The Psychology of Martyrdom: Making the Ultimate Sacrifice in the Name of a Cause

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Martyrdom is defined as the psychological readiness to suffer and sacrifice one's life for a cause. An integrative set of 8 studies investigated the concept of martyrdom by creating a new tool to quantitatively assess individuals' propensity toward self-sacrifice. Studies 1A–1C consisted of psychometric work attesting to the scale's unidimensionality, internal consistency, and temporal stability while examining its nomological network. Studies 2A–2B focused on the scale's predictive validity, especially as it relates to extreme behaviors and suicidal terrorism. Studies 3–5 focused on the influence of self-sacrifice on automatic decision making, costly and altruistic behaviors, and morality judgments. Results involving more than 2,900 participants from different populations, including a terrorist sample, supported the proposed conceptualization of martyrdom and demonstrated its importance for a vast repertoire of cognitive, emotional, and behavioral phenomena. Implications and future directions for the psychology of terrorism are discussed.

Keywords: martyrdom, self-sacrifice, terrorism, cause, meaning

I have cherished the ideal of a democratic and free society in which all persons will live together in harmony and with equal opportunities. It is an ideal for which I hope to live for and to see realized. But, My Lord, if it needs be, it is an ideal for which I am prepared to die.

—Nelson Mandela

Dying for a cause? The very concept seems perplexing and bizarre. How could people in their right mind be willing to sacrifice their lives for an idea? Are we not hedonistic beings created to seek pleasure and avoid pain and motivated to survive above all? Yet the phenomenon of self-sacrifice is real enough, and suicide bombing seems to have become terrorists' weapon of choice in recent years. Though social scientists' interest in the psychology of self-sacrifice has been accentuated as of late (e.g., Gambetta, 2006; Kruglanski, Chen, Dechesne, & Fishman, 2009; Kruglanski et al., 2014; Pape, 2006), the idea of self-sacrifice or *martyrdom* is hardly new: Accounts of individuals dying on the altar of religious and political ideologies existed long before the tragedy of 9/11, the Japanese kamikaze of World War II, or even the crucifixion of Jesus Christ millennia ago. Yet it appears that no quick and easy answer can be conjured up to explain this phenomenon.

In initial attempts to understand the motivational underpinnings of self-sacrifice, social scientists have put considerable emphasis on individual characteristics or situational circumstances (e.g., political oppression, poverty, or poor education). In time, it has become increasingly clear that neither approach is satisfactory: Profiling predicated on demographics, level of education, and gender has been discredited (Atran, 2003), as has the notion that terrorists suffer from mental illness of some sort (see Post et al., 2009). A different approach addressed the problem of suicide terrorism mainly in terms of sweeping social forces (e.g., social networks) conducive to individuals' radicalization (Sageman, 2004, 2008). Over the years, the psychology of terrorism has attempted to fuse both perspectives in an interactionist approach giving particular attention to the link between individual- and group-level processes. One such recent attempt is found in the work of McCauley and Moskalenko (2011), which highlighted several individual-level variables considered to promote adherence to terrorist groups and their respective ideologies. Though of considerable interest, to afford it generality and broad applicability, this approach would benefit from the development of specific psychometric tools that measure individuals' readiness to self-sacrifice for their ideological cause. The purpose of the present work is to describe the development of such a tool and to situate

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the construct of martyrdom among other established psychological constructs.

Accordingly, we introduce a scale that measures individuals' disposition to forfeit things of high value (e.g., wealth, relationships, life) in order to support an important cause. Along the journey, we examine the antecedents of self-sacrifice and its consequences on a vast repertoire of cognitive, emotional, and behavioral phenomena. The primary aim of the *Self-Sacrifice Scale* is to address an important gap in the current literature on the psychology of terrorism (and social psychology at large) by providing a useful research tool to reliably predict self-sacrificial behaviors. However, as is demonstrated below, the willingness to suffer and die for a cause is not exclusive to socially undesirable acts such as suicide terrorism. Many socially desirable behaviors also involve individuals making great sacrifices. For example, most parents would consider doing unimaginable things to protect their offspring. Soldiers of many nations sacrifice their lives to defend their country and/or its way of life. Police officers and firefighters regularly put their lives at risk in order to protect others out of a sense of duty. Activists in nonviolent social movements around the world often risk being arrested and becoming targets of violence, yet persist in their actions out of a deep devotion to advancing their causes. In all these instances, the readiness to self-sacrifice is the common motivational denominator.

In sum, then, the readiness to self-sacrifice could well reflect a widespread motivation rather than an irregularity or even a psychopathology. To understand this human phenomenon, the creation of the Self-Sacrifice Scale will furnish a means to empirically test theoretically driven hypotheses for a wide range of social behaviors, affording a deeper understanding of why and under what circumstances individuals are motivated to self-sacrifice for an important cause.

The Concept of Martyrdom

A *martyr* commonly refers to "a person who sacrifices something of great value and especially life itself for the sake of principle" (*Merriam-Webster's Online Dictionary,* second definition of "Martyr," 2012). It also refers to the suffering of persecution for refusing to renounce a set of beliefs or a cause, usually religious.

Interestingly, the notion of death and suffering is a late addition to the definition of martyrdom. In Ancient Greek, the term martyr (*martys* or *martus*) literally means witness. Perhaps the most emblematic witness in Christianity is Paul the Apostle who, according to the New Testament, was appointed by God to receive divine revelations and testify to all men the things he would see and hear spiritually. Being a witness was a dangerous business in the days of early Christianity as it became increasingly associated with death and persecution. Indeed, Christians brought before Roman emperors and governors bore witness to their religious beliefs and were sentenced to prison, torture, and death for their convictions.

The archetypical act of martyrdom in Christianity is of course the crucifixion of Jesus Christ on the orders of Pontius Pilate and its description in the Gospels. Christians have usually come to interpret the death of Jesus on the cross as an act of martyrdom because he died to provide forgiveness to sinners. From this central event onward, Christians have come to conceive that witnesses

dying for their convictions follow the example of Jesus in offering up their lives for the truth. This assertion is supported by religious scriptures that contend that Christians who defended Christ before men would be confessed by Christ as His disciples in heaven, whereas those who denied their Lord and Savior would be rejected at the pearly gates by the Son of Man (Luke 12:8; Matthew 10:32).

Martyrdom is not a concept unique to Christianity; it is also found in other Abrahamic religions. In Judaism, *kedoshim* (translated as Holy Ones) is a title given to those who have sanctified God's name (*kiddush hashem*) by bringing honor, respect, and glory to God. One way of sanctifying His name is to be willing to sacrifice one's life rather than violating God's commandments (serving idols, committing murder, and committing incest or adultery). For instance, Jews killed by the Spanish Inquisition (see Netanyahu, 1995) because of failing to relinquish their religious convictions have been consecrated as Holy Ones. Similarly, the books of Maccabees recount numerous stories of Jews resisting Hellenic colonization and preferring to die rather than relinquishing the observance of Jewish customs. One such story, in 2 Maccabees, pertains to Hannah and her seven sons who suffered and died because they refused eating pork to obey king Antiochus Epiphanes.

Akin to other major religious doctrines, martyrdom plays an important role in Islam. In Arabic, *shahid* means both witness and martyr. The title and honor of shahid are generally given to soldiers fighting infidels and others who defend their religious convictions. The status of martyrdom (*Istishhad*) is also conferred to those who die of epidemic diseases, accidents, and infant mortality. Interestingly, one of the first martyrs in Islam was a woman named Sumayyah bint Khayyat who was murdered in A.D. 615 for espousing the beliefs of Islam a few years after Muhammad's declaration of prophethood.

According to the Qur'an, suicide and martyrdom are distinct from each other. Whereas suicide is strictly prohibited (Qur'an 4: 29: "And do not kill yourselves. Indeed, Allah is to you ever Merciful"), martyrdom is not; in fact, it is even encouraged with the promise of earthly rewards in heaven. The following passage from the Hadith (Bukhari 52:54) exemplifies how martyrdom, according to the prophet Muhammad, is an act of remarkable devotion to God: "I would love to be martyred in Allah's Cause and then get resurrected and then get martyred, and then get resurrected again and then get martyred and then get resurrected again and then get martyred."

Although most accounts of martyrs derive from the religious literature, several cases of secular martyrs are also documented. For instance, the death of the Greek philosopher Socrates (399 B.C.) is a secular example of self-sacrifice. Socrates, who had been found guilty of corrupting the minds of the young, accepted death from hemlock (a poisonous plant) rather than giving up his ideals of enlightenment. Contemporary accounts of secular self-sacrifice also include soldiers from various nations protecting their countries, especially the Japanese kamikaze during World War II and suicide attacks carried out by separatist Liberation Tigers of Tamil Eelam of Sri Lanka (the latter group being examined in the present article). Other, more peaceful examples of people who gave their lives for a cause include political activists like Martin Luther King,

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[1] To clarify, these important historical figures are not martyrs because they were assassinated, but because they dedicated considerable time and energy to their respective causes.

Jr., who promoted the ideal of African American civil rights in the United States, and Mahatma Gandhi, who vigorously fought British occupation of India by promoting nonviolent civil disobedience.[1]

Despite the historical, political, and societal importance of martyrdom across cultures, psychology has been relatively silent about the construct of self-sacrifice as such. In what follows, we elaborate on the psychology of self-sacrifice (or martyrdom) and describe ways in which it can be conceptualized.

What Martyrdom Is

We define martyrdom as the psychological readiness to suffer and sacrifice one's life for a cause. We posit that this cause needs to be grounded in a shared reality and *perceived* as socially condoned. In his seminal book, *Man's Search for Meaning,* Frankl (1985) argued that when people are devoted to a cause of societal importance, their self-interest diminishes to the point where their cause is the ultimate pillar of their existence. Frankl coined the term *self-transcendence* to refer to this state of self-effacement. Consistent with this perspective, people ready to self-sacrifice for a given cause should attribute greater importance to their cause than their own lives, even the lives of others. In other words, martyrs are ready to die because their cause supersedes all other life domains. Hence, the concepts of martyrdom and self-sacrifice are functionally equivalent and used interchangeably in what follows.

The concept of martyrdom shares some resemblance to other psychological constructs, while it also possesses its own unique aspects. First, it is intimately related to goal commitment, commonly defined as "one's attachment to or determination to reach a goal" (Locke, Latham, & Erez, 1988, p. 24). Indeed, it would be troubling to find individuals contemplating dying for a cause without attributing considerable importance to it. However, goal commitment is relatively nonspecific with regard to concrete behavior and generally involves persistence and the extension of effort (Wright, O'Leary-Kelly, Cortina, Klein, & Hollenbeck, 1994). Martyrdom, on the other hand, is more specific as it uniquely relates to sacrificial behaviors performed for the sake of a given cause.

The construct of martyrdom also shares some similarities with altruism. Both constructs reflect a propensity toward acting on behalf of others and self-effacement. However, martyrdom is distinct from altruism in several ways. For one, altruism is conceived as a general personality trait affecting a large spectrum of helping behaviors (Batson, 1987; Eisenberg, 1986; Rushton, Chrisjohn, & Fekken, 1981; for a discussion, see Carlo, Eisenberg, Troyer, Switzer, & Speer, 1991). In contrast, martyrdom is specifically geared toward self-effacement for a given cause. Notice also that altruism does not necessarily entail relinquishing things of high value (e.g., well-being, wealth), whereas sacrifice is the quintessence of martyrdom. In addition, altruism is conceived as being prosocial (e.g., Batson & Shaw, 1991); this is not necessarily the case with martyrdom. In fact, as we intend to demonstrate, martyrdom is a double-edged sword in the sense that it can lead either to prosocial or to destructive behaviors. Therefore, akin to philanthropists or others with an altruistic personality, individuals with a disposition toward martyrdom might help others in need, sacrifice

wealth or nonmonetary possessions, and abandon important relationships if doing so supported their cause. However, as explained in the following sections, under certain circumstances, we posit that individuals prone to martyrdom can be susceptible to harming others assumed to be inimical to their cause.

What Martyrdom Is Not

Strong and unshakable convictions often appear extreme vis-à-vis beliefs commonly held in one's society. Accordingly, people who are ready to suffer or die for their convictions risk being labeled as eccentrics, if not lunatics. However, it need not be the case that these individuals are disconnected from reality; one of the most profound teachings of social psychology, after all, is that behaviors that appear shocking and horrific can be undertaken by normal individuals (e.g., recall the famous Milgram experiments, Milgram, 1963; Zimbardo's Stanford prison experiments, Zimbardo, Haney, Banks, & Jaffe, 1974). As we tend to demonize what we cannot understand, social psychology teaches us that references to psychopathologies are unnecessary if one takes cognizance of the strong social forces that energize human behavior.

The same applies to the construct of martyrdom. Consistent with evidence that suicide terrorism bears no systematic relation to psychopathology (Bongar, Brown, Beutler, Breckenridge, & Zimbardo, 2007; Merari, 2010; Post et al., 2009) and that extremist actors could in fact be more rational than previously expected (Kruglanski & Fishman, 2006; Kruglanski & Orehek, 2009; Wintrobe, 2006), we posit that martyrdom is explicable in terms of powerful social forces that can impinge on normal individuals without any signs of psychopathology.

