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SUPPLEMENTARY INFORMATION

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Ángel Gómez[1,2], Lucía López-Rodríguez[1,3], Hammad Sheikh[1,4], Jeremy Ginges[1,4], Lydia Wilson[1], Hoshang Waziri[1], Alexandra Vázquez[1], Richard Davis[1,5,6] and Scott Atran[1,5,7,8]*

[1]Artis International, 6424 East Greenway Parkway, Suite 100-498, Scottsdale, AZ 85254, USA. [2]Departamento de Psicología Social y de las Organizaciones, Universidad Nacional de Educación a Distancia, UNED, C/ Juan del Rosal, No. 10, 28040 Madrid, Spain. [3]Departamento de Psicología, Universidad de Almería, Cañada de San Urbano s/n, 04120 Almería, Spain. [4]Department of Psychology, New School for Social Research, 66 West 12th Street, New York, NY 10011, USA. [5]Centre for the Resolution of Intractable Conflicts, CRIC, Department of Politics and International Relations and Harris Manchester College, University of Oxford, Mansfield Road, Oxford, OX1 3TD UK. [6]School of Politics and Global Studies, Arizona State University, Coor Hall, 975 South Myrtle Avenue, Tempe, AZ 85287, USA. [7]Centre National de la Recherche Scientifique, Institut Jean Nicod—Ecole Normale Supérieure, 29 Rue d'Ulm, 75005 Paris, France. [8]Gerald Ford School of Public Policy and Institute for Social Research, University of Michigan, Ann Arbor, MI 48109, USA. Ángel Gómez and Scott Atran contributed equally to this work. *e-mail: satran@umich.edu

The Devoted Actor's Will to Fight and the Spiritual Dimension of Human Conflict

Running Title: *Devoted Actors and the Will to Fight*

*Ángel Gómez[1,2], Lucía López-Rodríguez[1,3] Hammad Sheikh[1,4], Jeremy Ginges[1,4], Lydia Wilson[1,5], Hoshang Waziri[1], Alexandra Vázquez[1,2], Richard Davis[1,5,6] and *Scott Atran[1,5,7,8]

[1] Artis International, 6424 E. Greenway Parkway, Suite 100-498, Scottsdale, AZ 85254, USA

[2] Departamento de Psicología Social y de las Organizaciones, Universidad Nacional de Educación a Distancia, UNED, CL/ Juan del Rosal, No. 10, 28040 Madrid, Spain

[3] Departamento de Psicología, Universidad de Almería, Cañada de San Urbano s/n, 04120 Almería, Spain

[4] Department of Psychology, New School for Social Research, 66 W. 12th St., New York, NY 10011, USA

[5] Centre for the Resolution of Intractable Conflict, CRIC, Department of Politics and International Relations and Harris Manchester College, University of Oxford, Mansfield Road, Oxford, OX1 3TD, England

[6] School of Politics and Global Studies, Arizona State University, Coor Hall, 975 S. Myrtle Ave., Tempe, AZ 85287, USA

[7] Centre National de la Recherche Scientifique, Institut Jean Nicod – Ecole Normale Supérieure, 29 rue d'Ulm 75005 Paris, France

[8] Gerald Ford School of Public Policy and Institute for Social Research, University of Michigan, Ann Arbor, MI 48109, USA

*** Corresponding authors**

Supplementary Discussion

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1. Study 1 ($N = 56$): Frontline Study

1.1 Method and Design

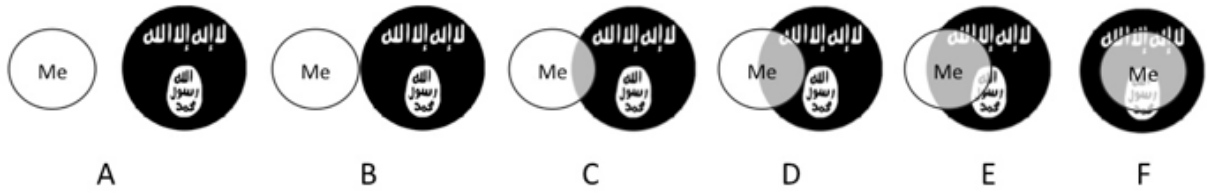
Participants

Nineteen Peshmerga, 17 Iraqi army regulars, and 20 Arab Sunni militiamen from the Kudilah battle (northern Iraq, February 2016) (M_{age} = 34.92 years, *range* = 20-71, *SD* = 11.32, all male) participated in face-to-face interviews. For field studies, previous work with ISIS prisoners was given IRB approval and participant anonymity assured, acknowledging the special circumstances related to prisoners on the USG list of terrorist organizations related to constraints imposed by the U.S. Supreme Court in *Holder v., Humanitarian Law Project* (for a discussion of those constraints, see Atran, Axelrod, Davis & Fischhoff, 2017). For non-prisoners at the front, consent and anonymity were required in accordance with standard IRB protocols (ARTIS Research IRB Memorandum No. 2014-0925, 25 September 2014, 29 January 2016).

In interviews with captured ISIS fighters, we posed questions for which there were no obvious pre-determined responses (e.g., if a child born of Zionist parents were raised by the Islamic State since birth, would that child grow up to be a Zionist or a True Believer?). We also checked whether captivity, or possibilities of our helping to exacerbate or mitigate conditions of captivity, might change responses (e.g., "Would you kill noncombatant civilians to advance the cause of the Caliphate" vs. "Would your close comrades in ISIS kill noncombatant civilians to advance the cause of the Caliphate?"). Moreover, we were accompanied in interviews by Marine Reserve Major General Douglas Stone, former Deputy Commander, Multinational National Forces in Iraq, who had interviewed 3-4,000 insurgents, including foot soldiers and leaders of ISIS, in his posting to alleviate prison conditions after the Abu Ghraib scandal. He has argued in briefings at the Pentagon that these methods facilitate elicitation of what appear to be prisoners' true beliefs in hours compared to weeks or months of standard interrogation because the methods used are so apparently game-like, attention-arresting and non-threatening. No information that might incriminate individuals in ISIS operations was solicited.

Materials

Identity Fusion. Participants were asked to indicate their identity fusion for a number of groups: Family, Close Friends they consider brothers and sisters, Muslim Ummah, Iraqis, and their ethnic group (Kurds, Sunni Arabs, or Tribe). They were shown a card showing a series of increasingly overlapping circles, one of which represents them, the other a given group (e.g., their family, see Supplementary Figure 1).



Supplementary Figure 1. Pictorial Measure of Identity Fusion used with Islamic State Fighters.

They indicated which degree of overlap best represented their "relationship with the group." Respondents who picked the figure displaying completely overlapping circles were considered fused with the group, leading to a dichotomous measure (Swann, Gómez, Seyle, Morales, & Huici, 2009). The table below gives the percentages of respondents who were fused with the given groups.

Table 1. Percentage of Frontline Fighters Fused with Different Groups.

	Peshmerga	*Iraqi Army Kurds*	*Sunni Arab Militia*
Family	95%	94%	100%
Kin-Like Group of Friends	95%	82%	94%
Muslim Ummah	26%	19%	39%
Iraqi people	0%	12%	61%
Own Group (Peshmerga, Iraqi Army, Sunnis, resp.)	100%	100%	56%

As apparent from Table 1, results indicate a variance in the percentage of individuals fused with the different groups they were asked about, replicating previous findings that identity fusion is not a personality trait (Gómez & Vázquez, 2015).

Sacred Values. Participants were given a list of values we had identified as potentially sacred values relevant to the conflict (e.g., Unified Iraq and Kurdeity). Respondents ranked the values according to importance and picked one that was the most important to them, which "they could not live without" (Table 2).

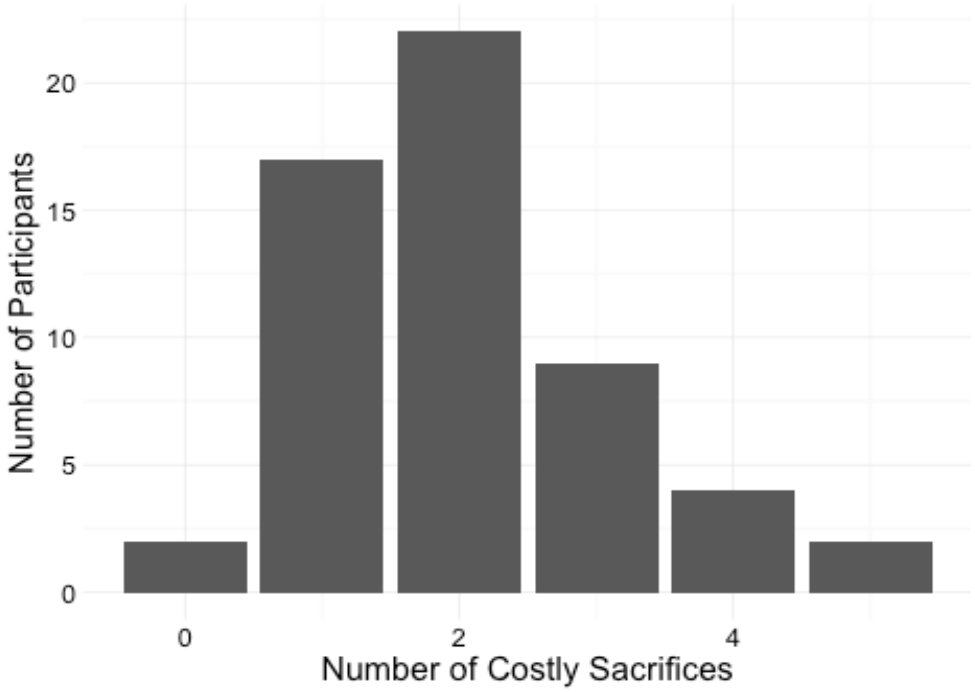
Peshmerga and Iraqi Army Kurds considered either *Kurdeity* or *Independent Kurdistan* as their most important values. When asked to rank all of their sacred values, Kurds ranked these values either as the first or second most important. Sunni Arab militia on

the other hand considered a *unified Iraq* as the most important sacred value followed by *Arabness*.

