varied systematically in their risk-level for extremism, ranging from individuals imprisoned for their affiliation with noted terror

organizations (i.e., ASG and LTTE), to everyday Americans who were neither members of, nor at risk of joining, extreme groups. Likewise, the form of extremism captured in each study tapped context-specific attitudes that reflected non-normative beliefs for each of the respective research venues. Thus, the proposed indirect model held when assessing Islamic extremism, support for violence in service of ethno-nationalist goals, and support for polarized political views. Finally, the indirect pathway was supported not only using correlational designs that measured the variables of interest and established their relations using statistical models, but through experimental designs that manipulated feelings of insignificance and established the proposed causal pathway. These features increase confidence in the generality of the hypothesized process, given the convergent support for our model in settings that were either high on external validity (i.e., surveys among extremists) or high in internal validity (i.e., controlled, experiments).

Moreover, because the studies examined the process among imprisoned terrorists who had already radicalized (Studies 1-2) and individuals who had not (Studies 3-4), the results speak to radicalization processes at two different stages. Studies 3-4 refer to radicalization as it is most commonly discussed. That is, individuals grapple with some personal or collective disadvantage that motivates them to leave the mainstream, and either enlist in terrorist organizations or align with the goals of terrorist organizations, and carry out individual attacks inspired by these extremist groups. Studies 1-2 refer to radicalization as it commonly occurs in prison. Here, already radicalized individuals become even more hardened in their resolve as they face humiliating conditions and restrictions on personal freedoms that accompany prison life. The present studies implicate feelings of insignificance-induced need for closure in both forms of radicalization.

Situating Uncertainty within the Radicalization Process

The present studies follow prior attempts at understanding the relationship between uncertainty and extremism. Hogg and colleagues, in their work on uncertainty-identity theory (e.g., Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007) demonstrate how *self-uncertainty* increases the appeal of extreme groups. Likewise, studies conducted by van den Bos and colleagues using the uncertainty management model (e.g., van den Bos et al., 2007) support the relationship between *personal uncertainty* and extremism. And finally, McGregor and colleagues, in their work on reactive approach motivation (e.g., McGregor et al., 2010), demonstrate how *anxious uncertainty* increases extremism, for instance, in the form of religious zeal.^v Where the present approach makes a novel contribution, is in its use of both field studies with actual violent extremists and experimental designs to identify the loss of personal significance as an important antecedent of uncertainty feelings that subsequently foster extremism. This identifies a factor of pervasive real world significance in its relevance to terrorism and political extremism, both of which threaten security and stability worldwide.

Though the present studies offer converging support for the proposed pathway from significance loss to extremism by way of need for closure, several remaining questions could be profitably addressed in subsequent research. Given that we focused on the appeal of extreme *ideologies*, future work should examine if significance loss also increases the appeal of extreme *groups*. Indeed, uncertainty-identity theory (Hogg, 2007), proposes that individuals are drawn to extreme or radical groups, because identification with these groups provides a strong mechanism for uncertainty reduction. Extreme groups are particularly adept at reducing uncertainty because they tend to be high on entitativity, or “groupness”—they have high internal homogeneity, clearly defined group structures, and common goals that enjoy wide consensus. By thus

identifying as a member of these groups, one is clearly able to categorize herself according to the highly structured group schema applied to all group members. The result could constitute a potent, and cognitively available mechanism for uncertainty reduction.

Furthermore, ideologies that offer uncertainty reduction *and* a clear-cut way of restoring significance may be preferred to ideologies that offer only one or the other. Although the present research focused on how significance loss increases the appeal of more extreme attitudes and views, we also suggest that radical ideologies are adopted because they offer certainty and a clear, unambiguous path toward significance restoration. Future studies may empirically examine whether radical ideologies have an advantage over other means that provide certainty only (e.g., well-established explanations of events or phenomena) or only significance, but not both (e.g., volunteering for a charity one cares about).

Finally, the present studies focused specifically on personal forms of significance loss. Kruglanski and colleagues (2014, 2017), however, propose that significance loss can also be induced by circumstances that impact the collectivities to which one belongs. Indeed, these collective humiliations have been linked to extreme behavior (e.g., Victoroff, Adelman, & Matthews, 2012), and some scholars suggest they even are more influential in one's pathway toward becoming a radical (Sageman, 2008) than are the more personal forms of insignificance that were examined in the present analysis. On the other hand, our own research (Jasko, Webber, & Kruglanski, 2017), also suggests that feelings of collective insignificance may be more related to extreme beliefs among people who belong to a radical social network, but not among those who do not.