Martyrdom and Suicide Terrorism

One fundamental question that this article poses concerns the relation between dying for a cause and suicidal acts of terrorism: To what extent are they psychologically analogous? One way of tackling this issue is to conceptualize human motivation in terms of means and the goals they serve (Kruglanski et al., 2012; Kruglanski, Köpetz, et al., 2013; Kruglanski et al., 2002). From this perspective, martyrdom and suicide terrorism share common grounds as they both serve the goal of advancing a political or religious cause. Yet they are distinct as the means chosen to attain the goal are different. Specifically, suicide terrorism has a homicidal component that is not included in all forms of martyrdom. As the quotation opening this article underscores, people have often dedicated their lives fighting for a cause through nonviolent self-abnegating actions (e.g., hunger strikes). Ultimately, this distinction is important because it highlights the role of ideology—the set of collective beliefs to which the individual subscribes—in dictating which means are morally justified and effective to support the cause (Gunaratna, 2005; Kruglanski, Bélanger, et al., 2013). As is demonstrated below, the distinction between self-sacrificing and harming others as opposed to self-sacrificing for the greater good relies on whether one's ideology supports violence or not. Another important point is that the cause for which one is ready to commit the ultimate sacrifice does not need to be religious. Secular causes can also attract zealous followers.

The research described below was designed to create and validate a psychometric tool consistent with this definition of martyrdom while documenting its antecedents and implications for a plurality of cognitive, affective, and behavioral phenomena.

Scale Construction

Study 1A: Developing the Self-Sacrifice Scale

The aim of Study 1A was to validate a scale to measure individuals' readiness to self-sacrifice. The scale-construction process was theoretically driven and was based on the definition of martyrdom given earlier. This definition entails that self-sacrifice would be associated with extreme commitment and positive valuation of the cause that individuals have chosen for themselves. In addition, the Self-Sacrifice Scale should be associated with other motivational constructs associated with elevated goal commitment such as harmonious and obsessive passion (Vallerand et al., 2003). Lastly, in line with Post and colleagues (2009), who argued that suicide terrorism is not associated with signs of psychopathology, self-sacrifice should not be associated with suicidal ideation and depression.

Method.

Participants. Seven hundred and ninety-six participants (339 men, 457 women; $M_{age} = 31.48$ years, $SD_{age} = 10.61$) from Canada and the United States participated in this study. Participants' gender did not yield any effects on the dependent variables; hence, it is omitted from further consideration. Participants completed a questionnaire on Amazon.com's Mechanical Turk (MTurk) online survey program. MTurk allows researchers to post questionnaires that are completed by users who participate in exchange for small contributions toward an Amazon.com gift voucher. The platform records participants' IP address to prevent them from completing the same questionnaire more than once. Researchers who have compared data from MTurk vis-à-vis data obtained in university laboratories or elsewhere on the web (e.g., discussion forums) have concluded that (a) MTurk provides more diverse and more representative samples (Buhrmester, Kwang, & Gosling, 2011), (b) "the quality of data provided by MTurk met or exceeded the psychometric standards associated with published research" (Buhrmester et al., 2011, p. 5), and (c) MTurk is a "reliable source of experimental data" (Paolacci, Chandler, & Ipeirotis, 2010, p. 416; cf. Berinsky, Huber, & Lenz, 2012).

Procedure. Participants were invited to participate in a study on personality. After completing the consent form, participants were given a questionnaire including several psychological measures (e.g., self-sacrifice, passion, goal commitment) detailed below. Following completion of the study, participants were automatically sent to a webpage that contained debriefing information.

Measures.

Readiness to self-sacrifice. Participants were asked to think about a cause that was very important for them. They were then asked to list this cause and to complete items that referred to it. We developed 39 items (see the Appendix) to reflect the definition of martyrdom given earlier. The items referred to three domains of self-sacrifice in defense of the cause: (a) sacrifice of wealth, possessions, and self-interest (e.g., "I would be ready to give up all my personal wealth for a highly important cause"); (b) sacrifice of

important relationships (e.g., "I would defend a cause to which I am truly committed even if my loved ones rejected me"); and (c) sacrifice of one's life (e.g., "I would not risk my life for a highly important cause" [reverse-scored]). Participants rated each item on a 7-point scale ranging from 1 (*Not agree at all*) to 7 (*Very strongly agree*).

Passion Scale. While responding to the Passion Scale (Vallerand et al., 2003), participants were asked to keep in mind the cause referred to in the Self-Sacrifice Scale. The Passion Scale consisted of six harmonious passion items (e.g., "My cause is in harmony with the other activities in my life"; $M = 5.03$, $SD = 1.38$, $\alpha = .87$) and six obsessive passion items (e.g., "I have almost an obsessive feeling for my cause"; $M = 2.77$, $SD = 1.52$, $\alpha = .88$) and was completed on a 7-point Likert-type scale ranging from 1 (*Not agree at all*) to 7 (*Very strongly agree*).

Commitment to the cause. Participants' commitment ($M = 6.01$, $SD = 1.28$) to their cause was measured with a single item ("My cause is very important to me") on a 7-point scale ranging from 1 (*Not agree at all*) to 7 (*Completely agree*).

Cause valuation. Participants indicated the extent to which they liked ($M = 5.98$, $SD = 1.38$) their important cause on a 7-point scale ranging from 1 (*Not at all*) to 7 (*Extremely*).

Depression. The short Patient Health Questionnaire (PHQ, Kroenke, Spitzer, & Williams, 2001) was utilized to measure participants' tendency to feel depressed. The short PHQ is a nine-item self-report scale ($M = 1.70$, $SD = .65$, $\alpha = .89$) in which participants report the frequency at which they experience different symptoms. Sample items are "Little interest or pleasure in doing things" and "Feeling down, depressed, or hopeless." Participants gave their answers on a 4-point scale ranging from 1 (*Not at all*) to 3 (*Nearly every day*).

Suicidal ideation scale. Participants' suicidal ideation was measured using the Beck Scale of Suicidal Ideation (BSI; Beck & Steer, 1991). The BSI is a 19-item self-report scale in which participants rate the severity of each statement on a 3-point scale ranging from 0 to 2. A single score of suicidal ideation was computed by averaging across items ($M = 1.25$, $SD = .25$, $\alpha = .83$).

Results.

On important causes. All participants indicated a cause that was important for them. Over 50 different causes were mentioned by participants. The five most popular causes in descending order were promoting human rights (30.3%), religion (12.7%), animal rights (11.4%), helping family and friends (10.4%), and protecting the environment (7.5%).

On the factorial validity and reliability of the Self-Sacrifice Scale. To test the factorial validity of the Self-Sacrifice Scale, participants were randomly divided into two groups. The first group was used to derive a preliminary version of the scale by means of an exploratory factor analysis (EFA), and the second group was used to confirm this version of the Self-Sacrifice Scale using a confirmatory factor analysis (CFA) with AMOS (Arbuckle, 2007). A first EFA was thus conducted with the 39 items using a random sample of 459 participants using maximum likelihood and oblimin rotation. Based on this analysis, we eliminated items with cross-loading, as well as those with weak loadings below .30 (Tabachnick & Fidell, 1989). Using this approach, 10 items (five were reverse-scored) remained (the final Self-Sacrifice Scale is displayed in Table 1). Table 2 displays the descriptive

Table 1

Items That Make Up the Self-Sacrifice Scale (Study 1A)

Items
1. It is senseless to sacrifice one's life for a cause. (Reversed)
2. I would defend a cause to which I am truly committed even if my loved ones rejected me.
3. I would be prepared to endure intense suffering if it meant defending an important cause.
4. I would not risk my life for a highly important cause. (Reversed)
5. There is limit to what one can sacrifice for an important cause. (Reversed)
6. My life is more important than any cause. (Reversed)
7. I would be ready to give my life for a cause that is extremely dear to me.
8. I would be willing to give away all my belongings to support an important cause.
9. I would not be ready to give my life away for an important cause. (Reversed)
10. I would be ready to give up all my personal wealth for a highly important cause.

statistics for each of the final items. Responses to each of these items were made using the whole spectrum of the scale (i.e., observed range = 1–7).

A second EFA (with maximum likelihood and oblimin rotation) was then conducted with those 10 items. Results revealed a two-factor solution with eigenvalues of 4.96 and 1.53 representing 45.14% and 11.34% of the variance, respectively. The oblimin factor rotation revealed that all the positive items loaded on one factor and all the reverse-scored items loaded strongly on a second factor (no cross-loadings were observed for any of the items). Results of the oblimin rotation thus appeared to suggest the presence of two factors; however, previous research has shown that loadings of this sort are usually an artifact of item-wording, which can be evinced by incorporating common-method factors to the model (Marsh, Scalas, & Nagengast, 2010; for a discussion, see Biderman, Nguyen, Cunningham, & Ghorbani, 2011). Therefore, in line with our theory, we hypothesized that a unique factor structure would best fit the data when adding two common-method factors (one for reverse-scored items and one for non-reverse-scored items).

Consequently, a CFA was conducted with AMOS (Arbuckle, 2007) on the 10 self-sacrifice items using the second random sample of 337 participants. The covariance matrix with the 10 observed variables was used as a database for the measurement model. The specified model was tested with unstandardized coefficients obtained from the maximum-likelihood method of estimation. It was hypothesized that a single self-sacrifice factor and two method factors would yield a meaningful and coherent fit to the data (see Figure 1). A covariance between the two method factors was also hypothesized. Results from the CFA yielded a good fit to the data, $\chi^2(24, N = 337) = 62.18$, $p = .001$, comparative fit index = .98, incremental fit index = .98, root-mean-square error of approximation = .06. Results revealed high levels of reliability for the Self-Sacrifice Scale ($\alpha = .90$).

To ensure that the proposed unique factor solution with two method factors was the best fitting model, it was compared to three alternative models, namely, Model 1, a unique factor model with no method factors; Model 2, a unique factor solution with one positive method factor (composed of non-reverse-scored items);

and Model 3, a unique factor solution with one negative method factor (composed of reverse-scored items). A chi-square difference test between Model 1 and the hypothesized model was significant, $\Delta\chi^2(11) = 472.82$, $p < .01$, suggesting that the hypothesized model best fitted the data. Comparing Model 2 against the hypothesized model yielded similar results, $\Delta\chi^2(6) = 48.32$, $p < .01$. Similarly, Model 3 fit the data more poorly compared to the hypothesized model, $\Delta\chi^2(6) = 173.12$, $p < .01$. Table 3 provides a summary of these model comparisons tests.

Relationships with elements of the definition of self-sacrifice. Table 4 displays the zero-order correlations between self-sacrifice and items assessing elements related to the definition of martyrdom. As expected, self-sacrifice was not related to depression and suicide ideation. In addition, results supported our predictions that self-sacrifice is positively related to motivational constructs such as harmonious and obsessive passion, as well as other important dimensions such as goal commitment and valuation of the cause. However, given that these psychological dimensions were highly intercorrelated, multiple regression analyses were conducted in order to highlight their unique contributions.

Table 2

Descriptive Statistics for Final Item Selection (Studies 1A, 1B, and 1C)

| Item	M (SD)	Skew	Corrected item–total correlation
Study 1A (N = 796)			
SS 1	4.67 (1.86)	−.49	.57
SS 2	4.40 (1.97)	−.31	.61
SS 3	4.17 (2.06)	−.14	.44
SS 4	3.30 (1.95)	.38	.66
SS 5	3.84 (2.06)	.02	.65
SS 6	3.62 (1.94)	.28	.74
SS 7	3.52 (1.75)	.33	.50
SS 8	3.70 (1.85)	.15	.68
SS 9	3.73 (1.88)	.18	.60
SS 10	3.45 (1.81)	.30	.66
Study 1B (N = 1182)			
SS 1	4.26 (2.04)	−.11	.44
SS 2	5.05 (1.74)	−.74	.40
SS 3	4.25 (1.84)	−.14	.64
SS 4	3.96 (2.07)	.00	.60
SS 5	3.48 (1.91)	.42	.59
SS 6	3.89 (2.03)	.07	.61
SS 7	2.99 (1.95)	.72	.72
SS 8	3.60 (2.02)	.27	.65
SS 9	3.47 (2.15)	.38	.58
SS 10	3.66 (2.05)	.24	.64
Study 1C (N = 138)			
SS 1	4.10 (2.08)	−.05	.56
SS 2	5.37 (1.62)	−.93	.38
SS 3	4.36 (1.78)	−.19	.65
SS 4	3.73 (2.06)	.06	.65
SS 5	3.29 (1.76)	.48	.60
SS 6	3.70 (1.95)	.08	.66
SS 7	2.93 (1.94)	.71	.73
SS 8	3.95 (2.00)	.08	.76
SS 9	3.45 (2.12)	.37	.76
SS 10	4.09 (2.02)	−.02	.54

Note. SS = Self-Sacrifice Scale item.
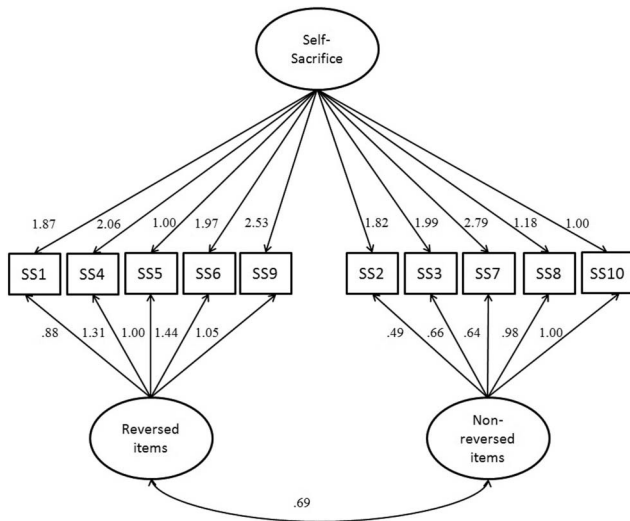
Figure 1. Confirmatory factor analysis of the Self-Sacrifice Scale: a one-factor solution with two method factors (Study 1A). All beta coefficients were statistically significant (all $ps < .05$). SS = self-sacrifice.