Table 2. Most Important Sacred Values for Frontline Fighters. Numbers in table represent numbers of participants.

	Peshmerga	*Iraqi Army Kurds*	*Sunni Arab Militia*
Kurdeity	7	12	0
Independent Kurdistan	8	5	0
Unified Iraq	0	0	11
Arabness	0	0	4
Free Speech	1	0	2
Sharia	0	1	1
Democracy	1	0	1

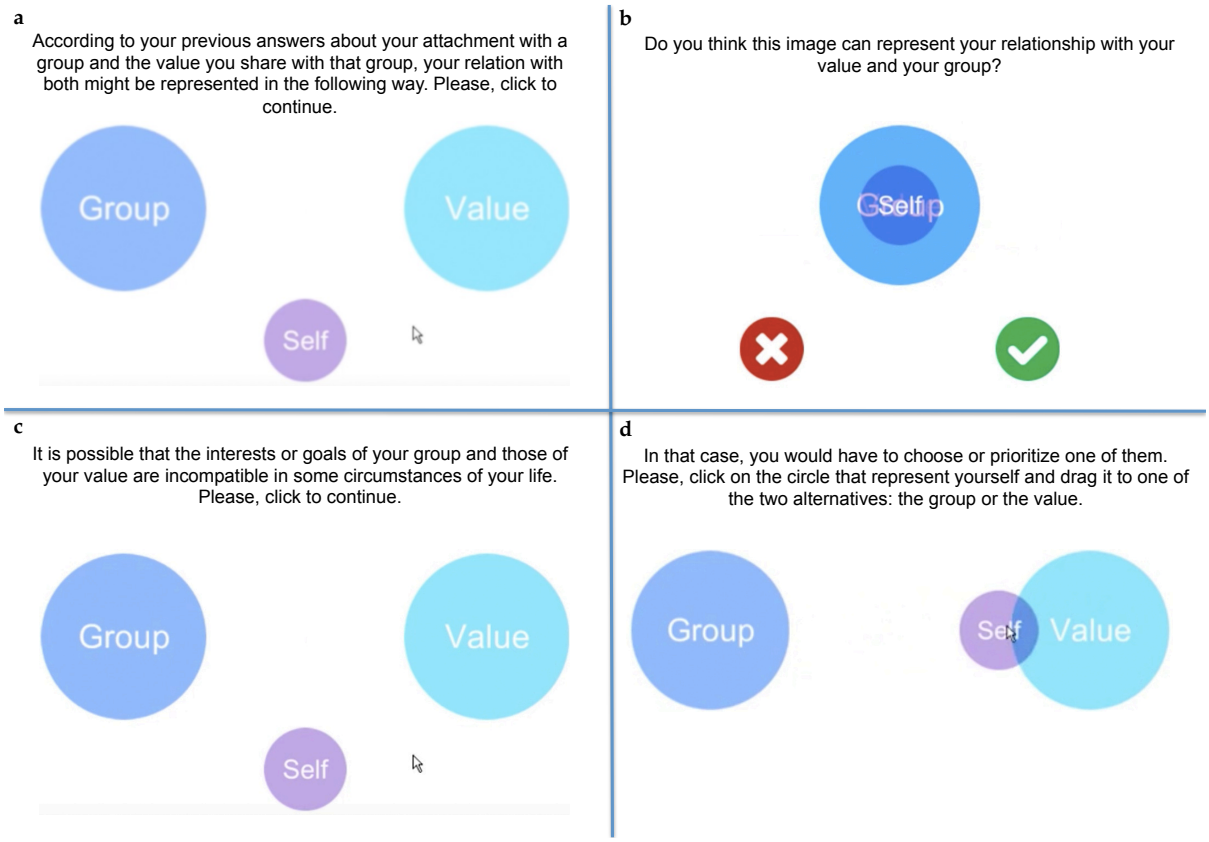
Costly Sacrifices. For each given value, we assessed the willingness to sacrifice by asking participants if they would fight and die for it, if they would be willing to let their family suffer, if they would be willing kill civilians, partake in a suicide mission, or torture women and children if they knew they had some crucial intelligence. The number and set of relevant sacred values was specific to each participant (e.g., some participant may have pick*ed Kurdeity* and *Independent Kurdistan* as sacred values, another one *Kurdeity*, *Free Speech*, and *Democracy*). Therefore, they could not be aggregated simply. Instead, we created an overall measure of the maximum willingness to make costly sacrifices: we first checked, for each given action, whether the participant endorsed it (yes = 1, no = 0) in defense of any of their sacred values (e.g., if they would be willing *to kill* for any of their sacred values), we then combined the sacrifices into a sum score (Cronbach's $\alpha = .55$). The figure below gives the distribution of this composite score.



Supplementary Figure 2. Total Score of Costly Sacrifices (Study 1, $N = 56$).

Value versus Group. We asked respondents to imagine that a group (e.g., their Family) would abandon a value (e.g., *Kurdeity*). Would they choose to stay with the group and abandon the value, or would they abandon their group for the value? Because of time constraints, we could not compare all of the values we probed for sacredness against all participants' fused groups. Instead, we pitted each participant's two most important values against their two highest ranked groups, leading to 4 total comparisons. Participants were presented with a dynamic measure involving a series of two large circles representing their fused group and their sacred value, and a small circle representing themselves (Supplementary Figure 3a).

A screen then showed the three circles overlapping simultaneously – one's group, sacred value, and personal identity – conforming to a representation of what a devoted actor is (Supplementary Figure 3b). Participants were asked whether or not their relation with the group and value might be represented in this way. After learning that in some circumstances the interest or goals of the group were incompatible with the values, the group and value circles moved, respectively, to the left and to the right of the "self" circle that remained in the middle (Supplementary Figure 3c). Then participants were asked to choose or prioritize group or value by dragging the small circle representing personal identity to one or the other (Supplementary Figure 3d; see video at https://youtu.be/dZCJfsvx3J8).



Supplementary Figure 3. Dynamic measure for choosing between Value and Group. Order of presentation of value and group switched for each successive participant.

Most participants (n = 43) ranked their family as their first or second most important group, so one comparison given to them pitted their family against a value. The remainder had chosen other groups as their two most important ones (e.g., Kurds and comrades). In other words, they considered these groups as more important than their families. Six of those participants chose at least one value over some group; thus, it can be inferred that they considered the given value as more important than their families as well. Based on these results, we created two dichotomous variables: value over any group (including family) and value over specifically family, coded as "abandoned value" versus "abandoned group" or "abandoned family," respectively.

Spiritual Formidability versus Physical Formidability. We assessed spiritual and physical formidability of a number of groups using the dynamic measure on an iPad (see main article for description and results), which produced scores ranging from 0 (weakest) to 100 (strongest). Because of technical issues in the field, 8 participants were instead given a pictorial measure showing five bodies incrementally increasing in size and muscularity. Their responses were coded as 0 (weakest), 25, 50, 75, 100 (strongest) to map the scores from the dynamic measurements. Intergroup formidability was calculated by subtracting the formidability score of ISIS from the formidability score of their own group (*Kurds* for Peshmerga and Iraqi Army Kurds, and *Sunnis* for Sunni Arab militia) leading to a score theoretically ranging from -100 (outgroup bias: the ingroup is very weak, ISIS is very strong) to +100 (ingroup bias: ingroup is very strong, ISIS is very weak). This procedure was

followed for physical and spiritual formidability, respectively. We also asked participants to rank all groups according to their physical and then their spiritual formidability (see main article).

1.2 Results

Spiritual versus Physical Formidability. We did a correlational analysis of physical formidability and spiritual formidability of ingroup and ISIS. This analysis revealed that physical and spiritual formidability were not significantly intercorrelated suggesting that they were independent constructs (Table 3).

Intergroup physical formidability (M = −17.85, SD = 30.81) and intergroup spiritual formidability (M = −2.09, SD = 28.81) were also not intercorrelated ($r_{[52]}$ = .09, p = .535). Although intergroup physical formidability was not reliably correlated with costly sacrifices ($r_{[52]}$ = .20, p = .136), intergroup spiritual formidability was ($r_{[53]}$ = .40, p = .002).

Table 3. Correlations, Descriptive Statistics, and Comparisons.

	1	2	3	4	*M*	*SD*
1. In-group Physical Formidability	1	.14	.08	.00	32.39	20.36
2. ISIS Physical Formidability		1	.05	.12	50.23	25.84
3. In-group Spiritual Formidability			1	.10	85.52	19.08
4. ISIS Spiritual Formidability				1	87.61	20.76

Regression on Costly Sacrifices. We conducted a regression analysis of intergroup physical and spiritual formidability on costly sacrifices. The regression showed that although intergroup spiritual formidability predicted costly sacrifices reliably, intergroup physical formidability did not (Table 4).

Table 4. Linear Regression on Costly Sacrifices.

	B	*SE*	*β*	*t*
Intercept	2.18	0.08	-	13.31**
Intergroup Physical Formidability	0.01	0.01	.16	1.36
Intergroup Spiritual formidability	0.02	0.01	.39	3.08**
	$F_{(2,51)} = 6.06$, $p = .004$, $R^2 = .19$			

2. Study 2 (N = 816): Threats activate the interaction between identity fusion and sacred values.

2.1 Method and Design

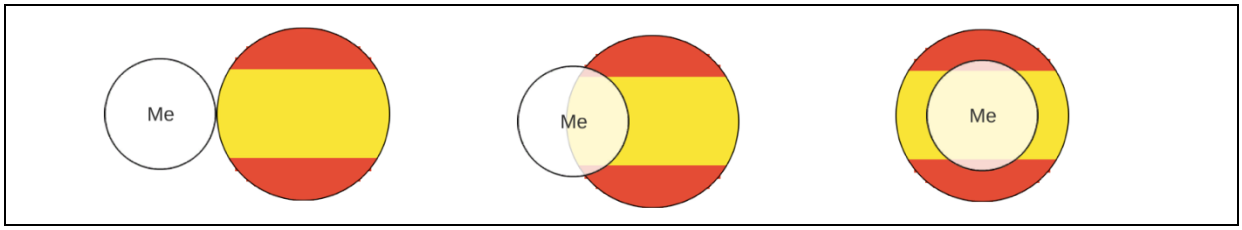
Participants

Eight hundred and sixteen Spaniards (64.2% female, M_{age} = 34.86, SD = 11.32, 22.3% students from UNED, 77.7% general population) participated in the study. Participation was

voluntary and anonymous; participants were informed about the goals of each study and were also thanked and debriefed once they finished;(final human subjects compliance approval for Studies 1-15, UNED Comité Bioética, 20 July 2017).