We also anticipate that the motivating influence of collective insignificance is strongest on those who identify strongly with the humiliated collective, and have likely internalized the

humiliation and experience is as something very personal (Tajfel & Turner, 1986). This would be consistent with the way in which foreign fighters are recruited. Malet (2013) examined foreign fighter recruitment strategies throughout history, and found that they typically appealed to individuals with a transnational identity. That is, recruiters (cleverly) frame distant civil conflicts as posing a threat to a large transnational identity that the individual harbors. Islamic extremists in Syria and the Middle East refer to the “Ummah”, a united global community of Muslims, because the foreign members of the Ummah should internalize the struggles of their Muslim brothers and sisters in the Middle East as their own (Karagiannis, 2013). Moreover, Malet found these strategies to be most effective among individuals who were highly active in institutions related to the transnational identity group (i.e., individuals highly identified with their Muslim identity), but who were also marginalized in the greater society as members of that identity group (which experience would induce feelings of insignificance). In other words, combining a strong group identity with a humiliating blow against that identity creates a strong motivational drive to join extreme organizations, because they offer to quell one’s need for certainty (e.g., Hogg, 2007).

Implications

We started this manuscript with the observation that political extremism is thriving even in the face of staunch military efforts. The war on terror has been going for over a decade, major leaders of terror organizations have been dispatched through military strikes and drone attacks, the flow of finances to terror groups has been severely disrupted, yet the threat of terrorism still looms large. Defeating this threat will likely require interventions that operate on the psychological level, ones aimed at preventing terror groups from effectively winning the hearts and minds of those they try to recruit into their ranks.

How can the present findings inform policies aimed at counter-radicalization of at-risk individuals or a deradicalization of those who already had succumbed to extremism? Our analyses focused on two key psychological constructs relevant to this issue—feelings of insignificance and a need for closure or certainty—that can potentially be co-opted to reverse the process. Across the present studies, we found that feelings of insignificance increased the appeal of extreme ideology by way of increasing need for closure. We proposed that significance-loss inducing circumstances make salient a discrepancy between the positive way in which one wishes to perceive oneself, and the negative way suggested by the humiliating circumstances. This discrepancy between desired and suggested selves is experienced as an aversive uncertainty, which one is motivated to eliminate by seeking out closure via embracing extreme ideologies and/or joining extreme groups.

For one, this analysis suggests that some reactions to acts of terror may paradoxically fuel subsequent terrorist behavior. This includes surveillance or racial profiling methods that are likely to be perceived as discriminatory among Muslim immigrants residing within their host nations. It also includes blatant discriminatory practices like banning Muslims from entering a country, as recently proposed by then American Presidential candidate, Donald Trump, or by vitriolic rhetoric espoused by political and media pundits that disparages terrorists and the ideologies from which their brand of extremism is derived. Such reactions should only further marginalize these individuals, increase feelings of insignificance, and motivate masses to heed the call of terrorist organizations. Indeed, recent research conducted with Muslim immigrants in the US suggests this to be the case (Lyons-Padilla, Gelfand, Mirahmadi, Farooq, & van Egmond, 2015).

On a more positive note, our analyses suggest that efforts aimed at reducing discrepancy-based uncertainty by increasing one's level of significance could be effective at curbing the subsequent appeal of extremism. Recall that after the fall of the LTTE to the Sri Lankan military, roughly 12,500 LTTE fighters were detained in rehabilitation facilities aimed at deradicalizing these individuals and preparing them for reintegration in society. Several components of these programs could be perceived as providing former LTTE members with skills and tools for significance restoration. These components were aimed at education, vocational training to provide the skills needed for employment upon release, and psychological counseling. Webber and colleagues (2017) examined the effectiveness of these programs across a one-year period. Extremism, measured as support for the ideological goals of the LTTE and the use of violence toward attaining these goals, decreased over time as a function of reduced insignificance. That is, if rehabilitation increased the extent to which a former extremist felt significant, it likewise reduced that individual's endorsement of extremism.