Self-sacrifice was first regressed on harmonious and obsessive passion. Results indicated that harmonious passion ($\beta = .15$, $p < .001$, $R^2 = .01$) and obsessive passion ($\beta = .26$, $p < .001$, $R^2 = .05$) were both significant predictors of self-sacrifice.

Then, self-sacrifice was regressed on goal commitment and valuation. Results indicated that goal commitment ($\beta = .19$, $p < .01$, $R^2 = .02$) was a significant predictor of self-sacrifice, but not valuation ($\beta = .04$, $p = .51$, $R^2 = .00$).

Further analyses were conducted to determine to what extent self-sacrifice could predict several outcomes controlling for other personality dimensions. In the first analysis, goal commitment was regressed on self-sacrifice and harmonious and obsessive passion. Results indicated that harmonious passion ($\beta = .65$, $p < .001$, $R^2 = .32$) was a significant predictor of goal commitment, but not obsessive passion ($\beta = -.01$, $p = .76$, $R^2 = .00$) or self-sacrifice ($\beta = .04$, $p = .27$, $R^2 = .00$).

In the second analysis, valuation of the cause was regressed on self-sacrifice and harmonious and obsessive passion. Results indicated that obsessive passion ($\beta = -.12$, $p < .01$, $R^2 = .01$) and harmonious passion ($\beta = .70$, $p < .001$, $R^2 = .37$) were significant predictors of valuation, but not self-sacrifice ($\beta = .01$, $p = .68$, $R^2 = .00$).

In the third analysis, depression was regressed on self-sacrifice and harmonious and obsessive passion. Results indicated that harmonious passion was negatively related to depression ($\beta = -.21$, $p < .001$, $R^2 = .03$), whereas obsessive passion was positively related to it ($\beta = .27$, $p < .001$, $R^2 = .05$), and self-sacrifice was unrelated to it ($\beta = .02$, $p = .48$, $R^2 = .00$).

Lastly, suicide ideation was regressed on self-sacrifice, and harmonious and obsessive passions were regressed on self-sacrifice, harmonious passion, goal commitment, and valuation. In ways similar to the previous analysis, results indicated that harmonious passion was negatively related to suicide ideation ($\beta = -.15$, $p < .01$, $R^2 = .01$), whereas obsessive passion was positively related to it ($\beta = .12$, $p < .05$, $R^2 = .01$), and self-sacrifice was unrelated to it ($\beta = .05$, $p = .38$, $R^2 = .00$).

In all of the previously discussed analyses, we tested whether the relationships between self-sacrifice and the various dependent variables were affected by individuals responding to the extreme ends of the Self-Sacrifice Scale. For example, we examined whether self-sacrifice would increase goal commitment and whether the rate of increase would be accentuated at high values of self-sacrifice. Results did not yield support for any of these curvilinear relations (all $ps > .1$).

Discussion. Results of Study 1A provided support for a theoretically driven scale measuring individuals' readiness to self-sacrifice. Specifically, Study 1A demonstrated that the Self-Sacrifice Scale is best conceptualized as a one-factor solution that includes two method factors (one for positively worded and one for negatively worded items). The presence of the method factors is likely due to an artifact of item-wording observed with a range of scales, such as Rosenberg's (1965) Self-Esteem Scale, which has an identical factorial structure (for a discussion, see Tomás & Oliver, 1999). The Self-Sacrifice Scale was also shown to be reliable and have good convergent validity. It was positively correlated with goal commitment, valuation of the cause, and other motivational constructs associated with extensive goal commitment such as harmonious and obsessive passions. These results stand to reason given that the construct of passion is defined as "a strong inclination toward an activity (object, person, or ideology) that people like, find important, and in which they invest time and energy" (Vallerand et al., 2003, p. 757). Finally, the scale also demonstrated divergent validity. It did not correlate with depression and suicidal ideation, which is consistent with the idea that willingness to die for a cause is different from psychopathology (Post et al., 2009).

Multiple regression analyses also allowed a deeper look into these associations. Specifically, we found that self-sacrifice was predicted both by harmonious and obsessive passions. However, further analyses pitting goal commitment against valuation of the cause to predict self-sacrifice demonstrated that only goal commitment was a significant predictor of self-sacrifice. This suggests that liking a given cause is not enough to be ready to self-sacrifice for it; perceiving the cause as highly important seems to be a stronger motivational determinant. In terms of predicting outcomes such as goal commitment, valuation, depression, and suicide ideation, harmonious and obsessive passion were found to be better predictors than self-sacrifice. This reflects the fact that commitment and valuation are constituents of the definition of passion and that self-sacrifice has no relation to depression and suicide ideation.

Table 3
Self-Sacrifice Model Comparisons (Study 1A)

Model	χ^2	df	CFI	RMSEA
Hypothesized	62.18**	24	.98	.06
Model 1	535.00**	35	.75	.20
Model 2	110.50**	30	.96	.08
Model 3	235.30**	30	.89	.14

Note. CFI = comparative fit index; RMSEA = root-mean-square error of approximation.
** $p < .01$.

Table 4
Means, Standard Deviations, and Correlations (Study 1A)

Variable	M	SD	1	2	3	4	5	6	7
1. Self-sacrifice	3.69	1.77	—	.33***	.28***	.22***	.17***	.06	.05
2. Obsessive passion	2.77	1.52		—	.47***	.31***	.21***	.18***	.07
3. Harmonious passion	5.03	1.38			—	.66***	.65***	−.07	−.07
4. Commitment	6.01	1.28				—	.64***	−.04	−.07
5. Valuation	5.98	1.38					—	.05	−.06
6. Depression	1.70	0.65						—	.54***
7. Suicide ideation	1.25	0.25							—

*** $p < .001$.

Study 1B: Convergent and Discriminant Validity

Study 1B was designed to further document the construct validity of self-sacrifice by examining its nomological network. Using three different samples, Study 1B examined the correlates of self-sacrifice with several personality dimensions. In the first sample, the Self-Sacrifice Scale was correlated with the Big Five; in the second sample, it was correlated with measures of altruism, optimism, meaning in life, fatalism, and belief in God; and in the third sample, it was correlated with measures of psychopathy and social desirability responding.

In the first sample, no a priori predictions were made with regard to self-sacrifice and the Big Five; this analysis was exploratory. However, several predictions were made in the second and in the third samples. In the second sample, (a) self-sacrifice and altruism were expected to positively correlate because they are both related to self-effacement and acting on behalf of others, (b) self-sacrifice was expected to correlate positively with meaning in life because commitment to an important cause should provide a sense of purpose and guidance (Emmons, 2003), (c) self-sacrifice and belief in God were expected to correlate positively given that the notion of martyrdom is a recurrent theme being sanctioned in religious scriptures, (d) self-sacrifice was not expected to be related to wishful thinking or any inflated beliefs in the likelihood of experiencing positive or avoiding negative life events (optimism) because self-sacrifice entails the cognizance of incurring considerable costs and personal suffering, and lastly (e) self-sacrifice was not expected to correlate with fatalism because fatalism is a form of resignation and belief in predeterminism opposed to the idea that putting forth efforts can be useful to help one's cause.

In the third sample, (f) self-sacrifice and psychopathy were not expected to correlate positively given that suicide terrorism is not associated with mental illness or personality disorder (Bongar et al., 2007; Merari, 2010; Post et al., 2009). Study 1A already established that self-sacrifice is not correlated with suicide ideation and depression. Here, we used two scales of psychopathy validated to be used with a noninstitutionalized population. It was also expected that (g) self-sacrifice would be unrelated to social desirability overall. However, Paulhus and John (1998) argued for the existence of two distinct socially desirable responding: self-deceptive enhancement and impression management. The former refers to the tendency to cast oneself in a positive light that is due to an overly confident self-image (Paulhus & John, 1998), whereas the latter refers to "a deliberate attempt to distort one's responses in order to create a favorable impression with others" (Barrick & Mount, 1996, p. 262). We aimed to examine whether self-sacrifice would correlate with any of these different social desirability strategies.

Method.

Participants. Five hundred and seven participants from the United States were recruited on MTurk. These participants were randomly divided into two approximately equivalent samples: Sample 1 ($N = 250$; 80 men, 170 women; $M_{age} = 33.09$ years, $SD_{age} = 12.84$) and Sample 2 ($N = 257$; 83 men, 174 women; $M_{age} = 33.11$ years, $SD_{age} = 12.35$). For the third sample, 675 introductory students at a major Canadian university completed the scales in a mass testing session at the beginning of the semester (181 men, 494 women; $M_{age} = 19.86$ years, $SD_{age} = 4.13$). Participants' gender did not yield any effects on the dependent variables; hence, it is omitted from further consideration.

Procedure. As in Study 1A, participants were invited to partake in a study on personality. Sample 1 completed the Self-Sacrifice Scale and the Big Five, whereas Sample 2 completed the Self-Sacrifice Scale and measures of altruism, meaning in life, belief in God, optimism, and fatalism. In contrast, for Sample 3, participants completed (in random order) the Self-Sacrifice Scale and measures of psychopathy and social desirability, along with other scales, as a packet during mass testing at the beginning of the semester.

Measures.

Readiness to self-sacrifice. Akin to Study 1A, participants listed an important cause and completed the Self-Sacrifice Scale (Sample 1: $M = 3.91$, $SD = 1.34$; Sample 2: $M = 3.84$, $SD = 1.40$; Sample 3: $M = 3.90$, $SD = 1.38$) in reference to this cause (e.g., world peace, gender equality, animal rights). The scale had good reliability (Sample 1: $\alpha = .86$, Sample 2: $\alpha = 87$, Sample 3: $\alpha = .88$).

Big Five personality dimensions. The Big Five were measured using the Mini-Markers scale (Saucier, 1994). The scale consists of 40 personality adjectives intended to measure participants' openness (e.g., "Imaginative," $\alpha = .83$), conscientiousness (e.g., "Organized," $\alpha = .83$), extraversion (e.g., "Energetic," $\alpha = .87$), agreeableness (e.g., "Warm," $\alpha = .84$), and neuroticism (e.g., "Moody," $\alpha = .86$). Participants rated the extent to which each adjective accurately described their personality on a 9-point Likert-type scale ranging from 1 (*Extremely inaccurate*) to 9 (*Extremely accurate*).

Altruism. The extent to which participants were benevolent and devoted to the welfare of others was measured via the Self-Report Altruism Scale (Rushton et al., 1981). In this scale, participants reported the frequency ($M = 2.68$, $SD = .61$) with which

they engaged in 20 different behaviors on a 5-point Likert-type scale ranging from 1 (*Never*) to 5 (*Very often*). Sample items are "I have given directions to a stranger" and "I have donated blood" ($\alpha = .89$).

Meaning in life. Participants completed the Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2006), a five-item instrument measuring the presence of meaning in life ($M = 4.73$, $SD = 1.45$; e.g., "I have a good sense of what makes my life meaningful"). Items were rated on a 7-point Likert-type scale ranging from 1 (*Absolutely untrue*) to 7 (*Absolutely true*). The scale displayed good reliability ($\alpha = .93$).

Belief in God. Participants were asked whether they believed or not (yes/no) in God ($M = .70$, $SD = .45$).

Optimism. The Life Orientation Test (Scheier & Carver, 1985) measured participants' dispositional optimism ($M = 3.27$ $SD = .81$). The scale is composed of eight items such as "In uncertain times, I usually expect the best," and "If something can go wrong for me, it will" ($\alpha = .89$). Respondents indicate their agreement with each item on a 5-point scale ranging from strongly 1 (*Strongly disagree*) to 5 (*Strongly agree*).

Fatalism. The belief that all events are predetermined and inevitable was measured using a fatalism scale (Aycan et al., 2000). This fatalism scale ($M = 2.36$, $SD = 1.05$) is composed of five items such as "Most of the time, it doesn't pay to try hard because things never turn out right anyway," and "When bad things are going to happen they just are going to happen no matter what you do to stop them." Participants indicated to what extent they agreed with these statements on a 7-point scale ranging from 1 (*Not agree at all*) to 7 (*Very strongly agree*). The scale was reliable ($\alpha = .73$).