Materials

Identity Fusion. Participants used the *Dynamic Identity Fusion Index* (DIFI, Jiménez et al., 2015) to identity fusion with their group (see Supplementary Figure 4). The variable was computed as dichotomous: Those participants who indicated that the small circle (self) was completely enveloped by the big one (the country) – corresponding values of 100 – were considered completely fused with their country: 21.7% of the participants were fused with their country (Spain).



Supplementary Figure 4. Schematic Representation of the Dynamic Identity Fusion Index.

Democracy as a Sacred Value. Participants were asked *"How much money would be necessary for you to say you give up your actual position about democracy (you can keep that money or donate it)*" with six options of different amounts (0€; 100€; 1.000€; 100.000 €; 1.000.000 €) and the seventh option "Never. The quantity does not matter." (Ginges, Atran, Medin & Shikaki, 2007; Sheikh, Gómez, & Atran, 2016). The variable was computed as dichotomous: those participants who selected the last option were considered to have sacred values; 23.8% of the participants considered democracy a sacred value.

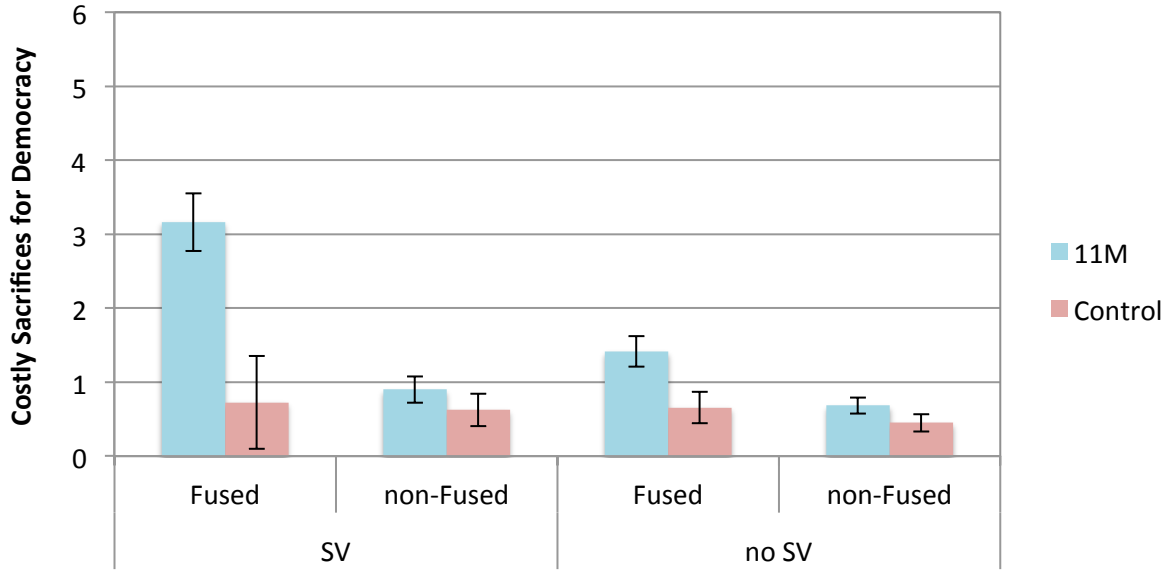
Manipulation of Threat. Participants were randomly assigned to a threat condition (writing about the 11M, the Madrid train bombings of March 11, 2004) or to a control condition (write about an unrelated issue).

Costly Sacrifices for Democracy. After the manipulation, participants responded to a 5-item scale about their willingness to engage in actions to defend democracy (Atran, Sheikh, & Gómez, 2014; Sheikh et al., 2016). They indicated to what extent they agree with the following 5 statements: "If necessary, I would be willing to *lose my job or source of income/go to jail/use violence/let my children suffer physical punishment/die* to defend my value" (α = .85) on a 7-point Likert scale ranging from 0 (*Strongly Disagree*) to 6 (*Strongly agree*).

2.2 Results

Willingness for action to defend the democracy

A 2 (control vs. 11M) × 2 (no SVs vs. SVs) × 2 (non-fused vs. fused) ANOVA yielded a 3-way interaction on costly sacrifices for democracy, $F_{(1,808)} = 13.74$, $p < .001$, $\eta^2_p = .02$. As Supplementary Figure 5 shows, participants fused with the country and for whom democracy is a sacred value presented the highest levels of willingness to engage in actions to defend the democracy in the 11M condition compared to all the other conditions. All the 2-way interactions and main effects were also significant, *ps* < .01. Because the assumption of equality of variances was violated in this analysis, we conducted an alternative analysis using a robust regression, and results did not change significantly.



Supplementary Figure 5. Costly Sacrifices for Democracy by Group. Error bars for 95% CI.

3. Study 3 (*N* = 545): Devoted actors choose values over family

Study 3 was a correlational survey in which participants had to choose between the group they were fused with and the sacred value they shared with their group. We analyzed whether the choice (value vs. group) varied depending on whether the group was family or another group. This study also probed whether the willingness to make costly sacrifices varied depending on the participant's choice (value vs. group). All the analyses were run for *devoted actors*: participants who were totally fused with their groups, refused to give up the values they share with that group, and perceived their selves as being totally embedded within both the group and the value.

3.1 Method and Material

3.1.1 Participants

Data were pre-screened for completeness and repeat participation, resulting in a sample of 1,525 adults. The analyses were run only for *devoted actors*: Participants who were totally fused with their groups, refused to give up their values for any amount of money, and perceived their selves totally embedded within both the group and the value. Other participants were also not considered for the analyses to avoid confusion: those who chose neither the group nor the value in the specific measure; those who identified with no valid

group or who chose a group (e.g., family) as a value. The final sample consisted of 545 participants (64.8% female) ranging in age from 18 to 84 (M = 34.58, SD = 12.33).

3.1.2 Variables and Measures

A group we feel fused with and a sacred value. Participants were asked to indicate a group with which they felt complete unity and commitment and to choose their level of fusion with that group (a small circle completely embedded within a bigger circle). Participants were also asked to indicate a value which they would not give up for anything in the world. The order of reporting the value or the group was counterbalanced.

Identity fusion with the group and *Sacredness of the value* were measured as in Study 2 with the specific groups and values participants chose.

Choice between the value and the group. As in Study 1, a dynamic measure was created to enable participants to choose between the value and the group.

Costly sacrifices for the value were measured similarly to Study 2 (α = .78).

3.2 Results

3.2.1. Preliminary analyses

Order. The order in which participants reported the value (before or after the group) did not affect costly sacrifices for the value, $t_{(543)} = -0.31$, $p = .758$.

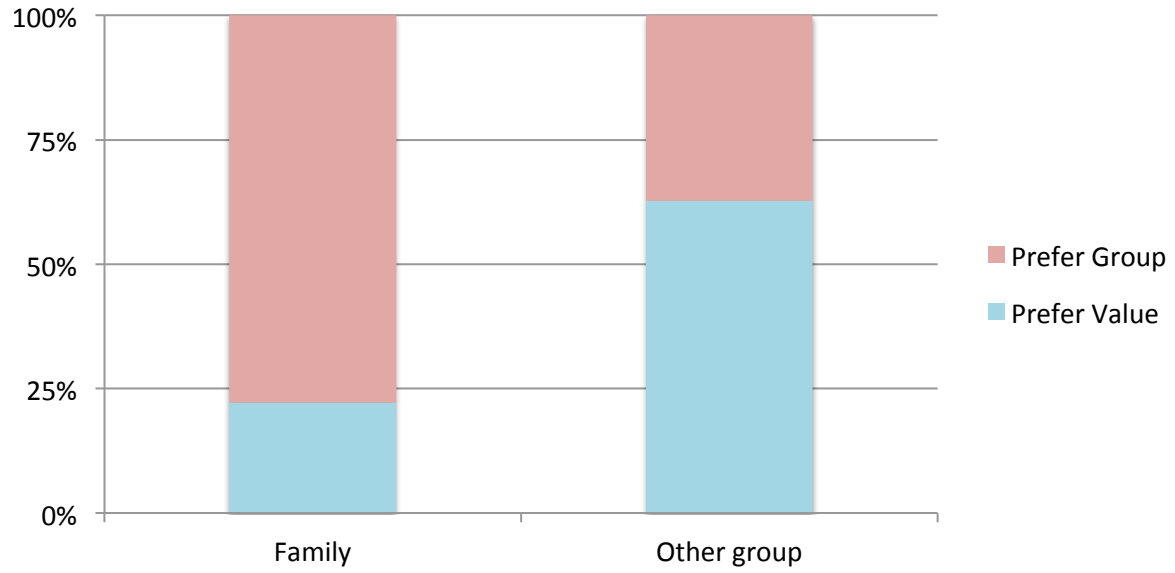
Sex. Sex had an effect on sacrifices for the value, $t_{(347.56)} = -3.97$, $p < .001$: men were more willing to make costly sacrifices (M = 2.51, SD = 1.39) than women (M = 2.04, SD = 1.20).

3.2.2. Main analyses

Groups and Values. Most participants indicated family (71.9%) as the group they were fused with, significantly more than the 50%, $\chi^2_{(1)} = 104.81$, $p < .001$. The most important values these participants considered sacred were love (30.1%) and trust (8.7%). For those who thought about other groups, their most important values were loyalty (18.3%) and friendship (12.4%).