Whereas restoration of significance seems applicable in rehabilitation programs aimed at the deradicalization of incarcerated extremists, it seems unfeasible with respect to preventing large-scale instances of humiliation or discrimination directed at broad categories of people (e.g., Muslims, Arabs, etc.). In such circumstances, we can use our knowledge of humiliation-based certainty seeking to offer at-risk individuals alternative, certainty-providing ideologies that oppose violence rather than condone it. One way of accomplishing this is to present prosocial ideologies in a confident manner and an assured style that would appeal to individuals whose need for closure is elevated. Evidence suggests that individuals are more likely to be convinced by communicators who deliver their messages decisively and assuredly (Maslow, Yoselson, and London; 1971; Miller, Maruyama, Beaver, & Valone, 1976; London, 1973). Moreover, when

communicators express high confidence in their advice, others are more likely to follow it (Sniezek & van Swol, 2001). More importantly, the effect of communicator decisiveness is more pronounced among individuals high in NFC (Orehek et al., 2010). Thus, the appeal of extreme messages following significance loss can be countered by providing alternative means toward certainty restoration. In fact, according to goal systems theory (Kruglanski et al., 2002), this would create a situation of equifinality—two means (ideologies) that serve the same goal (certainty-restoration). Theoretically, these two means should then become substitutable with one another, and the adoption of other (non-violent means) should thus reduce the appeal of the extreme ideology. These implications of the present findings may offer a way of injecting the science of radicalization into concrete efforts to counter this pernicious phenomenon worldwide.

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Table 1. Islamic extremism items used in Study 1.

Item	Percent Extreme
Suicide bombers will be rewarded for their deed by God.	82%
There are many different ways of interpreting Islam. (reverse-coded)	79%
Killing is justified when it is an act of revenge.	77%
All countries that are not ruled by Muslims and do not observe sharyiah (Islamic law) should be considered darul harb (abode of war).	77%
Islam should be practiced in the strictest way, regardless of situations or circumstance.	76%
In recent years, some people called on all Muslims to join in Armed Jihad against the United States and the West. To what extent do you support or oppose this call to armed Jihad?	74%
Qital (fighting) is the only way to conduct Jihad.	72%
True Muslims must listen (As-Sam'u) to the instructions of religious leaders and obey them without question (At-Tha'ah).	72%
Armed Jihad is a personal obligation of all Muslims today.	70%
Muslims who live in non-Muslim countries are obligated to immigrate to Muslim countries.	70%
True Muslims should adhere strictly to the literal meaning of the Quran.	68%

Note. Percentage extreme represents the percentage of participants surveyed in the pilot study that indicated the item was extreme (vs. moderate).

Table 2. Political belief items used in Study 4.

Category	Item	Percent Extreme
Liberal	Control of all corporations should be transferred to the government.	82%
	There should be a ban on the sale of all firearms.	80%
	All social and economic planning should be transferred to the government, rather than the free market.	76%
	All forms of abortion, including late-term abortions (performed during later stages of pregnancy) should be allowed.	68%
	The United States needs to drastically increase the number of Syrian refugees allowed into the country.	63%
	All undocumented immigrants currently residing within the US should have access to the same educational, health, and legal benefits given to American citizens.	58%
Conservative	All undocumented immigrants currently residing in the US should be immediately deported to their home countries.	74%
	Abortion is the murder of a human being and should not be allowed.	73%
	Syrian refugees should be prevented from entering the United States.	68%
	All services provided by the government should be dismantled so they could be better provided by private companies.	67%
	There should not be any restrictions on Americans' abilities to acquire firearms.	65%
	Marriage can only be the union of one man and one woman.	65%
Moderate	The private sector and the government are each better at providing certain goods and services, and we need both.	12%
	The free market generally works, but some government regulation is needed to ensure the economy functions properly.	13%
	Some government assistance and intervention is required to help people get college degrees.	18%
	Due to the possibility of errors in the judicial process, criminals sentenced to the death penalty should have the right to exhaust all appeals options.	20%
	Same-sex couples that cannot marry should be entitled to some benefits afforded to straight married couples	24%

Abortions should be allowed in rare cases where the mother's life is in danger, or the pregnancy was the result of rape. 26%

Note. Percent extreme represents the percentage of participants surveyed in the pilot study that indicated the item was extreme (vs. moderate).

Table 3. Means (and standard deviations) for all dependent variables in Pilot Study 2.

Measure	LoS (N = 47)	Control (N = 49)
Extreme beliefs	4.23 (1.17) _a	3.71 (1.14) _b
Moderate beliefs	5.27 (1.07) _a	5.53 (0.92) _a

Note. Within each row of the table, means with differing subscripts differ significantly from one another.