Psychopathy. Psychopathy is a personality disorder characterized by manipulativeness, egocentricity, lack of remorse or empathy, impulsivity, and pervasive involvement in criminal behavior (cf. Cooke & Michie, 2001). We used two different self-report scales to measure psychopathy: the short form of the Self-Report Psychopathy Scale (SRP-SF; Paulhus, Neumann, & Hare, in press) and the Levenson self-report psychopathy scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995).

The SRP-SF is a self-report scale that emulates the standard interview measure of psychopathy (Hare Psychopathy Checklist—Revised; Hare & Vertommen, 2003). The scale measures four dimensions of psychopathy, namely, interpersonal manipulation (e.g., pathological lying, conning, manipulative tendencies), callous affect (lack of concern for others, such as lack of remorse, guilt, empathy), erratic lifestyle (e.g., recklessness, impulsivity), and antisocial behaviors (e.g., rule breaking, criminal tendencies).

The SRP-SF scale is composed of 29 items (interpersonal factor, seven items; affective factor, seven items; lifestyle factor, seven items; and antisocial factor, eight items). Participants indicated to what extent they agreed with these statements on a 5-point scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). The interpersonal ($M = 1.88$, $SD = 0.75$, $\alpha = .83$), affective ($M = 1.82$, $SD = 0.62$, $\alpha = .72$), lifestyle ($M = 2.14$, $SD = 0.68$, $\alpha = .77$), and antisocial ($M = 1.34$, $SD = 0.41$, $\alpha = .67$) dimensions of psychopathy were reliable.

The LSRP scale is composed of 26 items designed to assess two forms of psychopathy. Primary psychopathy (PP; 16 items) is characterized by selfish and manipulative tendencies, for example, "For me, what's right is whatever I can get away with" ($M = 1.84$, $SD = .44$). Secondary psychopathy (SP; 10 items) is characterized by impulsive and self-defeating tendencies, for example, "Most of my problems are due to the fact that other people just don't understand me" ($M = 2.11$, $SD = .40$). Participants indicated to what extent they agreed with these statements on a 5-point scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). The two subscales were reliable (PP $\alpha = .87$, SP $\alpha = .68$).

Social desirability. The Balanced Inventory of Desirable Responding (BIDR) Version 6 (Paulhus, 1988) was used to assess social desirability responding. Using a scale of 1 (*Not true*) to 7 (*Very true*), participants responded to the 20-item Self-Deceptive Enhancement subscale of the BIDR ($M = 4.16$, $SD = .63$, $\alpha = .69$) and the 20-item Impression Management subscale of the BIDR ($M = 3.86$, $SD = .84$, $\alpha = .80$).

Results. The first set of analyses involved Sample 1 and examined the relationship between self-sacrifice and the Big Five. Correlational analyses indicated that self-sacrifice was unrelated to all five personality dimensions. Table 5 summarizes the results. Because the Big Five dimensions are intercorrelated, multiple regression analyses were conducted to determine the unique contribution of each factor in predicting self-sacrifice. To that end, self-sacrifice was regressed on all Big Five personality dimensions. Results indicated that conscientiousness ($\beta = -.18$, $p < .05$, $R^2 = .02$), openness ($\beta = .16$, $p < .05$, $R^2 = .02$), and neuroticism ($\beta = .23$, $p < .01$, $R^2 = .03$) were all significant predictors of self-sacrifice, whereas agreeableness and extraversion were unrelated to it (all ps > .10).

The second set of correlational analyses involved Sample 2. They are summarized in Table 6. In line with our expectations, results indicated that self-sacrifice was positively related to altruism, meaning in life, and belief in God. Also consistent with our predictions, self-sacrifice was unrelated to optimism and fatalism. Multiple regression analyses were conducted to examine these

Table 5
Means, Standard Deviations, and Correlations (Study 1B, Sample 1)

Variable	M	SD	1	2	3	4	5	6
1. Self-sacrifice	3.91	1.34	—	.09	−.10	−.03	−.05	−.09
2. Openness	6.89	1.22		—	.21***	.01*	.33***	.07
3. Conscientiousness	6.39	1.30			—	.28***	.39***	.47***
4. Extraversion	5.07	1.63				—	.20***	.29***
5. Agreeableness	6.93	1.23					—	.38***
6. Neuroticism	5.53	1.30						—

* $p < .05$. *** $p < .001$.

Table 6

Means, Standard Deviations, and Correlations (Study 1B, Sample 2)

Variable	M	SD	1	2	3	4	5	6
1. Self-sacrifice	3.90	1.38	—	.20***	.07	.22***	.00	.13*
2. Altruism	3.69	1.29		—	.26***	.17*	.02	.08
3. Optimism	6.28	0.98			—	.56***	−.25***	.06
4. Meaning in life	6.28	1.16				—	−.24***	.14*
5. Fatalism	2.36	1.05					—	.03
6. Belief in God	0.70	0.45						—

* $p < .05$. *** $p < .001$.

associations further. Self-sacrifice was first regressed on altruism, meaning in life, fatalism, optimism, and belief in God. Results indicated that altruism ($\beta = .17$, $p < .01$, $R^2 = .02$) and meaning in life ($\beta = .25$, $p < .001$, $R^2 = .04$) were both significant predictors of self-sacrifice, whereas all other predictors were nonsignificant (all $ps > .1$)

Subsequent multiple regression analyses were conducted to examine the Self-Sacrifice Scale's ability to predict altruism and meaning in life. In the first analysis, altruism was regressed on self-sacrifice, meaning in life, optimism, fatalism, and believing in God. Results indicated that optimism ($\beta = .26$, $p < .001$, $R^2 = .04$) and self-sacrifice ($\beta = .17$, $p < .01$, $R^2 = .02$) were the only two significant predictors of altruism (all other $ps > .1$). In the second analysis, meaning in life was regressed on self-sacrifice, altruism, optimism, fatalism, and believing in God. Results indicated that optimism ($\beta = .51$, $p < .001$, $R^2 = .22$), fatalism ($\beta = −.11$, $p < .05$, $R^2 = .01$), believing in God ($\beta = .09$, $p = .05$, $R^2 = .01$), and self-sacrifice ($\beta = .17$, $p = .001$, $R^2 = .02$) were all predictors of meaning in life, but not altruism ($\beta = .00$, $p = .98$, $R^2 = .00$).

The third set of correlational analyses involved Sample 3. They are summarized in Table 7. In line with our hypotheses, results indicated that self-sacrifice was not related to any forms of psychopathy (any of the four dimensions of SRP, PP, or SP; all $ps > .1$). Self-sacrifice was not expected to correlate with social desirability. Results indicated that the Self-Sacrifice Scale was not correlated with self-deceptive enhancement, but there was a significant, however small, correlation with impression management.

In keeping with previous analytic strategies, multiple regression analyses were conducted. In the first analysis, self-sacrifice was regressed on all four SRP dimensions as well as PP and SP,

self-deceptive enhancement, and impression management. Results indicated that SRP interpersonal ($\beta = −.04$, $p = .48$, $R^2 = .00$), SRP affective ($\beta = .10$, $p = .08$, $R^2 = .00$), SRP lifestyle ($\beta = .08$, $p = .11$, $R^2 = .00$), SP ($\beta = .00$, $p = .88$, $R^2 = .00$), and self-deceptive enhancement ($\beta = −.05$, $p = .26$, $R^2 = .00$) were nonsignificant predictors of self-sacrifice. However, SRP antisocial ($\beta = .09$, $p < .05$, $R^2 = .00$), PP ($\beta = −.11$, $p < .05$, $R^2 = .00$) and impression management ($\beta = .16$, $p < .001$, $R^2 = .01$) were both positively related to self-sacrifice.

Discussion. Study 1B provided further evidence for the construct validity of self-sacrifice. Specifically, Study 1B explored in greater depth the nomological network of this construct by evincing its correlates with several psychological dimensions. In the first sample, the Self-Sacrifice Scale was found to be uncorrelated to the Big Five personality dimensions. These exploratory findings suggest, on the one hand, that self-sacrifice is a construct distinct from the five broad dimensions of personality. On the other hand, they also suggest that there is no specific Big Five personality profile that may predispose one to self-sacrifice for a cause. However, multiple regression analyses including all Big Five personality dimensions indicated that openness and neuroticism were positively associated with self-sacrifice, whereas conscientiousness was negatively related to it, controlling for extraversion and agreeableness. These results could be interpreted as indicating that being open-minded (e.g., curious about discovering new information pertaining to one's cause), being emotionally unstable (especially if there are problems with the advancement of one's cause), and acting carelessly (e.g., risk taking) all promote greater readiness to self-sacrifice. However, given the absence of zero-order correlations between self-sacrifice and the Big Five, these results should be interpreted carefully as they could be statistically

Table 7

Means, Standard Deviations, and Correlations (Study 1B, Sample 3)

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Self-sacrifice	3.90	1.38	—	.01	.06	.05	.06	−.06	.00	−.00	.09*
2. SRP–interpersonal	1.88	0.75		—	.71***	.63***	.51***	.54***	.38***	−.18***	−.42***
3. SRP–affective	1.82	0.62			—	.64***	.49***	.51***	.41***	−.10*	−.34***
4. SRP–lifestyle	2.14	0.68				—	.46***	.41***	.45***	−.14***	−.47***
5. SRP–antisocial	1.34	0.41					—	.40***	.29***	−.12***	−.34***
6. Psychopathy–PP	1.84	0.44						—	.41***	−.04	−.32***
7. Psychopathy–SP	2.10	0.39							—	−.41***	−.37***
8. Self-deceptive enhancement	4.15	0.62								—	.39***
9. Impression management	3.86	0.84									—

Note. PP = primary psychopathy; SP = secondary psychopathy; SRP = Self-Report Psychopathy Scale.
* $p < .05$. *** $p < .001$.

inflated due to suppression—"a situation in which the magnitude of the relationship between an independent variable and a dependent variable becomes larger when a third variable is included" (Mackinnon, Krull, & Lockwood, 2000, p. 174).

In the second sample, results indicated that self-sacrifice was positively correlated with altruism, meaning in life, and belief in God. The fact that self-sacrifice was unrelated to optimism and fatalism suggests that self-sacrifice is not related to cognitive distortions about the likelihood of positive or negative events. Multiple regression analyses indicated that meaning in life and altruism were both positive predictors of self-sacrifice, controlling for fatalism, optimism, and belief in God. On the other hand, self-sacrifice was found to be a good predictor of altruism and meaning in life above and beyond all other control variables. Overall, these results coincide well with our theoretical definition and how martyrs are generally perceived, that is, individuals acting on behalf of the group for a meaningful cause often derived from religious beliefs. Moreover, the fact that self-sacrifice and meaning in life were strongly associated lends support to Frankl's (1985, 2000) idea that commitment to a higher cause infuse meaning in people's life.

The third sample replicated results from Study 1A by providing further evidence that self-sacrifice is unrelated to psychopathology, in this case, different forms of psychopathy. Multiple regression analyses, however, indicated that antisocial predisposition was a significant predictor of self-sacrifice, controlling for all other variables. These antisocial tendencies could be interpreted in this context as a willingness to break established norms and rules in order to achieve one's cause. But given the absence of zero-order correlations between these two dimensions, one needs to carefully interpret these results as they could also be susceptible to suppression effects. In conjunction with this observation, the observed effect sizes were extremely low ($R^2 = .00–.01$). For similar reasons, caution should be exercised in interpreting the multiple regression analyses suggesting that PP is a significant predictor of self-sacrifice. This association contrasts strongly with results from Sample 2, where altruism was positively correlated with self-sacrifice and predicted it would be controlling for other personal dispositions.

Interestingly, self-sacrifice and impression management were both positively correlated, and multiple regression indicated that impression management was a significant predictor of self-sacrifice, controlling for other variables. These results, which were unpredicted, could potentially mean that people with a strong readiness to self-sacrifice are actively trying to maintain impressions congruent with the perceptions they want to convey, which could be a means to persuade others to join their cause (Barrick & Mount, 1996). In summary, the results of Study 1B support the present conceptualization of martyrdom, the validity of the Self-Sacrifice Scale, and its nomological network.

Study 1C: Test–Retest

The main purpose of Study 1C was to document the test–retest reliability of the Self-Sacrifice Scale. Consistent with the notion that self-sacrifice is positively related to goal commitment and positive attitudes toward a cause (Study 1A), we predicted that the readiness to self-sacrifice would be a relatively stable individual characteristic. Indeed, it would be unexpected to observe a drastic change in people's beliefs, including their readiness to self-sacrifice, for a cause that they cherish. In line with this reasoning, Study 1C also aimed to test the ability of the Self-Sacrifice Scale to predict future outcomes such as people's commitment to their cause and how disappointed they would feel if their cause did not progress sufficiently. We hypothesized that self-sacrifice (measured at Time 1) would predict people's commitment to their cause and their disappointment if their cause was to fail in the future (at Time 2).

Method.