Choosing between the group and the value. In this study we were interested in devoted actors (those who were fused and had sacred values). These participants preferred their group (66.4%) to their value (33.6%). No differences were found depending on the order in which they reported their group (before or after their value), $\chi^2_{(1)} = 1.15$, $p = .285$. However, this pattern only held for devoted actors whose group was family. The pattern was inverted for those participants who chose a different group, $\chi^2_{(1)} = 81.14$, $p < .001$. In this case, more people chose the value (62.7%) over the group. In brief, when talking about family, people prefer their families to the values they share, but for other groups, people

prefer to forsake their groups for their values. Still, there is a small percentage (22%) that forsakes family for the value (Supplementary Figure 6).



Supplementary Figure 6. Choice by group.

Who are the most willing to make costly sacrifices for their values?

A two-way ANOVA was conducted with group (family vs. other group) and choice (value vs. group) as IVs on costly sacrifices for the value with sex as covariable. People who chose the value over the group were more willing to make costly sacrifices for their value than those who chose the group, $F_{(1,540)} = 19.40$, $p < .001$, $\eta^2_p = .04$. This was true especially when the group was family, $F_{(1,540)} = 19.77$, $p < .001$, $\eta^2_p = .04$, but also with other groups, $F_{(1,540)} = 4.90$, $p = .027$, $\eta^2_p = .01$.

Those who chose the value over family were even more extreme than those who chose the value over another group, $F_{(1,540)} = 12.89$, $p < .001$, $\eta^2_p = .02$. Thus, the small percentage of participants that forsakes family for the value (around 22% of the total sample) was the most extreme in willingness to make costly sacrifices for their values, with some 35% of these participants having *love* as value, 8% honesty, and 7% trust.

There was also a clear effect of group such that family and values shared with family motivate more costly sacrifices $F_{(1,540)} = 18.46$, $p < .001$, $\eta^2_p = .03$ (see Table 5).

Table 5. Descriptive statistics by group. Scale from 0 to 6.

	Family			Other group		
	M (95%CI)	*SD*	*N*	*M (95%CI)*	*SD*	*n*
Prefer Value	2.81 (2.53, 3.08)	1.28	87	2.21 (1.93, 2.49)	1.39	96
Prefer Group	2.11 (1.97, 2.25)	1.24	305	1.74 (1.45, 2.03)	1.09	57

4. Study 4 (*N* = 280): A difficult choice

4.1 Method

4.1.1 Participants

Data were pre-screened for completeness and repeat participation, resulting in a sample of 668 adults. The analyses were run only for *devoted actors*: Participants who were totally fused with their groups, refused to give up their values for any amount of money, and perceived their selves as totally embedded within both the group and the value. Other participants were not considered for the analyses to avoid confusion: those who chose neither the group nor the value in the specific measure; those who identified with no valid group or who chose a group (e.g., family) as a value. The final sample consisted of 280 participants (64.3% female) ranging in age from 18 to 88 (M = 37.10, SD = 13.85).

4.1.2 Variables

A group we feel fused to and a sacred value. In order to avoid confusion, we included a clear separation between groups and values in this study. Participants indicate a group with which they felt such unity and commitment that they could choose the option of being totally fused (a small circle completely embedded within a bigger circle) and chose a value from a list of the most common values. These values were selected from previous studies. The order of reporting the value and the group was counterbalanced.

Identity fusion with the group was measured as in Study 2. *For sacredness of the value* we used a dynamic measure where participants had to choose among three different options: exchange the value for money, for another good, or non-acceptance of offers to give up the value for any amount of money.

Manipulation of Threat. The feeling of threat was manipulated following a between-subjects design with four conditions: threat to the value, threat to the group, threat to both the group and the value, and a control condition. In the threat to the value condition, participants saw a gif image with a small circle (self) embedded within a big circle (value) burning on a black background. Participants read "some groups of people such as the Islamic State aim to do such-and-such with these kind of beliefs/relationships, such as those you have with your value (or your group). Think for a few seconds about how this image makes you feel, and then continue the study. The threat to the group condition included a big circle (group), the condition threat to both the value and the group included both images, and the control condition had nothing but a white screen where participants click to continue the study.

Choice. As in Study 1, participants had to move the self to the value or the group. The position of the group/value was counterbalanced.

Difficulty of choice. Participants indicated to what extent they had found the choice between the group and the value to be difficult by moving a slider from 0 (*Extremely Easy*) to 100 (*Extremely Difficult*).

Costly sacrifices for the value were measured similar to Study 2 ($\alpha = .76$).

4.2 Results

4.2.1 Preliminary analyses

Order. The order in which they reported the value (before or after the group) did not affect costly sacrifices for the value, $t_{(278)} = 1.68$, $p = .095$.

***Sex*.** There was an effect of sex on sacrifices for the value such that males are more willing to make sacrifices, $t_{(278)} = -2.24$, $p = .026$. There was no effect on difficulty of choice, $t_{(278)} = 0.36$, $p = .721$. Sex was controlled for the following analyses that include sacrifices.

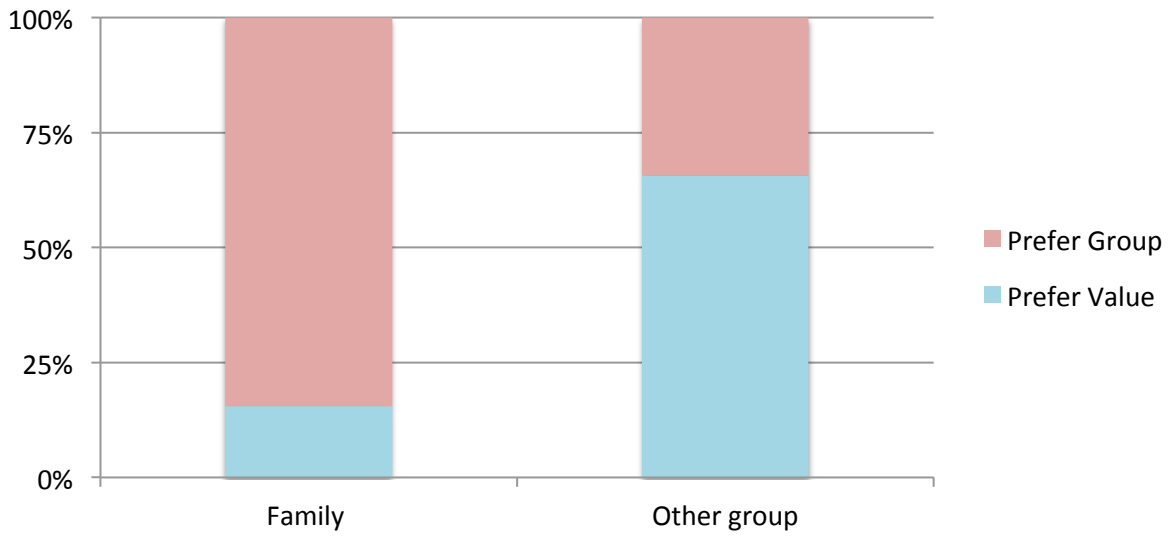
***Threat Condition*.** There was no effect of the experimental condition on choice, $\chi^2_{(3)} = 2.94$ $p = .400$; or sacrifices for the value or difficulty of choice, $p > .250$.

4.2.2 Main analyses

Groups and Values. Most participants indicated family (78.2%) as the group they were fused with; this option was chosen more than the 50% of the time both in the total sample, $\chi^2_{(1)} = 51.79$, $p < .001$; and in the sample only with devoted actors, $\chi^2_{(1)} = 89.16$. The most important values considered sacred for these participants were love (36.5%), happiness (13.2%) and trust (8.7%). For those who thought about other groups (e.g., friends), their most important values were friendship (21.3%) and loyalty (8.2%).

Choosing between the group and the value. In this study we were interested in devoted actors (those who were fused and had sacred values). These participants preferred their group (73.6%) to their value (26.4%). No differences were found depending on the order in which they reported their group (before or after their value), $\chi^2_{(1)} = 0.12$. $p = .732$; or the position, $\chi^2_{(1)} = 0.37$. $p = .543$.

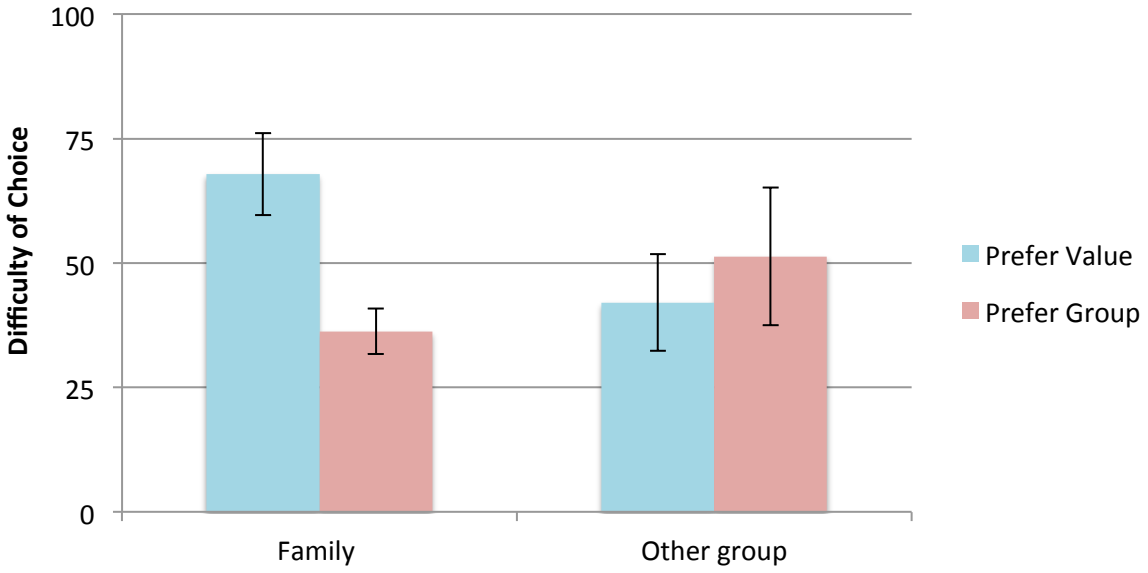
However, this pattern was only applicable for those whose group was family. The pattern was inverted for those participants who chose a different group such that more people in this case chose the value over the group, $\chi^2_{(1)} = 61.46$. $p < .001$. In short, when talking about family, people prefer their families to the values they share, but for other groups, people prefer the value to the group. Still, there is a small percentage (15%) that chose the value over their family (see Supplementary Figure 7).