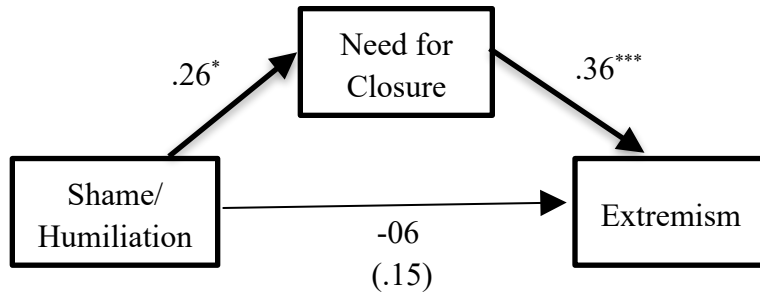


Figure 1. Indirect effect of loss of significance (shame/humiliation) on extremism through increased need for closure (Study 1). Coefficients are unstandardized. The total effect is presented in parentheses. * $p < .05$, *** $p < .001$.

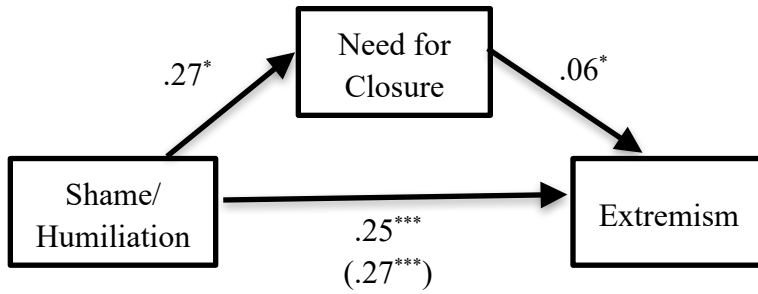


Figure 2. Indirect effect of loss of significance (shame/humiliation) on extremism through increased need for closure (Study 2). Coefficients are unstandardized. The total effect is presented in parentheses. * $p < .05$, *** $p < .001$.

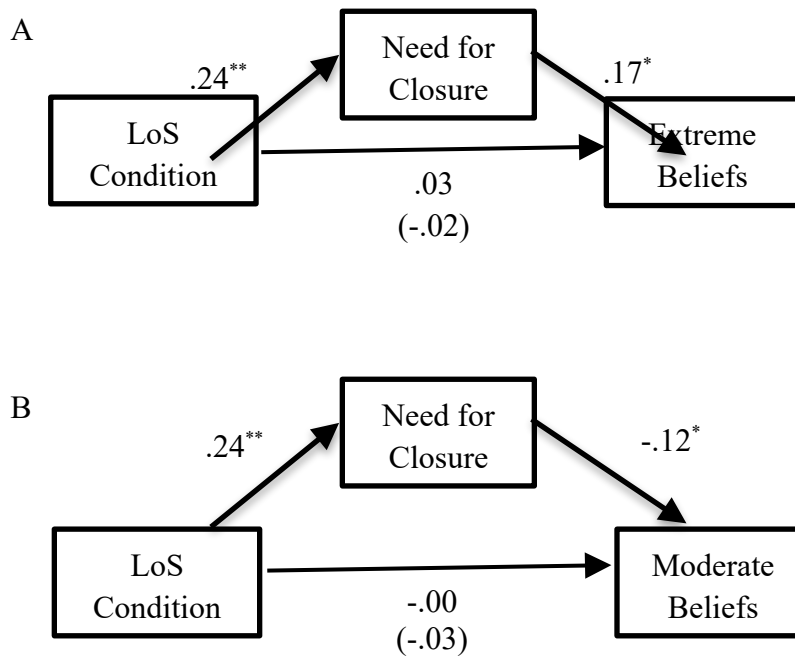


Figure 3. Indirect effect of loss of significance on extreme (Panel A) and moderate (Panel B) political beliefs through increased need for closure (Study 4). Coefficients are unstandardized. Total effects are presented in parentheses. * $p < .05$, ** $p < .01$.

Footnotes

ⁱ In this vein, honor is tantamount to significance, humiliation and injustice represent significance loss, vengeance represents a restoration of one's compromised significance, loyalty to leader represents a way of gaining significance (in his or her eyes), entry to heaven represents a reward in recognition of one's significance, etc.

ⁱⁱ Alternative mediation pathways were tested. None of these alternative models were significant across both field samples (Studies 1-2).

ⁱⁱⁱ Data used in Study 2 were published previously (Belanger, Caouette, Sharvit, & Dugas, 2014) to address a different research question. No duplicate findings are presented.

^{iv} Unlike in Study 3, Libertarians were not included in Study 4. The political issues around which our extremism measure was created pertained to both social and fiscal issues. The conservative items were thus not applicable to Libertarians.

^v It should be noted that this measure of religious zeal (i.e., enthusiasm or dedication to one's own religion) is not identical to how we define extremism, and may not represent a non-normative belief.