Participants. One hundred and thirty-eight Carleton University psychology undergraduate students (36 men, 102 women; $M_{age} = 19.77$ years, $SD_{age} = 4.42$) were recruited for this study. Participants' gender did not yield any effects on the dependent variables; hence, it is omitted from further consideration.

Procedure. Introductory psychology students completed the Self-Sacrifice Scale in a mass testing session at the beginning of the semester. They were invited to a lab session approximately 8–10 weeks later and completed the Self-Sacrifice Scale once again, in addition to other measures.

Measures.

Readiness to self-sacrifice. Akin to Studies 1 and 2, participants were asked to list an important cause and completed the Self-Sacrifice Scale in reference to this cause (e.g., curing cancer, ending poverty, animal rights). The scale had good reliability at Time 1 ($M = 3.90$, $SD = 1.38$, $\alpha = .89$) and Time 2 ($M = 3.69$, $SD = 1.29$, $\alpha = .86$).

Commitment to the cause. At Time 2, participants' commitment ($M = 6.28$, $SD = .98$) to their cause was measured with a single item ("My cause is very important to me") on a 7-point scale ranging from 1 (*Not agree at all*) to 7 (*Completely agree*).

Disappointment. At Time 2, participants answered the question "How disappointed would you feel if your cause did not come to a happy ending?" ($M = 6.28$, $SD = 1.16$) on a 7-point scale ranging from 1 (*Not disappointed at all*) to 7 (*Completely disappointed*).

Results. The cross-temporal stability of self-sacrifice at Time 1 and Time 2 was estimated using correlational analyses. The results of these analyses are summarized in Table 8. Results indicated that both measures were highly correlated. Self-sacrifice at Time 1 was also correlated with commitment to the cause and disappointment (both measured at Time 2). Results for these analyses yielded the predicted pattern of results. Self-sacrifice predicted people's commitment and disappointment if their cause was to fail, several weeks in advance.

Discussion. Results of Study 1C provided an additional piece of evidence with regard to the psychometric properties of the

Table 8
Means, Standard Deviations, and Correlations (Study 1C)

Variable	M	SD	1	2	3	4
1. Self-sacrifice Time 1	3.90	1.38	—	.66***	.28*	.22*
2. Self-sacrifice Time 2	3.69	1.29		—	.17*	.16[a]
3. Commitment	6.28	0.98			—	.14[a]
4. Disappointment	6.28	1.16				—

[a] Marginally significant.
* $p < .05$.   *** $p < .001$.

Self-Sacrifice Scale. In line with our expectations, Study 1C evinced that participants' readiness to self-sacrifice at Time 1 predicted at Time 2 (a) their readiness to self-sacrifice, (b) their commitment to the cause, and (c) their disappointment if their cause did not materialize. Thus, the present results support the contention that the readiness to self-sacrifice is a stable individual characteristic with predictive validity for future outcomes related to the cause that people deem important to defend.

Study 2A: Attitudes and Behavioral Intentions

The goal of Study 2A was to provide further evidence for the predictive validity of the Self-Sacrifice Scale. Given our definition of self-sacrifice, the scale should predict extreme forms of behavior. By extreme, we refer to nonnormative behavior (e.g., joining radical groups, engaging in violent actions) arising from a particularly high commitment to a cause assumed to be served by those behaviors. Such extreme radicalism is often associated with religious causes, but environmental causes have also seen their share of radical actions. For instance, the Animal Liberation Front, as the name suggests, has been notorious for its illegal actions (e.g., arson against slaughterhouses, breeders, fast-food restaurants) in pursuit of animal welfare. Other examples include the Sea Shepherd Conservation Society associated with sinking and disabling commercial whaling vessels. Hence, the present study specifically pertained to the environmental cause. Because scores on the Self-Sacrifice Scale were assumed to reflect individuals' tendency to commit to a cause, we predicted that high-scoring individuals on this measure would be more likely to conceive that all means to their end are justifiable. In addition, Study 2A examined how self-sacrifice influences group processes and intergroup relations. We hypothesized that because of the strong attachment and dedication to their cause, individuals with high levels of self-sacrifice should treat those who do not respect their cause (cf. outgroup individuals) with animosity (feeling angry and expressing less sympathy). In addition, we predicted that the higher one's self-sacrifice scores the more one would wish that outgroup members would eventually convert and support one's own ideological beliefs. We subjected the foregoing hypotheses to empirical scrutiny.

Method.

Participants. Seventy-six participants (48 men, 28 women; $M_{age} = 31.00$ years, $SD_{age} = 11.77$) were recruited on MTurk. The study explicitly recruited individuals for whom protecting the environment is an important cause. Participants' gender did not yield any effects on the dependent variables; hence, it is omitted from further consideration.

Procedure. Participants were invited to participate in a study on "attitudes regarding the environment." After completing the consent form, participants were given a questionnaire including several psychological measures described below.

Measures.

Readiness to self-sacrifice. Akin to prior studies, participants' readiness to self-sacrifice was measured with the Self-Sacrifice Scale adapted to "protecting the environment." The scale had good reliability ($M = 3.43$, $SD = 1.30$, $\alpha = .90$).

Willingness to engage in extreme means. Participants were presented with a list of radical environmental actions taken from a scale developed by Gousse-Lessard, Vallerand, Carbonneau, and Lafrenière (2013). They were then asked to rate the extent to which

they would be willing to engage in these actions to save the environment. Participants gave their ratings on a 7-point scale ranging from 1 (*Not agree at all*) to 7 (*Extremely agree*). Five of the means presented were violent and nonnormative actions. Specifically, these items were the following: "I would be willing to (1) Join a radical activist group to do risky or illegal actions in order to help the environmental cause, (2) Form a radical group to crack down on polluting businesses, (3) Use any means, even violent ones, to help the environmental cause, (4) Commit acts of sabotage against installations that harm the environment, and (5) Physically attack a polluting factory's representative." These items were highly interrelated ($M = 2.50$, $SD = 1.34$, $\alpha = .86$) and were thus averaged.

Attitudes toward individuals who do not respect the environment. Participants' attitudes toward people who do not respect the environment were measured on a 7-point scale ranging from 1 (*Not agree at all*) to 7 (*Very strongly agree*). Participants completed the following items: "(1) I'm angry at them," "(2) I hate them," "(3) I'm upset at them," "(4) I feel sorry for them," "(5) I feel hopeful that they will come to see the light," "(6) I forgive them," "(7) I understand them somewhat," and "(8) I still feel positive toward them." A factor analysis using maximum likelihood and oblimin rotation suggested three distinct factors composed of Items 1, 2, and 3 (anger factor, eigenvalue = 2.77, 30% of explained variance, $\alpha = .77$); Items 4 and 5 (conversion factor, eigenvalue = 1.76, 17% of explained variance, $\alpha = .57$); and Items 6, 7, and 8 (sympathy factor, eigenvalue = 1.00, 10% of explained variance, $\alpha = .73$).

Results. Consistent with our expectations, people's readiness to self-sacrifice was positively correlated to their willingness to engage in extreme means, feeling angry toward people who do not respect the environment, and wishing that they come to respect the environmental cause. Additionally, self-sacrifice was negatively related to having sympathy toward people who do not respect the environment. These results are summarized in Table 9.

Given that all these psychological dimensions were highly intercorrelated, multiple regression analyses were conducted to examine the relationship between self-sacrifice and willingness to engage in extreme environmental means, controlling for people's attitudes toward those who do not respect the environment. Results indicated that greater readiness to self-sacrifice was associated with greater willingness to engage in extreme means ($\beta = .25$, $p = .03$, $R^2 = .04$), controlling for anger ($\beta = .45$, $p < .001$, $R^2 = .16$), conversion ($\beta = .01$, $p = .92$, $R^2 = .00$), and sympathy ($\beta = .13$, $p = .21$, $R^2 = .01$).

Discussion. Results from Study 2A provided further support for the predictive validity of the Self-Sacrifice Scale. In keeping

Table 9
Means, Standard Deviations, and Correlations (Study 2A)

Variable	M	SD	1	2	3	4	5
1. Self-sacrifice	3.43	1.30	—	.35*	.27*	.42***	−.23*
2. Extreme means	2.50	1.34		—	.47***	.22*	−.07
3. Anger	3.65	1.42			—	.20	−.34*
4. Conversion	4.13	1.46				—	.11
5. Sympathy	3.68	1.27					—

* $p < .05$.   *** $p < .001$.

with the theoretical definition of martyrdom, it was found that the greater one's readiness to self-sacrifice to protect the environment, the greater one's disposition to engage in extreme means to achieve this goal. Importantly, these extreme means were not only contrary to social norms but often associated with violence (e.g., sabotage, physical attacks). This is in line with the common adage that the end justifies the means, which is commonly interpreted to say that if a goal is important enough, then all means serving that goal are justified, to the extent of being nonnormative and even harmful to others.

Beyond these findings, Study 2A evinced that the construct of self-sacrifice has further social implications. Indeed, results demonstrated that self-sacrifice predicted animosity (more anger and less sympathy) toward people holding different ideological beliefs. Yet, despite these negative feelings and attitudes, the Self-Sacrifice Scale positively predicted how much environmentalists wished that others with diverging opinions would climb on the bandwagon and espouse similar beliefs. These results resonate well with classic findings on ingroup and outgroup dynamics (e.g., ingroup favoritism; Tajfel & Turner, 1979). More importantly, however, these results demonstrate that even ideologies that appear peaceful on the surface (i.e., saving the environment) can be conducive to aggressiveness when pursued too vigorously.

Study 2B: Liberation Tigers of Tamil Eelam

In Study 2B, rather than using a convenience sample of undergraduates or MTurk workers, we included a group of incarcerated terrorists. The purpose of using this sample was to increase the generalizability and the pertinence of our findings to real-world phenomena. The sample was composed of Tamil Tigers (Liberation Tigers of Tamil Eelam, or LTTE), an organization associated with terrorism and war crimes. The LTTE has been identified as a terrorist organization by 32 countries, including the United States, Canada, and other Western nations. It is an organization credited with the invention of the suicide belt; assassinations of numerous politicians, military figures, and journalists; and perpetration of the largest number of suicidal attacks of any terrorist organization. Historically, the ideology of the Tamil Tigers has primarily focused on creating a separate Tamil state in the Northern part of Sri Lanka. We predicted that detainees' readiness to self-sacrifice would be positively associated with support for violent means. To take into account the cultural context of the LTTE, the concept of support for violent means was operationalized as Tamil Tigers' willingness to take arms to create a separate Tamil state. In our analyses, we controlled for emotional and cognitive dispositions to aggressive behavior to demonstrate that readiness to self-sacrifice would predict support for violent means above and beyond these individual dispositions.

Method.

Participants. Two hundred and thirty-four individuals (all men; M_{age} = 32.70 years, SD_{age} = 6.40) associated with the LTTE were recruited for this study. These individuals were detained in Sri Lanka, in the region of Boosa. These individuals had been flagged as the most hardcore members of the LTTE, responsible for the killing, torturing, and kidnapping of numerous Sinhalese politicians, military figures, and others. They also had been prepared to commit suicide attacks on Sinhalese strategic targets. Finally, these individuals had lied regarding their involvement

with the LTTE and tried to hide in the local population to avoid prosecution. Notwithstanding these severe crimes, these individuals were part of a deradicalization program spearheaded by the government of Sri Lanka. The goal of the deradicalization program was to provide vocational education, counseling, and spiritual guidance to its beneficiaries with the long-term objective of reintegrating them into society.

Procedure. The survey was first introduced verbally by one research team member who read a script in the Tamil language. The script mentioned that the goal of the survey was to get to know the thoughts and beliefs of the detainees on various topics. The script also made it clear that the survey was independent of governmental agencies or prison authorities and that no benefit or penalty would result from their participation (or possible refusal to participate). The detainees signed a standard consent form informing them that their responses would be anonymous and aggregated for statistical purposes and that they could quit at any time without penalty. Detainees were handed a questionnaire packet and a pen (which was theirs to keep upon completion of the questionnaire) and were asked to respond to the questionnaire on their own. The research team stayed on the periphery to answer any questions that may have arisen, while a small group of (unarmed) military and civilians (rehabilitation staff) stayed on the outer periphery to supervise the process. Data collection proceeded without glitches, concerns, or resistance (i.e., all prisoners agreed to complete the survey).

Measures.

Readiness to self-sacrifice. Akin to previous studies, the Self-Sacrifice Scale (M = 2.96, SD = 1.20) was used to measure participants' readiness to self-sacrifice (α = .68). The scale was translated into the Tamil language using the back-translation technique.

Emotional hostility. Detainees' emotional disposition toward aggression (M = 1.41, SD = .66) was measured with two items. They were asked to indicate "To what extent have you felt this way during the past two weeks: (1) Angry and (2) Hostile." Detainees answered these two questions on a 5-point scale ranging from 1 (*Very slightly*) to 5 (*Extremely*). Both items were correlated, $r(232)$ = .38, p < .001, and thus averaged.