Supplementary Figure 7. Choice by group.

A Difficult Choice

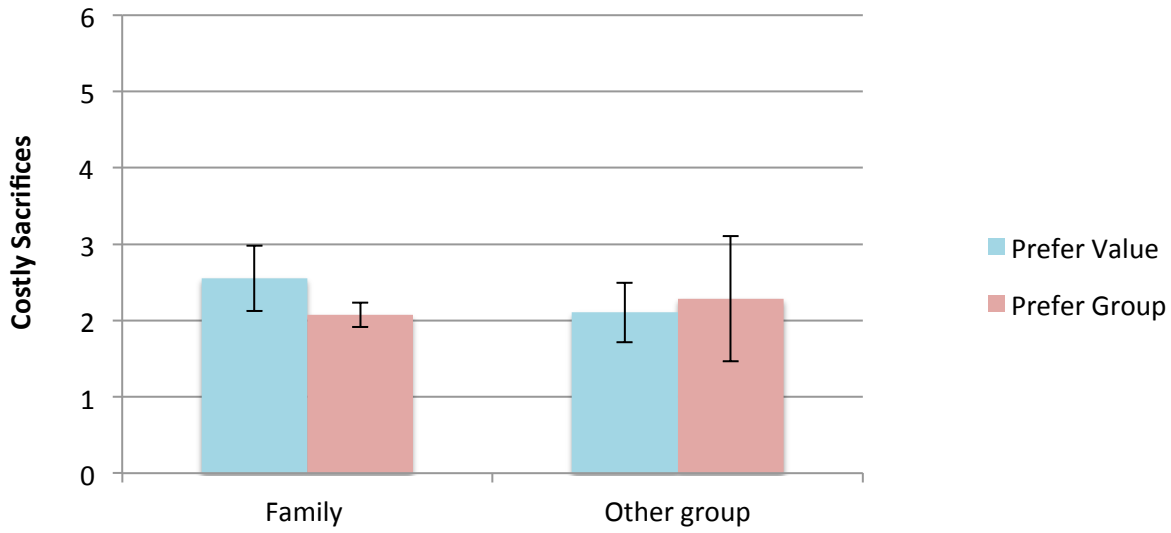
There was an interaction effect between Group (family vs. other) and Choice (group vs. value) on Difficulty of choice. $F_{(1, 276)} = 16.62$, $p < .001$, $\eta^2_p = .06$. Pairwise comparisons with *Bonferroni* tests showed that those participants who chose the value over their family found the choice significantly more difficult than the other participants: specifically, compared to those who chose family over the value, $F_{(1, 276)} = 30.69$, $p < .001$, $\eta^2_p = .10$; and compared to those who thought about another group and chose the value, $F_{(1, 276)} = 13.10$, $p < .001$, $\eta^2_p = .05$ (see Supplementary Figure 8).



Supplementary Figure 8. Difficulty of choice by choice and group. Error bars show 95% CI.

Costly sacrifices. Given that homogeneity of variances was violated, Levene's Test $F_{(3,276)} = 5.51$, $p = .001$, a two-way ANOVA was not possible. The following analyses were conducted separately for those who thought about family and those who thought about another group.

We conducted a one-way ANOVA with choice as the IV and sacrifices for the value as a DV. Sex was introduced as covariate. Those who forsook family for the value were significantly more willing to make costly sacrifices for the value than those who forsook the value for family, $F_{(1,216)} = 5.19$, $p = .024$, $\eta^2_p = .02$. As homogeneity of variances was violated for those who thought about another group (Levene Test $F_{[1,59]} = 6.40$, $p = .014$) we conducted a more robust analysis. A Welch's ANOVA revealed that there were no differences in sacrifices for the value when people forsook other group for their values, *Welch's* $F_{(1, 30.30)} = 0.17$, $p = .684$ (see Supplementary Figure 9) .



Supplementary Figure 9. Costly sacrifices by choice and group. Error bars show 95% CI.

Those who chose family as their fused group but who chose their value over their families (extremely devoted, $n = 34$) held love (41.2%), happiness (8.8%), dignity (8.8%) and humanity (8.8%) as sacred values. They found this choice between family and value very difficult, but once the choice was made, they were more willing to make costly sacrifices.

5. Study 5 ($N = 499$): Meaning of Spiritual formidability I

5.1 Method and Results

Four hundred ninety-nine undergraduates (57.8% female) ranging in age from 18 to 75 ($M = 36.61$, $SD = 13.18$) volunteered to participate in this study. They were asked about the meaning of spiritual formidability. Two judges read and categorized the descriptions into the following six categories:

Convictions. The emphasis here is on the values, beliefs, and convictions, as well as moral, ethical and religious notions that are transcendental for an individual or a group. Inter-judge agreement using Cohen's kappa was .98.

Strength & Willpower. This refers to internal strength that motivates/influences and drives individuals, giving them the capacity and willpower to persevere in pursuit of their goals, face adversities, and act decisively. There were also references to energy and passion beliefs (Cohen's kappa =.89).

Sacrifice. This refers to the motivation that drives individuals/groups to defend, fight and sacrifice (e.g., abandon important things) on for values/beliefs (Cohen's kappa = .87.)

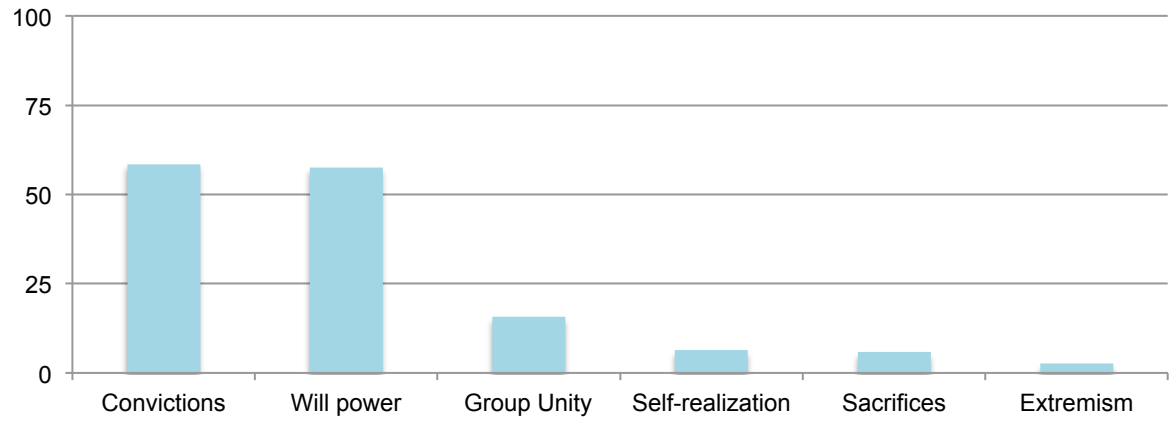
Extremism. This refers to extremism and fanaticism to protect their values or their groups (Cohen's kappa = .93).

Group Unity & Commitment. These are concerned with feelings of alliance and cohesion that strengthen ties with the group and its members (e.g., brotherhood, sharing value with the group). The group is stronger for this value, and the group makes the value strong. (Cohen's kappa = .92).

Self-realization. A feeling of self-fulfillment, self-actualization, life meaning, harmony, or happiness (Cohen's kappa = .79).

Judges used 1 when the category was present in the description and 0 if not. Disagreements were coded as 0. The two most-cited categories (half of the participants) were *convictions* (values and beliefs) with 58.5% of the participants, and *internal strength* ("heart," "energy" and willpower in pursuit of goals and when facing adversity) with 57.5%.

Descriptions used by participants in the study usually implied two or more concepts (Supplementary Figure 10). The category of convictions was frequently associated with strength and willpower; 30.1% of the participants identified spiritual formidability with both categories (either values that give strength or motivate, or strength owing to convictions).



Supplementary Figure 10. Categories of Meaning of Spiritual Formidability I.

6. Study 6 (N = 447): Meaning of Spiritual formidability II

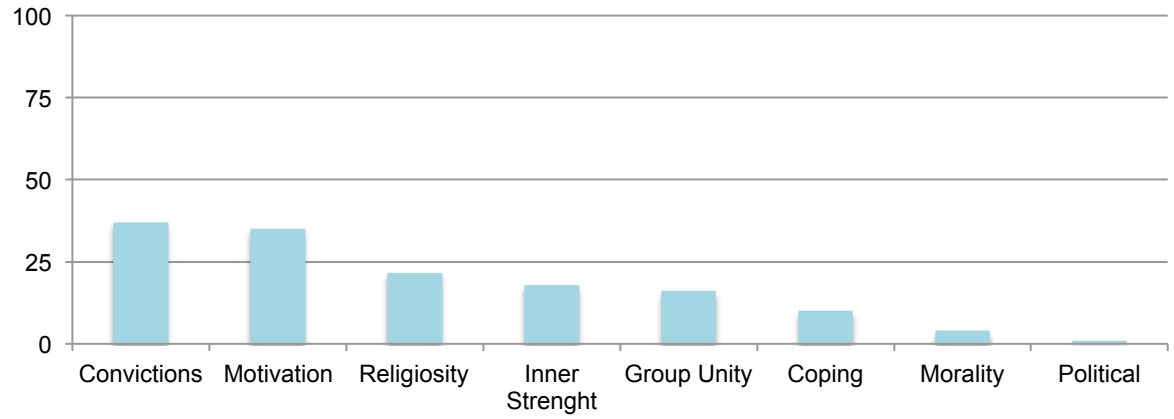
6.1 Method and Results

Study 6 explored a wider range of subcategories to more accurately pin down the concept of spiritual formidability. The *convictions* category was subdivided into 4 subcategories: *Unspecific convictions* (i.e. values, beliefs, convictions, attitudes, thoughts, and ideas with no specific content); (2) *Religiosity* (i.e. convictions specifically related to religion, God or faith); (3) *Morality* (i.e. values explicitly related to ethics or morality); and (4) *Political values* (i.e. values that refer to ideology or political ideas). The *strength* category was subdivided into 3 subcategories to capture its *motivational function* (i.e., a strength that motivates people, guides their behavior, gives them willpower to pursue and achieve their goals, and enables individuals to act according to their values or convictions), its *coping function* (i.e., resilience, the ability to cope with problems and adversities), and its *inner nature* (i.e. spiritual formidability as inner strength which is immaterial, not physical, ethereal, intangible, not visible, something you cannot touch but can feel. It is considered "deep inside you", an essential strength). The category of *group unity and commitment* remained from the first categorization.