Dissipation–rumination. Detainees' cognitive disposition toward aggression was assessed using three items taken from the Dissipation–Rumination Scale (M = 2.56, SD = 1.43, α = .69). This scale measures experiences of provocation and thoughts of retaliation (Caprara, 1986). Those scoring low on this scale (high dissipaters–low ruminators) are not expected to harbor feelings of vengeance, whereas those scoring high on this scale (low dissipaters–high ruminators) are expected to deliberate more frequently over thoughts of retaliation (Konecni, 1975). Prior research has evinced that the Dissipation–Rumination Scale correlates positively with hostile behaviors (Caprara, 1987; Zelli, 1984). Items included "I will always remember the injustices I have suffered," "It takes many years for me to get rid of a grudge," and "I hold a grudge for a very long time towards people who have offended me." Detainees provided their answers using a 7-point scale ranging from 1 (*Completely false for me*) to 7 (*Completely true for me*).

Months of detention. Participants indicated the number of months they had been taking part in the deradicalization program (M = 34.68, SD = 5.80). This measure served as a control

variable; presumably, the greater the time spent in this program, the less the support for armed struggled (assuming that the deradicalization program is indeed effective).

Support for armed struggle. Tamil Tigers' personal disposition to take arms and impose through force a Tamil state was measured via a 28-item scale ($M = 1.97$, $SD = .75$, $\alpha = .87$). Sample items: "Fighting is the only way to get a separate state," "Armed fight is a personal obligation of all Tamils today," "Suicide bombers will be rewarded for their deed in their afterlife," and "I would support a call for an armed struggle." Participants gave their answers on a 7-point Likert-type scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*).

Results. Multiple regression analyses were conducted to test our specific hypotheses with regard to support for violence among the most radical members of the LTTE (means, standard deviations, and correlations for all measures are presented in Table 10). Support for armed struggle was regressed on self-sacrifice, controlling for emotional hostility, dissipation–rumination, and months of detention. Results indicated that self-sacrifice ($\beta = .18$, $p = .002$, $R^2 = .02$), feelings of hostility ($\beta = .19$, $p = .002$, $R^2 = .03$), and dissipation–rumination ($\beta = .34$, $p < .001$, $R^2 = .09$) all positively predicted support for armed struggle. Months of detention ($\beta = .08$, $p = .14$, $R^2 = .00$) were unrelated to support for armed struggle.

Discussion. Results of Study 2B replicated the results of Study 2A by demonstrating that people's readiness to self-sacrifice is positively related to the use of violent means in the name of a greater cause. In the case of the Tamil Tigers, violent means included taking arms and conducting suicide bombings to achieve an independent Tamil state. Thus, the present findings resonate well with real-world phenomena such as modern political conflicts commonly plagued with violent atrocities. This is not to say, however, that all forms of ideological commitment necessarily lead to the use of violent means. These are probably dictated by the ideology itself, especially in the case of the Tamil Tigers and their experience with warfare. It is also important to note that despite the LTTE's prior involvement in warfare, Tamil Tigers' support for armed struggle was relatively low ($M = 1.49$, $SD = .86$). Considering that these inmates have been part of a deradicalization program for an extensive period of time ($M = 34.64$ months, $SD = 5.77$), one possible explanation for these findings is that the program has been effective in reducing their disposition toward violence. Notwithstanding this observation, self-sacrifice was still an important predictor of support for armed struggle, controlling for emotional and cognitive dispositions toward aggression. This lends support for the predictive validity of the Self-Sacrifice Scale above and beyond other predispositions toward violence.

Study 3: Automatic Behavior

Study 3 aimed to provide further evidence for the predictive validity of the Self-Sacrifice Scale. Undoubtedly, the act of self-sacrifice entails costly consequences (e.g., giving away one's possessions, losing one's life) that can be expected to weigh on one's judgment. If the cost is considerable, then individuals may hesitate and even reconsider whether self-sacrifice is an option. However, individuals' readiness to self-sacrifice should attenuate this hesitancy and accelerate the speed at which they decide to carry out an act of self-sacrifice. These reactions could potentially

be so quick that they could occur automatically, without being modulated by consciousness. Study 3 aimed to document this phenomenon by investigating, through a video game in a laboratory setting, how quickly individuals would pull the trigger to blow themselves up as a function of their disposition to self-sacrifice.

Method.

Participants. One hundred and fifty-five (101 men, 54 women; $M_{age} = 19.71$ years, $SD_{age} = 2.13$) University of Maryland undergraduate students were recruited in exchange for course credits. Participants' gender did not yield any effects on the dependent variables; hence, it is not considered further.

Procedure. Upon arrival at the lab, participants were ushered to a private room. They then completed the Self-Sacrifice Scale along with a series of filler scales intended to disguise the true purpose of the experiment. Then, participants were led to a different room to play a computer video game named "War of the Worlds." To play the game, participants were given a joystick, and instructions on the screen explained how to use the buttons on the device. In the science-fiction game, participants played the role of a space traveler aboard a spaceship exploring the solar system. Following a blast of noise, their character discovered that the spaceship was invaded by Aliens and that other crew members had disappeared. Their character realized that it was absolutely certain that "if the Alien threat is not neutralized now, they will invade Earth and humanity will be exterminated." The only weapon available to neutralize the threat was a bomb-belt and its detonator. Participants were then told that their objective was to neutralize the Alien threat by detonating the bomb attached to them, at the right time. In doing so, participants were told that they would kill the Aliens and save humanity; however, they would also blow themselves up and die in the process. Participants were told that they would explore the spaceship and be presented with several images. They were instructed to press the joystick's trigger when presented with the image of an Alien and holster their bomb using a different button when presented with the image of a neutral object. All images were presented before the task began so that participants could familiarize themselves with them. In addition, participants were told that they would be given only one chance to activate their bomb and that they would need to act as fast and as accurately as possible to sacrifice their life and to accomplish their mission.[2]

During the task, four neutral images (a chair, a computer, a lamp, and a table) and one target image (Alien) were presented to participants. The stimuli appeared in the same order for all participants, and the fifth image was the target stimulus. Before each image, a message appeared in the middle of the screen asking participants to "get ready." Reaction times to all stimuli were measured in milliseconds. A funneled debriefing procedure (Chartrand & Bargh, 1996) was used to assess whether participants had guessed the nature of the study; in fact, no participants guessed the true purpose of the experiment.

Measure.

Readiness to self-sacrifice. Akin to previous studies, the Self-Sacrifice Scale was used to measure participants' readiness to self-sacrifice ($M = 4.52$; $SD = .70$, $\alpha = .69$). The scale, however,

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[2] An adapted version of the video game can be played online at www .motivatedcognition.com. To use this video game for your own research, please contact the first author.

Table 10
Means, Standard Deviations, and Correlations (Study 2B)

Variable	M	SD	1	2	3	4	5
1. Self-sacrifice	2.96	1.20	—	.31***	.30***	.05	.35***
2. Emotional disposition toward aggression	1.41	0.66		—	.37***	.08	.38***
3. Dissipation–rumination	2.56	1.43			—	.03	.47***
4. Months detention	34.68	5.80				—	.11
5. Support for armed struggle	1.97	0.75					—

*** $p < .001$.

was generic in that participants did not have to mention a specific cause (e.g., "I would be prepared to endure intense suffering if it meant defending an important cause").

Results. Data were analyzed using hierarchical linear modeling (HLM) with HLM 6.0 (Raudenbush, Bryk, & Congdon, 2004) given that the present study involved a hierarchically structured data set where reaction times to different stimuli ($M = 525.43$, $SD = 338.58$) are nested under participants' dispositional measure (i.e., self-sacrifice). HLM accounts for the shared variance due to multiple observations within the same participant. Therefore, the parameter estimates generated from HLM (particularly the standard errors) are less biased than are those generated from analyses of variance when the data are nested within participants (Mundform & Schultz, 2002; Raudenbush & Bryk, 2002). The following HLM analyses were conducted with the restricted maximum-likelihood method of estimation. Incorrect responses during the video game (3.4% of all responses) were removed because their interpretation would be ambiguous (see Bargh, Chaiken, Govender, & Pratto, 1992; Fazio, 1990).

HLM analyses were conducted to predict reaction times from individuals' readiness to self-sacrifice (between-person factor), the category of image presented (within-person factor), and their interaction. Accordingly, image category was dummy coded with a score of 1 assigned to reaction times associated with the Alien target and a score of 0 assigned to reaction times associated with neutral images. Following Aiken and West's (1991) procedure, all predictors were mean centered. Because the reaction task did not include any practice session, reaction time to the first neutral stimulus (i.e., the table) was considered a practice trial for everyone and was not included in the present statistical analysis.

Results (see Table 11) indicated that self-sacrifice did not influence reaction times overall ($\beta = 16.74$, $p = .25$). In addition, results indicated an effect of image category on reaction times ($\beta = -72.36$, $p = .03$). Specifically, reaction times were shown to be faster for the Alien image than for the neutral objects. More

importantly, results revealed that the within-person relationship between image category and reaction times was moderated by self-sacrifice ($\beta = -40.03$, $p = .04$). The overall model explained 1.4% of the variance.

Follow-up simple slope tests (Aiken & West, 1991) for the Self-Sacrifice × Image Category interaction showed that individuals with high levels of self-sacrifice (i.e., one standard deviation unit above the mean) pressed the joystick's trigger faster when exposed to the Alien image than when exposed to neutral objects ($\beta = -112.39$, $t = -3.35$, $p = .00$). In contrast, for individuals who were low (i.e., one standard deviation unit below the mean) on self-sacrifice, reaction times to the Alien image did not differ from their reaction times to the neutral images ($\beta = -32.32$, $t = 0.74$, $p = .45$). In sum, the present results demonstrate that people's disposition toward self-sacrifice reduces their hesitation to self-sacrifice for a given goal. Figure 2 illustrates this pattern of results.

Discussion. The present results provide additional support for the predictive validity of the Self-Sacrifice Scale. Specifically, these results demonstrate that greater readiness to self-sacrifice reduces one's hesitation to engage in self-sacrificial behavior. In
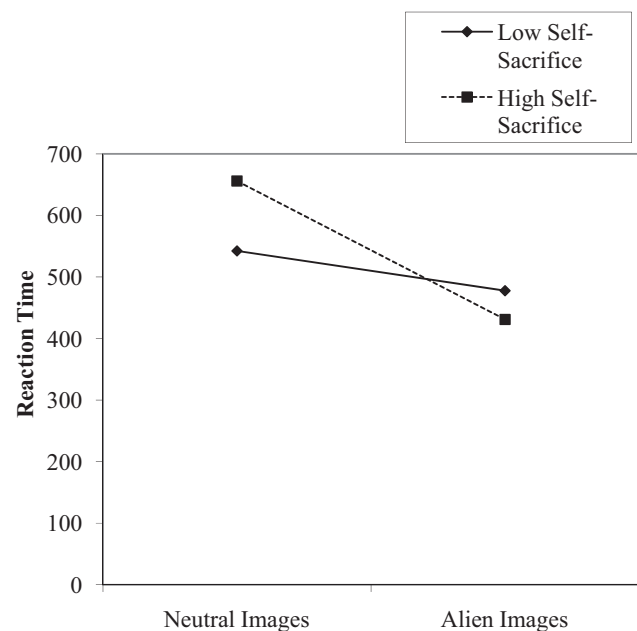
Table 11
Results of the Hierarchical Linear Modeling Analysis Predicting Reaction Times From Self-Sacrifice and Image Category (Study 3)

Variable	Coefficient	*t*-ratio	*p*-value
Self-sacrifice	16.74	1.15	.25
Image category	−72.36	−2.17	.03*
Self-Sacrifice × Image Category	−40.03	−2.03	.04*

* $p < .05$.

Figure 2. Reaction times for detonating or holstering the bomb-belt as a function of image category and participants' readiness to self-sacrifice (Study 3).

the present study, individuals blew themselves up in a science-fiction video game more rapidly as a function of their readiness to self-sacrifice. These reactions were spontaneous and probably occurred too rapidly to be modulated by conscious thinking. Interestingly, readiness to self-sacrifice did not decrease reaction times indiscriminately: Facilitation effects occurred only when individuals were presented with the target picture of the Alien (as opposed to a neutral image). This rules out the alternative explanation that individuals with high levels of readiness to self-sacrifice are trigger-happy or simply have better reflexes.

Study 4: Costly Behavior

So far, we have accumulated evidence that the Self-Sacrifice Scale is a reliable psychometric tool with discriminant and convergent validity (Studies 1A–1C). We have also demonstrated that the scale correlates positively with the willingness to engage in extreme behavior and felt animosity toward outgroup members (Studies 2A–2B). We also found the Self-Sacrifice Scale to be negatively correlated with hesitancy to self-sacrifice (Study 3). Despite these encouraging results, one could argue that the latter studies have been devoid of actual cost. In others words, the previous studies have not addressed head on whether the Self-Sacrifice Scale actually predicts true self-sacrificial behaviors. Study 4 thus aimed to address this critique by investigating the relationship between the Self-Sacrifice Scale and individuals' willingness to endure pain, which involves a cost to well-being. We predicted that individuals would be willing to (a) undergo greater pain (b) for a longer period of time as a function of their readiness to self-sacrifice to support a personal cause.

Method.

Participants. One hundred and nineteen University of Maryland undergraduates (39 men, 80 women; $M_{age} = 20.61$ years, $SD_{age} = 3.11$) were recruited for a study on attitudes. Participants were given $5 for their participation.

Procedure. Upon arrival at the lab, participants were ushered into a private room. Participants were told that they would participate in two unrelated studies. In the first study, participants were given a questionnaire packet that included the Self-Sacrifice Scale, demographics, and several filler scales included in order to disguise the true purpose of the study. Once completed, the experimenter collected the questionnaire and told the participants that they could now participate in a second study. The experimenter made sure that the participants understood that the second study was completely voluntary and that their participation or a refusal to participate would have no bearing on the receipt of their payment. The experimenter went on and explained that the second experiment was a study on pain in which the main focus was to measure how much pain individuals can tolerate. Participants were told that pain would be inflicted via teaspoons of hot sauce (Tabasco sauce). Lastly, participants were told that because they would engage in the second study on a purely voluntary basis, the experimenter would give $1 to a charity supporting the cause they wrote down earlier *for each teaspoon* of hot sauce they would eat. If participants decided not to engage in the second study, they were thanked and fully debriefed; if they decided to participate, the experimenter brought three bottles of Tabasco sauce, a beaker, and a plastic spoon. Participants were instructed that they could stop anytime or continue indefinitely if they wanted to. Between each tea-

spoon, participants completed a measure of pain and were asked if they wanted to continue or stop the pain study. Additionally, the experimenter updated on the computer screen how many teaspoons of hot sauce had been administered. Each teaspoon contained 3 ml of hot sauce. Once participants decided to stop the pain study, the experimenter jotted down which organization to give the money to.

Measures.

Readiness to self-sacrifice. Akin to previous studies, the Self-Sacrifice Scale ($M = 3.92$, $SD = 1.26$) measured participants' readiness to self-sacrifice ($\alpha = .85$). Participants mentioned supporting causes such as animal rights, helping abused children, and world hunger.

Pain Scale. Participants' pain was measured after each teaspoon of hot sauce using the Wong-Baker Pain Scale (Wong & Baker, 1988). Participants indicated how much pain they felt by circling the appropriate face ($M = 4.65$, $SD = 2.99$). The scale ranged from 0 (*No pain*) to 10 (*Worst pain*).

Teaspoons. The number of teaspoons ($M = 3.64$, $SD = 4.56$) taken by participants during the pain study varied between 0 and 30.

Results. In our first analysis, we examined whether the readiness to self-sacrifice influenced how many teaspoons of hot sauce participants actually ate to support their cause. A look at the distribution of the teaspoon data indicated that the distribution was heavily skewed (2.99, $SE = .22$), with low values being the most frequent and high values being rarely observed. Indeed, count data usually display a Poisson distribution and consequently violate assumptions of linear regression models (Gardner, Mulvey, & Shaw, 1995). To account for the nonnormal distribution of our data, we specified a Poisson distribution in our regression model. Results indicated that self-sacrifice positively predicted the number of teaspoons taken during the pain study, $\beta = .21$, $\chi^2(1, N = 119) = 21.51$, $p < .001$.

Standard multiple regression analyses were conducted to assess the influence of self-sacrifice on the last-reported pain assessment during the pain study. Results indicated that the greater one's readiness to self-sacrifice, the greater the perceived pain before stopping the experiment ($\beta = .18$, $p < .05$, $R^2 = .02$). Gender did impact the amount of hot sauce participants ate and the pain experienced at the last teaspoon of hot sauce. Specifically, it was found that men ($M = 5.87$, $SD = 6.33$) ate more hot sauce than women ($M = 2.55$, $SD = 2.50$), $F(117) = 15.61$, $p = .001$, $\eta_p^2 = .11$. Also, men ($M = 5.33$, $SD = 2.64$), reported more pain than women ($M = 4.32$, $SD = 3.10$), $F(117) = 3.02$, $p = .08$, $\eta_p^2 = .02$ (marginally significant). However, the previously described results remained statistically significant when controlling for gender differences.

Discussion. Results of Study 4 confirmed that the Self-Sacrifice Scale predicts behaviors that entail a personal cost. Specifically, it was found that the greater one's readiness to self-sacrifice, the greater one's disposition to endure pain to support an important personal cause. This was shown in two ways. First, self-sacrifice predicted the number of teaspoons of hot sauce that participants consumed in order to donate money to a charity related to their cause. Second, self-sacrifice predicted the amount of pain participants experienced before quitting the pain experiment. Consequently, Study 4 addressed the limitations of prior studies by demonstrating that individuals are actually willing to go

through a painful effort to support an important cause. In so doing, Study 4 also evinced that self-sacrifice can be associated with prosocial behaviors.

Study 5: Costly Behavior and Morality

The main purpose of Study 5 was to conceptually replicate and extend the findings of Study 4 in several ways. First of all, in a religious sample, we examined how the readiness to self-sacrifice relates to other types of self-sacrificial behaviors, in this case, giving money to a religious charity. The nature of the sample was chosen given the popularity of religion as an important life domain (ranked second in Study 1A) and its historical and social relevance to the topic of self-sacrifice, as described in the introduction. Another objective of Study 5 was to test specific predictions with regard to our theoretical definition of self-sacrifice. We aimed to demonstrate that self-sacrifice entails total dedication to the cause to the point where one's self-interest is entirely subjugated by the higher cause one has chosen to serve. According to Frankl (2000), this detachment from self-interest in the pursuit of a cause of recognized societal significance refers to a state of *self-transcendence*. One way of testing this idea involves comparing the relative importance attributed to domains such as one's life, one's cause, and the lives of others. We reasoned that the readiness to self-sacrifice for a cause should be associated with three comparative judgments, namely, attributing (a) more importance to one's cause versus one's life, (b) more importance to one's cause versus the lives of others, and (c) more importance to the lives of others versus one's life. Furthermore, Study 5 examined how self-sacrifice influences morality judgments, especially as it relates to other people self-sacrificing for the same cause. We predicted that one's readiness to self-sacrifice should be positively associated with perceiving other people's self-sacrificing behaviors as heroic, legitimate, and moral. Lastly, Study 5 examined all the aforementioned hypotheses while controlling for personality measures previously shown to correlate positively with self-sacrifice, namely, harmonious and obsessive passion. Doing so allowed us to assess the predictive validity of self-sacrifice above and beyond these measures related to high goal commitment.

Method.

Participants. Two hundred and eighty-one Christians (116 men, 165 women; $M_{age} = 35.29$ years, $SD_{age} = 13.72$) from the United States were recruited on MTurk. Participants' gender did not yield any effects on the dependent variables; hence, it is omitted from further consideration.

Procedure. Participants were invited to partake in a study on religious attitudes. After completing the consent form, participants were given a questionnaire including measures of self-sacrifice and the Passion Scale. Participants were also asked to rate the extent to which they valued their life, the lives of others, and their religion. Next, participants read a factual newspaper blurb describing a bomb blast targeting Christians outside a church in Baghdad on Christmas Day 2013. Participants were then informed that an American association (Barnabas Aid) sends financial supports for projects helping Christians suffering discrimination, oppression, and persecution as a consequence of their faith. Participants were informed that they could voluntarily donate their own money to support this organization. Specifically, if participants agreed to donate money, they could do so by giving a portion of their

remuneration for completing the survey (between $0.00 and $0.40).

Lastly, participants were presented with a fictitious story in which a Christian man tried to save a Christian family from being persecuted by a group of three Muslim men. By intervening, the Christian man allowed the family to escape while losing his life at the hands of the aggressors. Participants were asked to rate the extent to which the man's actions were moral. This last part of the study allowed us to test whether people's readiness to self-sacrifice influences morality judgments with regard to people dying for the same cause.

Measures.

Readiness to self-sacrifice. Participants' readiness to self-sacrifice was measured with the Self-Sacrifice Scale ($M = 4.26$, $SD = 1.54$, $\alpha = .91$). The scale was adapted to the cause of religion (e.g., "I would be prepared to endure intense suffering if it meant defending my religion").

Passion Scale. Participants completed the harmonious (e.g., "My religion is in harmony with the other activities in my life"; $M = 4.77$, $SD = 1.34$, $\alpha = .90$) and obsessive Passion Scale (e.g., "I have almost an obsessive feeling for my religion"; $M = 2.57$, $SD = 1.41$, $\alpha = .90$) adapted to religion.

Relative importance. Participants were asked to rate the importance of their personal life ($M = 39.38$, $SD = 18.45$), their cause ($M = 30.57$, $SD = 18.20$), and the lives of others ($M = 30.03$, $SD = 13.63$) using a constant sum scale. Specifically, participants were instructed to apportion 100 points between all three categories. This approach has the advantage of juxtaposing the relative importance of several dimensions simultaneously. Three difference scores were computed: (a) the importance of one's religion subtracted from the importance of one's life, (b) the importance attributed to other people's lives subtracted from the importance of one' religion, and (c) the importance of other people's lives subtracted from the importance of one's life.

Donation. Participants decided to give, or not, to a charity that supports Christians who suffer from discrimination, oppression, and persecution. If they chose to donate, participants indicated how much of their compensation they would actually donate using a slider scale (between $0.00 and $0.40; $M = \$0.07$, $SD = 12.68$).

Morality. Participants' moral evaluation ($M = 3.94$, $SD = .76$, $\alpha = .85$) of the Christian man who self-sacrificed to save the life of fellow Christians was assessed with the following items: "(1) He is a hero," "(2) He is a martyr," "(3) I have admiration for this man," "(4) I identify with this person," "(5) His actions were legitimate," and "(6) He is a moral man." Responses to these items were given on a 5-point scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). A CFA using maximum likelihood and oblimin rotation suggested the presence of a unique factor for these items.

Results. Means, standard deviations, and correlations for all measures are presented in Table 12.

Relative importance. Multiple regression analyses were conducted on participants' ratings of the importance of their life over the importance of their religion (computed as one's life minus one's religion). Results indicated that self-sacrifice ($\beta = -.48$, $p < .001$, $R^2 = .08$) and obsessive ($\beta = -.12$, $p < .05$, $R^2 = .01$) and harmonious passion ($\beta = -.10$, $p = .05$, $R^2 = .00$) were all negatively related to the evaluations of one's life over one's religion.

Table 12
Means, Standard Deviations, and Correlations (Study 5)

Variable	M	SD	1	2	3	4	5	6	7	8
1. Self-sacrifice	4.26	1.54	—	.42***	.34***	−.57***	−.30***	.42***	.18*	.26***
2. Harmonious passion	4.77	1.34		—	.42***	−.36***	−.17*	.29***	.11	.28***
3. Obsessive passion	2.57	1.51			—	−.33***	−.07	.35***	−.09	.07
4. Life over religion	8.80	34.03				—	.64***	−.63***	−.15*	−.26***
5. Life over others	9.34	26.86					—	.18*	−.14*	−.19***
6. Religion over others	0.53	26.35						—	.05	.14*
7. Donation	7.77	12.68							—	.19***
8. Support for the character	3.94	0.76								—

* $p < .05$.   *** $p < .001$.

Similar analyses were conducted on how much importance participants attributed to their religion over the lives of others (computed as one's religion minus lives of others). Results indicated that self-sacrifice ($\beta = .32$, $p < .001$, $R^2 = .08$) and obsessive passion ($\beta = .21$, $p < .001$, $R^2 = .03$) were both positively related to attributing more importance to one's religion over other people's lives. Harmonious passion ($\beta = .06$, $p = .30$, $R^2 = .00$) was unrelated to this dimension.

Lastly, regression analyses were conducted on how much importance participants attributed to their own life over the lives of others (computed as one's life minus lives of others). Results indicated that self-sacrifice ($\beta = −.29$, $p < .001$, $R^2 = .06$) was negatively related to this dimension, whereas obsessive passion ($\beta = .05$, $p = .40$, $R^2 = .00$) and harmonious passion ($\beta = −.07$, $p = .25$, $R^2 = .00$) were unrelated to this dimension.

Giving to charity. Logistic regression analyses were conducted in order to examine whether self-sacrifice and the Passion Scale had any impact on participants' likelihood of choosing to give money to the Christian charity. Participants were given a score of 1 or 0 if they agreed to donate or not, respectively. Results indicated that self-sacrifice, $\beta = .42$, Exp(B) = 1.52, $p < .01$, and obsessive passion, $\beta = −.35$, Exp(B) = .70, $p = .01$, were positively and negatively related to choosing to donate, respectively. Harmonious passion, $\beta = .13$, Exp(B) = 1.14, $p = .36$, was unrelated to giving to charity.

Then, multiple regression analyses were conducted to determine if self-sacrifice and the two types of passion influenced the amount of money people actually donated. Results indicated that self-sacrifice ($\beta = .20$, $p < .001$, $R^2 = .03$) positively predicted the amount of money participants donated to the Christian charity, whereas obsessive passion ($\beta = −.20$, $p < .001$, $R^2 = .03$) negatively predicted it. Harmonious passion ($\beta = .11$, $p = .09$, $R^2 = .00$) was unrelated to giving to charity.