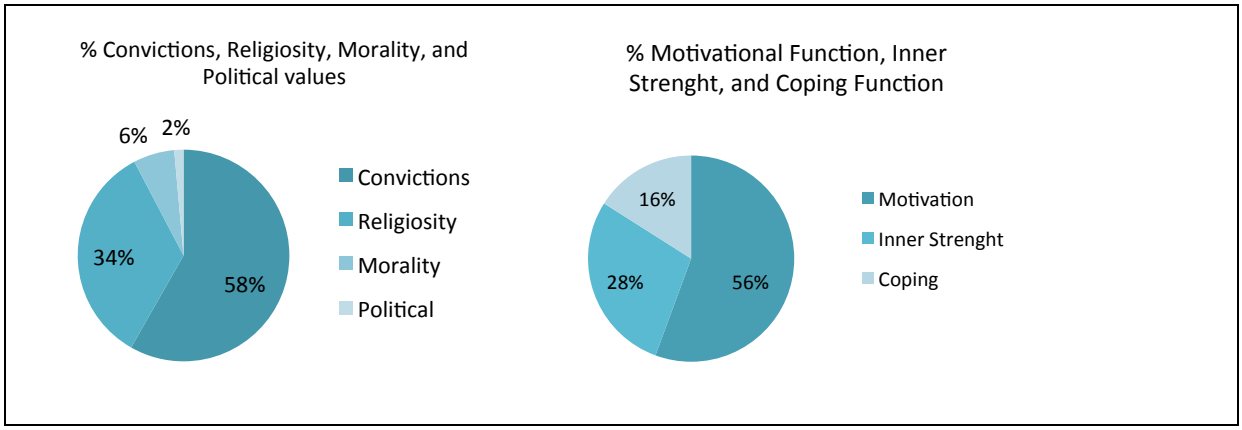
Four hundred and forty-seven participants (60.5% female; M_{age} = 35.82, SD = 12.40) described what they understood by spiritual formidability (in Spanish "Spiritual Strength" [Fuerza Espiritual]). Two judges read and categorized the descriptions into the aforementioned categories.

Results showed an acceptable inter-judge agreement for all categories: Values (k = .93), religiosity (k = .90), morality (k = .90), political (k = .72), coping (k = .89), motivation (k = .78), inner strength (k = .89), and group unity (k = .77).

The most prominent categories when describing spiritual formidability were unspecific convictions and motivation. We might infer that people are thinking about general values and convictions when referring to spiritual formidability and that those beliefs do not need to be related to religiosity, morality or politics. Yet, participants show a tendency to ascribe a motivational function to spiritual formidability. According to these findings, spiritual formidability is a construct that connects convictions with actions, something that impels and guides behavior, even if it also has a coping function.



Supplementary Figure 11. Categories of Meaning of Spiritual Formidability II.



Supplementary Figure 12. Sub-categories of Meaning of Spiritual Formidability II.

7. Study 7 (N = 206): Spiritual formidability, a good predictor of extreme behavior

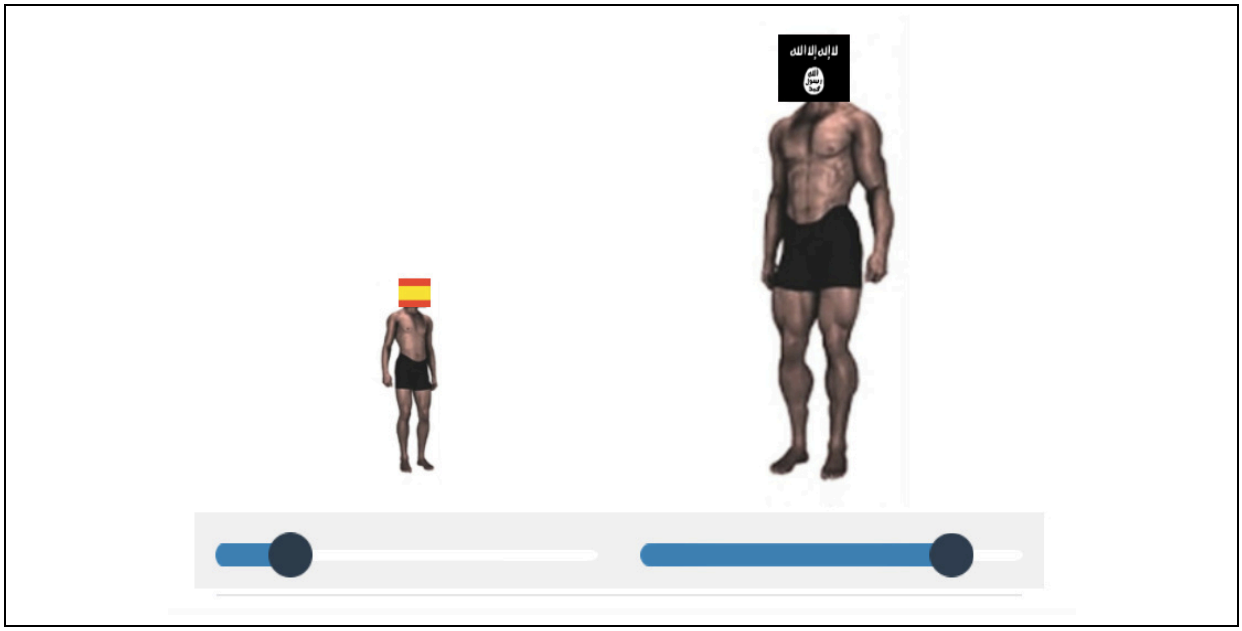
7.1 Method

Two hundred and six Spanish citizens (68.4% female, M_{age} = 37.29, SD = 10.18) voluntarily participated online.

Participants responded to a questionnaire where they had to estimate the physical formidability of the ingroup (Spain) and the outgroup (Islamic State) using the Intergroup Formidability Measure (Supplementary Figure 13). Participants read the following instructions: "Two male bodies are displayed representing the strength of two groups: Spain (on the left side) and the Islamic State (on the right side). You can increase or decrease the size and strength of both bodies in order to indicate to what extent you consider a group stronger or weaker than the other." Two sliders (from 0 to 100) allowed participants to increase or decrease simultaneously the size and strength of each group. After a simple modification of instructions, participants also estimated the spiritual formidability of both groups: the adjective "spiritual" was substituted for "physical." The order of the physical and spiritual formidability measures was counterbalanced. Then we created two indexes: one for

Intergroup Formidability, the other for Intergroup Spiritual formidability by subtracting outgroup formidability from ingroup formidability. Higher values of the index are evidence for ingroup bias, whereas negative values imply outgroup bias. Zero means no differences between ingroup and outgroup formidability.

Participants responded to the scales of costly sacrifices for democracy (α = .78), and for the country (α = .88). We also included the pictorial measure of identity fusion with the country (Swann et al., 2009) and the monetary trade-off measure of democracy as a sacred value.



Supplementary Figure 13. Intergroup Formidability Measure (IFM) for Physical and Spiritual Formidability.

7.2 Results

Preliminary analyses

Regarding identity fusion and sacred values, 24.3% of the participants were fused and 54.4% considered democracy to be sacred. Fusion and sacred values were unrelated, $r_{(204)}$ = −.004, p = .952.

Physical vs. Spiritual Formidability

The intergroup physical formidability index and the intergroup spiritual formidability index were unrelated to each other, $r_{(206)}$ = .10, p = .140. *T*-tests for related samples showed that there was a strong difference between the two constructs, $t_{(205)}$ = 16.23, p < .001. There was a clear outgroup bias for Spiritual Formidability (M = −43.99; SD = 29.45), and a small ingroup bias for Physical Formidability (M = 6.31; SD = 36.49).

A correlational analysis between formidability and spiritual formidability of ingroup

and outgroup shows that physical and spiritual formidability are different dimensions. Only ingroup physical and spiritual formidability were weakly correlated (see Table 6). Participants perceived Spaniards as physically more formidable than the Islamic State ($t_{[205]}$ = 2.48, p = .014), but weaker spiritually ($t_{[205]}$ = 21.43, p < .001), (for descriptives, see Table 6).

Table 6. Correlations, Descriptive Statistics, and Comparisons.

	1	2	3	4	*M*	*SD*
1. In-group Physical Formidability	1	−.25**	.21**	.11	54.03	20.45
2. Out-group Physical Formidability		1	−.09	.02	47.72	25.52
3. In-group Spiritual Formidability			1	−.11	41.02	21.24
4. Out-group Spiritual Formidability				1	85.00	18.15

Regressions on costly sacrifices. We conducted a pair of regression analyses including intergroup physical and spiritual formidability, fusion, and sacred values on costly sacrifices for the country and for democracy respectively. The regression showed that intergroup spiritual formidability and fusion predicted costly sacrifices for the country, whereas intergroup spiritual formidability and sacred values predicted costly sacrifices for democracy (Table 7).

Table 7. Linear Regressions on Costly Sacrifices.

Costly Sacrifices for the Country				
	B	*SE*	*b*	*t*
Intercept	2.54	0.15	-	16.63***
Identity Fusion	0.25	0.09	.18	2.67**
Sacred Values	−0.05	0.08	−.04	−0.62
Intergroup Physical Formidability	−0.01	0.01	−.04	−0.63
Intergroup Spiritual formidability	0.01	0.01	.21	3.02**
	$F_{(4,201)}$ = 4.42, p = .002, R^2= .06			

Costly Sacrifices for Democracy				
	B	*SE*	*b*	*t*
Intercept	2.54	0.14	-	18.65***
Identity Fusion	−0.08	0.08	−.07	−1.00
Sacred Values	0.28	0.07	.26	3.94***
Intergroup Physical Formidability	0.01	0.01	−.01	−0.18
Intergroup Spiritual formidability	0.01	0.01	.18	2.62**
	$F_{(4,201)}$ = 6.43, p < .001, R^2= .10			

8. Study 8 (N = 315): Projection Study I

8.1. Method

Three hundred and fifteen Spanish citizens (61.9% female, M_{age} = 35.14, SD = 13.17) voluntarily participated an online study.