Morality judgments. Further analyses examined whether self-sacrifice would influence morality judgments, controlling for harmonious and obsessive passion. Results indicated that self-sacrifice ($\beta = .18$, $p < .01$, $R^2 = .03$) and harmonious passion ($\beta = .24$, $p < .001$, $R^2 = .03$) were positively related to perceiving the protagonist as moral, whereas obsessive passion ($\beta = −.09$, $p = .15$, $R^2 = .00$) was unrelated to it.

Discussion. Results of Study 5 provided support for our predictions. Specifically, using a religious sample, Study 5 conceptually replicated results from Study 4 by demonstrating that self-sacrifice is related to other types of self-sacrificial behaviors such as donating money for a cause one believes in. In relation to this

phenomenon, Study 5 investigated the relation between self-sacrifice and Frankl's (1985, 2000) concept of self-transcendence, which was conceptualized as diminished self-interest and attributing great importance to a cause vis-à-vis other domains. In keeping with this concept and our theoretical framework, we demonstrated that self-sacrifice is related to attributing (a) more importance to one's cause over one's life, (b) more importance to one's cause over the lives of others, and (c) more importance to the lives of others over one's life. This provides further empirical evidence for the notion that self-sacrifice entails dedication to a cause, but it also demonstrate that it fosters self-effacement (e.g., attributing more importance to the lives of others over one's life), which was not highlighted until now. Study 5 also provided evidence for the relation between self-sacrifice and morality judgments. A positive relationship was found between one's readiness to self-sacrifice and perceiving other people self-sacrificing for the same cause as righteous and heroic. This finding resonates well with prior findings that people who share similar goals and values (e.g., ingroup members) are perceived as more moral than individuals espousing different ones (e.g., Brewer & Campbell, 1976; Leach, Ellemers, & Barreto, 2007; Levine & Campbell, 1972). Attesting to the singularity of the self-sacrifice measure, all previously described results were found controlling for harmonious and obsessive passion, two motivational constructs previously related to goal commitment and self-sacrifice (see Study 1A). While all three scales predicted attributing more importance to one's cause over one's life, results obtained on all other outcomes described here were much different. For instance, whereas self-sacrifice and obsessive passion were both related to attributing more importance to one's religion over other people's lives, only self-sacrifice was related to attributing more importance to other people's lives over one's life. In other words, both scales predicted putting the cause above the lives of others, but only self-sacrifice was related to self-effacement. Relatedly, only self-sacrifice was positively related to donating money to charity: Harmonious passion was unrelated to donating, and obsessive passion was negatively related to it. Altogether, these results demonstrate the predictive validity and uniqueness of the Self-Sacrifice Scale over and above other related measures.

General Discussion

The present research consists of one of the first empirical forays into a topic of contemporary and historical importance: the psychology of martyrdom. Our goal was to create a new tool to

quantitatively assess individuals' propensity toward self-sacrifice, examine this construct in relation to its antecedents, and document its importance for a vast repertoire of social phenomena. Supporting our conceptualization of martyrdom, we adduced evidence from eight different studies, making a case for the psychometric properties of the Self-Sacrifice Scale, while gaining substantive information on this motivational construct.

Results from EFAs and CFAs revealed that the Self-Sacrifice Scale is composed of a single factor with the addition of two method factors (Study 1A). Furthermore, the scale exhibited good convergent validity: It predicted positive evaluation and commitment to a given cause and was positively correlated with altruism, meaning in life, belief in God, and other relevant motivational constructs related to high goal commitment such as harmonious and obsessive passions (Studies 1A–1B). Exploratory analyses revealed that the Self-Sacrifice Scale was associated with impression management, but did not show any clear relationships with the Big Five personality dimensions. Also in line with expectations, the scale had good discriminant validity and was not related to optimism, fatalism, self-deceptive enhancement, or psychopathological indices such as depression, suicidal ideation, or different forms of psychopathy (Study 1B). The Self-Sacrifice Scale also demonstrated good test–retest reliability (Study 1C) and the ability to predict relevant future outcomes (i.e., goal commitment and disappointment if the cause was to fail).

In addition to being psychometrically sound, the Self-Sacrifice Scale exhibited satisfactory predictive validity with regard to affective, cognitive, and behavioral phenomena. It positively predicted people's willingness to engage in extreme means to promote a cause (e.g., joining radical groups, sabotaging, and physically attacking others) and predicted the extent to which people felt animosity toward other people with opposing beliefs (Study 2A). Attesting to the relevance of the scale for suicide terrorism, these results were replicated in Study 2B using a sample of incarcerated Tamil Tigers. Also in Studies 3 and 4, results indicated that the greater the readiness to self-sacrifice (as measured by the scale), the less people hesitated to vicariously kill themselves in a video game (faster pulling of the trigger to blow themselves up to accomplish their goal; Study 3) and the more they actually engaged in costly means, involving intense and prolonged pain (through the swallowing of hot sauce), to support a cause of great personal importance (Study 4).

In our last study, self-sacrifice was found to be associated with (a) helping others through giving money to a charity, (b) attributing more importance to one's cause over one's life, (c) attributing more importance to one's cause over the lives of others, and (d) attributing more importance to the lives of others over one's life. The latter results provided support for Frankl's (1985, 2000) concept of self-transcendence, which posits that serving a higher cause fosters a diminution of self-interest. Additionally, Study 5 evinced a positive relationship between one's readiness to self-sacrifice and perceiving other people self-sacrificing for a similar cause as righteous.

Overall, these findings provide strong support for the conceptualization of martyrdom and for the Self-Sacrifice Scale, whose future purpose is to test theoretically driven hypotheses in the social sciences, in particular the psychology of terrorism, the psychology of altruism, and the psychology of meaning.

Future Directions

The present findings invite second-generation research on the psychology of martyrdom where several theoretical questions await further investigation. One important question is, what are the motivational forces potentiating self-sacrifice? As the present research attests, self-sacrifice cuts both ways and can promote achieving socially positive outcomes (e.g., raising money for charity) or negative outcomes (e.g., harming other people). Therefore, two crucial questions would be the following: (a) When can we expect readiness to self-sacrifice to turn sour and provoke mischievous behavior, and (b) how can we find ways to redirect these motivational forces in a constructive direction, paving the way to conciliation, prosocial behaviors, and harmony in intergroup relations?

A potential candidate formulation to clarify these questions is the quest for personal significance theory (Kruglanski, Bélanger, et al., 2013; Kruglanski et al., 2009, 2014) which, largely influenced by Frankl's work mentioned earlier, proposes that individuals are fundamentally motivated to attain *personal significance* (to be someone, to be recognized, to matter) by attaining what is culturally condoned as valuable and worth attaining. Kruglanski and colleagues proposed that when the quest for personal significance is awakened (by significance loss or the potential for significance gain), individuals are likely to turn to group ideologies and collectivistic goals to restore their lost significance. In turn, collectivistic ideologies "elucidate what a significance gain according to one's group consists of and afford a way of preventing a significance loss involving adherence to these ideological dictates" (Kruglanski et al., 2009; p. 349). Implicit in the latter statement is that significance quest can lead to engagement in either violent or peaceful means depending on the specific *ideology* supported by the group to which individuals have turned to restore their significance. Commitment to the group restores one's significance because it is rewarded in several ways (prestige, resources, feeling of belonging) and heroes and martyrs are remembered long after their death. By joining the collective memory of one's group, individuals can transcend death and live on in the memories of others (Elster, 2005). As Kruglanski et al. (2009) pointed out, "paradoxically, the willingness to die in an act of suicidal terrorism may be motivated by the desire to live forever" (p. 336).

In light of these notions, it would be expected that individuals who have lost significance (for any reason) would show greater readiness to self-sacrifice than individuals for whom the goal of personal significance is not activated. Although not directly connected to the topic of self-sacrifice, research has provided partial evidence for this possibility. For instance, research guided under terror management theory, which posits that death anxiety is the utter threat to one's significance, has found that death anxiety increases commitment to cultural worldviews (Greenberg, Solomon, & Pyszczynski, 1997). Similarly, identity consolidation theory (McGregor, 1998, 2003) proposes that people facing personal uncertainty may attempt to reduce it by reacting with excessive zeal, including holding tenacious convictions and being intolerant of dissent from an idealistic cause (McGregor, Gailliot, Vasquez, & Nash, 2007; McGregor & Marigold, 2003; McGregor, Nail, Marigold, & Kang, 2005). Support for the hypothesis that the quest for significance is a potent catalyst of self-sacrificial behavior would raise the possibility that this motive can be redirected

toward prosocial behaviors as well as destructive ones. Consistent with the foregoing discussion, the role of ideology could also represent an important direction for future research. When individuals subscribe to destructive ideologies, they should become motivated to self-sacrifice in ways that hurt others (e.g., through a violent self-sacrifice). In contrast, individuals for whom the quest for significance is activated concomitantly with peaceful values should be more inclined to engage in peaceful self-sacrificial behaviors.

Practical Implications

Aside from the difficulty of getting access to individuals who have been involved in terrorism, researchers have lacked the necessary psychometric tools to measure individuals' desire to become a martyr and to self-sacrifice for an important cause. Without such an instrument, hypothesis testing and theoretical refinement are difficult to carry out. The presently developed Self-Sacrifice Scale could be of importance for interventions concerning the rehabilitation of terrorists. For instance, in the last decade, several countries (Saudi Arabia, Yemen, Singapore, Indonesia, Sri Lanka) have set up deradicalization programs to augment their counterterrorism strategies. In essence, deradicalization programs are attempts to change the behavior and beliefs of radicalized individuals who use violence to promote political, religious, or social ends. Because of the plurality of ideologies promoted by different individuals and organizations, deradicalization programs have had no clear theoretical orientations, and their effectiveness remains undocumented (Horgan & Braddock, 2010). The Self-Sacrifice Scale could be utilized to quantitatively measure the efficacy of these deradicalization programs in the hope of perfecting them. Consequently, the ability to measure the construct self-sacrifice using a valid research tool may contribute to improving the quality of terrorism research and of deradicalization programs worldwide.

Conclusion

In the last few decades, social scientists have been challenged to explain self-sacrifice, especially as it relates to terrorism. Researchers' attempt to understand this phenomenon has been hindered by the lack of a proper psychometric instrument to measure individuals' readiness to self-sacrifice for an important cause. Research herein described responds to that challenge and offers a reliable and valid tool to measure such propensity. This new instrument opens up several new research avenues en route to understanding the motivational underpinnings of self-sacrifice.

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Appendix

Original 39 Self-Sacrifice Items

1. I would not be ready to give my life away for an important cause.

2. My life is more important than any cause.

3. Under the right circumstances, I would sacrifice my life for an important cause.

4. I would be ready to give my life for a cause that is extremely dear to me.

5. I would not risk my life for a highly important cause.

6. Dying for a higher cause is a noble act.

7. I admire people who are so committed to a cause that they are willing to sacrifice their life for it.

8. Someone who is truly devoted to a cause should be willing to sacrifice his/her life in order to defend it.

9. If I truly believed in a cause, I would do whatever it takes to defend it, including sacrificing my life.

10. It is senseless to sacrifice one's life for a cause.

11. One should always be willing to put one's life on the line for a cause that is truly important.

12. I would be ready to give up all my personal wealth for a highly important cause.

13. I would be ready to sacrifice my personal interest to support a cause that is important to me.

14. I would be willing to give away all my belongings to support an important cause.

15. If I was truly committed to a cause it would be more important to me than any material possession.

(*Appendix follows*)

16. My personal interest is more important than any cause.

17. There is limit to what one can sacrifice for an important cause.

18. I would not defend an important cause if I had to sacrifice my relationships with my loved ones.

19. I would be prepared to put my self-interest aside to fully devote myself to an important cause.

20. I could never put a cause ahead of my self-interest.

21. I would be prepared to endure intense suffering if it meant defending an important cause.

22. I have great respect for people who are willing to put an important cause ahead of their self-interest.

23. I would defend a cause to which I am truly committed even if my loved ones rejected me.

24. The truly committed must always uphold their beliefs, no matter what the personal cost.

25. I would be willing to renounce my deeply held beliefs if defending them came at a great cost.

26. A cause could never be so important to be worth sacrificing all my personal possessions.

27. I would remain committed to an important cause even if it made me unpopular.

28. I would not support an important cause if others mistreated me for it.

29. Upholding a cause to which one is committed in the face of persecution is a sign of great courage.

30. I would rather face persecution than give up a cause that is really important to me.

31. I would renounce my personal beliefs if I had to face persecution.

32. I would not change my attitude towards a higher cause even if people oppressed me.

33. I would change my attitude towards an important cause to avoid persecution.

34. My attitude towards an important cause would not be affected if others mistreated me.

35. If I was truly committed to a cause, abuses by others would not change my beliefs.

36. I respect those who defend their beliefs despite being mistreated.

37. No cause is worth my support if it means that others would hurt me.

38. I would defend an important cause even if others insulted me for my beliefs.

39. True supporters of a cause must maintain their beliefs even if others make them suffer for it.