Participants reported their perceived spiritual and physical formidability of Spaniards and of the rest of humanity, as well as the costly sacrifices that they would make for democracy (α = .79). Participants were also asked to estimate how members of the Islamic State consider themselves in terms of spiritual and physical formidability and their willingness to make costly sacrifices for *Jihad* (α = .95). Finally, as the current study was conducted just the days after the terrorist attack in Paris on November 15th 2015, participants were asked to what extent each factor attributed to the Islamic State – spiritual or physical formidability – was important to conduct the attacks, and which of them caused more fear.

8.2 Results

Perception of Spain

Perceptions of the spiritual and physical formidability of Spaniards were moderately correlated with each other, as were perceptions of spiritual and physical formidability of humanity and also perceptions of spiritual formidability of Spaniards and humanity. As shown in Table 8, participants perceived Spaniards as less formidable than the whole of humanity, physically (t[314] = −14.80, p < .001) and spiritually (t[303] = −9.14, p < .001).

Table 8. Correlations, Descriptives, and Comparisons.

	1	2	3	4	*M*	*SD*
1. Spiritual Formidability of Spain	1	.21**	.35**	.09	48.24	24.32
2. Spiritual Formidability of humanity		1	.07	.36**	64.09	23.68
3. Physical Formidability of Spain			1	−.03	44.22	23.24
4. Physical Formidability of humanity				1	71.72	21.64

When spiritual and physical formidability of Spaniards were entered into a linear regression on costly sacrifices for democracy, only spiritual formidability was a significant predictor (see Table 9).

Table 9. Linear Regression on Costly Sacrifices for Democracy. Some participants had missing values resulting in an N = 304 participants

	B	*SE*	*β*	*t*
Intercept	0.98	0.15	-	6.56***
Ingroup Spiritual formidability	0.01	0.01	.20	3.30**
Ingroup Physical Formidability	−0.03	0.01	−.07	−1.21
		$F_{(2,301)}$ = 5.46, p = .005, R^2 = .03		

Taking the perspective of ISIS

Responses were moderately correlated. Spiritual formidability of ISIS was negatively correlated with the spiritual and physical formidability of humanity. Participants perceived that members of ISIS consider themselves more formidable spiritually than physically (t[314] = 6.31, p < .001) and, to an even greater extent, stronger than humanity both spiritually ($t_{[314]}$ = 26.86, p < .001) and physically ($t_{[314]}$ = 15.13, p < .001), (see Table 10).

Table 10. Correlations, Descriptive Statistics, and Comparisons.

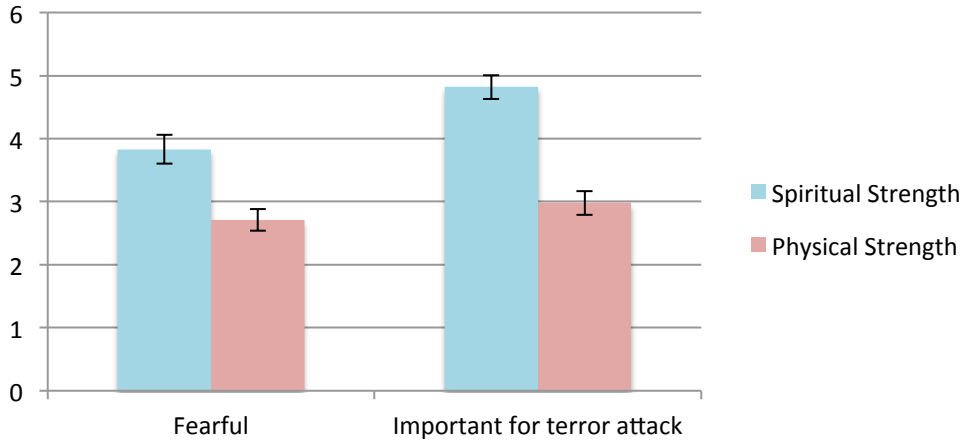
	1	2	3	4	*M*	*SD*
1. Spiritual Formidability of ISIS	1	−.49**	.35**	−.21*	88.44	19.02
2. Spiritual Formidability of humanity		1	−.11*	.39**	27.72	27.26
3. Physical Formidability of ISIS			1	−.43**	79.24	25.51
4. Physical Formidability of humanity				1	39.09	30.12

When meta-perception of spiritual and physical formidability of ISIS members was entered into a linear regression on costly sacrifices for *Jihad*, only spiritual formidability was a significant predictor (see Table 11).

Table 11. Linear Regression on Costly Sacrifices for *Jihad.*

	B	*SE*	*β*	*t*
Intercept	2.29	0.40	-	5.65***
ISIS Spiritual Formidability	0.01	0.01	.31	5.56***
ISIS Physical Formidability	0.01	0.01	.08	1.35
	$F_{(2,312)} = 21.68$, $p < .001$, $R^2 = .12$			

Spiritual formidability was rated as more important to carrying out the Paris terror attacks, $t_{(314)} = 17.22$, $p < .001$; and as more to be feared than physical formidability, $t_{(314)} = 10.04$, $p < .001$ (see Supplementary Figure 14).



Supplementary Figure 14. How Fearful and Relevant Spiritual and Physical Formidability are. Error bars show 95% CI.

9. Study 9 (*N* = 1164): Projection Study II

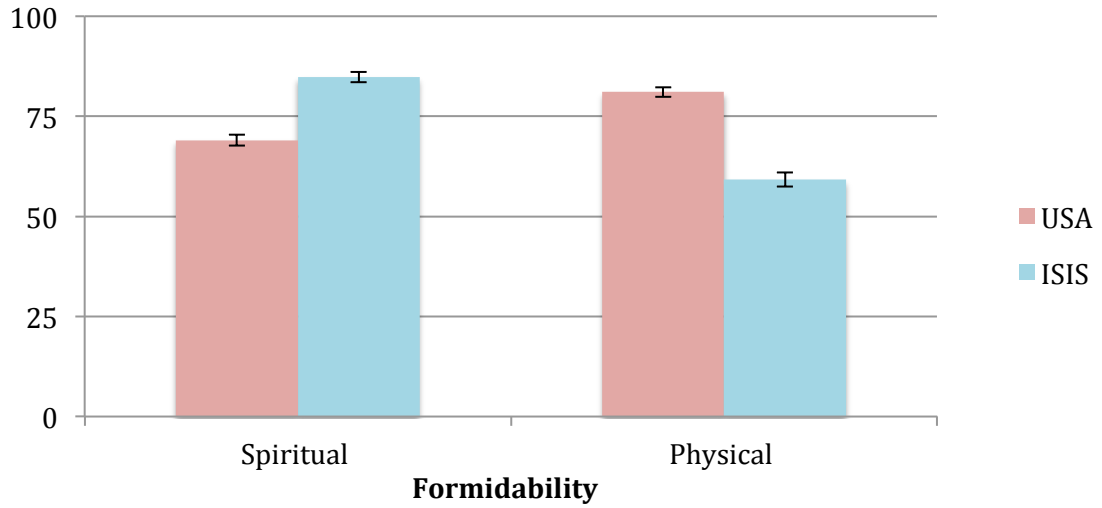
9.1 Method

One thousand one hundred sixty-four participants (58.8%% female) ranging in age from 18 to 75 (*M* = 35.08, *SD* = 12.52) volunteered to participate in this study.

Participants reported their perceived spiritual and physical formidability of North Americans (right) and members of the Islamic State (left) using the dynamic Intergroup Formidability Measure with a slider that ranged between 0 and 100. Intergroup Physical Formidability and Intergroup Spiritual Formidability Indexes were created by subtracting USA physical and spiritual formidability from ISIS physical and spiritual formidability. Accordingly, positive values indicated ISIS bias, whereas negative values showed USA bias. Then, participants reported perceived willingness to make costly sacrifices for *Jihad* and for democracy, respectively, using a Likert scale from 0 to 6. They also indicated to what extent physical and spiritual formidability were relevant and positive to winning a conflict in the long-run (using a Likert scale from 0 to 6). Finally, participants indicated the most relevant and positive choice for victory in the long-run.

9.2 Results

Participants perceived a clear USA bias on physical formidability, but an ISIS bias for spiritual formidability (see Supplementary Figure 15).



Supplementary Figure 15. Intergroup Spiritual Formidability and Physical Formidability. Error bars show 95% CI.

As shown in Table 12, participants perceived North Americans as physically more formidable than the Islamic State ($t[1163] = 20.70$, $p < .001$), but weaker spiritually ($t[1161] = 18.37$, $p < .001$).

Table 12. Correlations, Descriptive Statistics, and Comparisons.

	1	2	3	4	*M*	*SD*
1. Spiritual Formidability of ISIS	1	.20**	.32*	.25**	84.84	23.22
2. Spiritual Formidability of USA		1	.13**	.39**	69.02	23.12
3. Physical Formidability of ISIS			1	.02	59.19	30.01
4. Physical Formidability of USA				1	81.07	20.53

When intergroup Spiritual formidability and Physical formidability were entered into a linear regression on costly sacrifices for democracy and Jihad (see Table 13), only intergroup Spiritual formidability was a significant predictor: positive in the case of sacrifices for *Jihad* (i.e. more ISIS bias, more sacrifices for *Jihad*), and negative in the case of sacrifices for democracy (i.e., more USA bias, more sacrifices for democracy).

Table 13. Linear Regressions on Costly Sacrifices for Democracy and *Jihad.*

Costly Sacrifices for Democracy				
	B	*SE*	*β*	*t*
Intercept	2.83	0.06	-	46.29***
Intergroup Spiritual Formidability	−0.01	0.01	−.07	−2.45*
Intergroup Physical Formidability	0.01	0.01	−.01	−0.32
	$F_{(2,1159)} = 3.34$, $p = .036$, $R^2 = .004$			

Costly Sacrifices for *Jihad*				
	B	*SE*	*β*	*t*
Intercept	5.07	0.06	-	92.03***
Intergroup Spiritual Formidability	0.01	0.01	.11	3.77***
Intergroup Physical Formidability	0.01	0.01	.03	1.05
	$F_{(2,1159)} = 8.74$, $p < .001$, $R^2 = .01$			

When spiritual and physical formidability of North Americans were entered into a linear regression on costly sacrifices for democracy, only spiritual formidability was a significant predictor. When spiritual and physical formidability of members of the Islamic State were entered into a linear regression on costly sacrifices for democracy, spiritual formidability was a stronger predictor (see Table 14).

Table 14. Linear Regressions on Costly Sacrifices for Democracy and *Jihad.*

Costly Sacrifices for Democracy				
	B	*SE*	*β*	*t*
Intercept	2.04	0.20	-	10.37***
Spiritual formidability of USA	0.01	0.01	.12	3.72***
Physical Formidability of USA	0.01	0.01	.03	1.01
$F_{(2,1159)} = 10.55$, $p < .001$, $R^2 = .02$				

Costly Sacrifices for *Jihad*				
	B	*SE*	*β*	*t*
Intercept	3.80	0.15	-	24.62***
Spiritual formidability of ISIS	0.01	0.01	.21	7.13***
Physical formidability of ISIS	0.01	0.01	.08	2.72**
$F_{(2,1159)} = 39.43$, $p < .001$, $R^2 = .06$				

Finally, participants were asked to evaluate the relevance for winning a battle and the valence of spiritual and physical formidability. *T*-tests for one sample showed that both factors were evaluated as highly relevant and positive, significantly above the scale's mid-point 3 (see Table 15).

Table 15. Descriptive Statistics and Comparisons for Relevance and Valence.

	N	*M*	*SD*	*LowCI*	*HighCI*	*t (1163) (mean point = 3)*
Relevance Physical Formidability	1164	4.86	1.22	1.79	1.93	51.95***
Relevance Spiritual Formidability	1164	4.82	1.49	1.73	1.90	41.64***
Valence Physical Formidability	1164	4.61	1.40	1.53	1.69	39.21***
Valence Spiritual Formidability	1164	4.50	1.74	1.40	1.60	29.51***

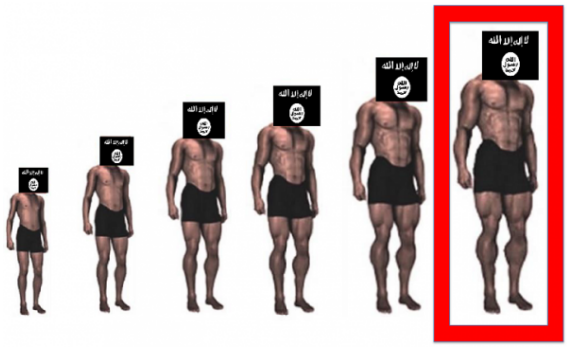
However, when participants had to determine which factor was most important for a battle, and which was the most positive, in both cases the preference for spiritual formidability was strongly significant, 56.8%, $\chi^2_{(1)} = 21.45$, $p < .001$, and 57.7%, $\chi^2_{(1)} = 27.84$, $p < .001$.

10. Study 10 ($N = 441$): Experiment Spiritual Formidability I

10.1 Method and Design

Four hundred forty-one Spanish undergraduates (55.8% female) ranging in age from 18 to 86 ($M = 37.33$, $SD = 13.15$) volunteered to participate in this study. Participants were randomly assigned to a 2 (information about how most Spaniards perceive the spiritual vs. physical formidability of the Islamic State) × 3 (information about how strong the formidability is perceived: control vs. weak vs. strong) between-factor design. Bodies of different sizes represented the strength of the perceived formidability (see Supplementary Figure 16 for an example of the manipulation).

Some days ago, we did a study where we asked participants to choose among a set of images that one that best represented the spiritual formidability of Spain and the Islamic State. These figures can increase in both strength and size. The left figure indicates a weaker spiritual formidability, whereas the right one reflects a superb spiritual formidability. **Regarding the spiritual formidability of the Islamic State, 80% of the Spanish participants chose the right figure that is marked in red. It seems that most participants consider that the SPIRITUAL FORMIDABILITY of ISIS is VERY HIGH.**



Supplementary Figure 16. Manipulation Study 10 ($N = 441$).

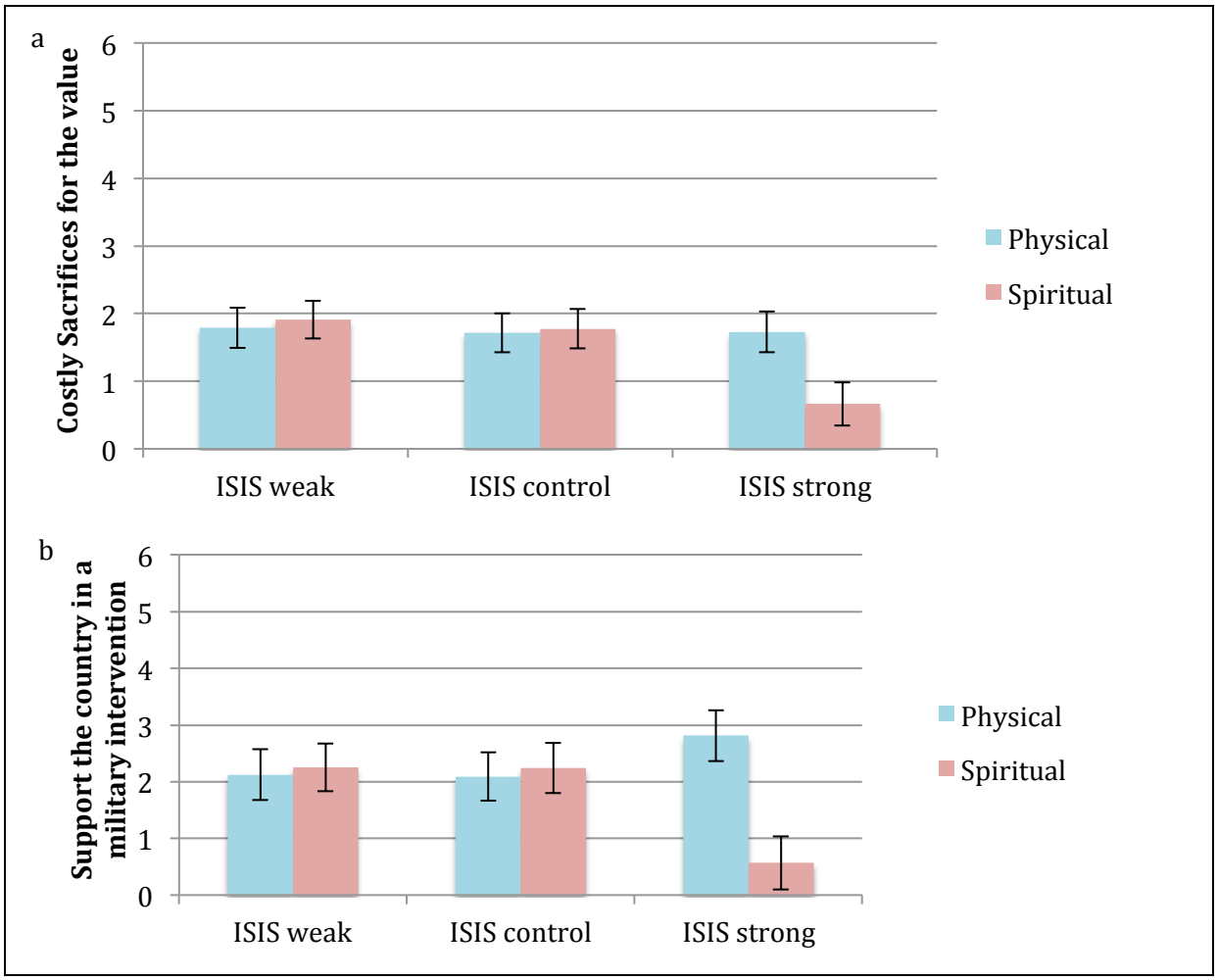
Next, participants reported willingness to make costly sacrifices for democracy ($\alpha = .89$) and willingness to support the country in an armed intervention (one item) using a Likert scale from 0 to 6.

10.2 Results

Analyses on costly sacrifices for democracy and support in an armed intervention yielded a significant two-way interaction, $F_{(2,435)} = 9.32$, $p < .001$, $\eta_p^2 = .04$; and $F_{(2,435)} = 17.88$, $p < .001$, $\eta_p^2 = .08$, respectively. Pairwise comparisons with *Bonferroni* tests indicated that when the Islamic State was perceived strong on spiritual formidability participants showed the lowest level of costly sacrifices for democracy, $F_{(2,435)} = 19.40$, $p < .001$, $\eta_p^2 = .08$, compared to the control ($p < .001$) and the weak condition ($p < .001$), (see Supplementary Figure 17a). No differences were found between control and weak condition ($p = 1.00$). Exactly the same pattern appeared with support for an armed intervention, $F_{(2,435)} = 17.47$, $p < .001$, $\eta_p^2 = .07$ (see Supplementary Figure 17b).

There were no differences on costly sacrifices or support for an armed intervention with regard to physical formidability, $p > .05$. When ISIS was depicted as strong, participants were less willing to make costly sacrifices for democracy or support an armed intervention in the spiritual condition than in the physical condition, $F_{(1,435)}= 22.80$, $p < .001$, $\eta_p^2 = .05$, and $F_{(1,435)}= 45.78$, $p < .001$, $\eta_p^2 = .10$, respectively.

There was a main effect of formidability on costly sacrifices and support, $F_{(1,435)}= 5.69$, $p = .017$, $\eta_p^2 = .01$ and $F_{(1,435)}= 12.73$, $p < .001$, $\eta_p^2 = .03$ respectively, with less sacrifice and support in the spiritual formidability condition than the physical formidability condition. There was also a main effect of perceived formidability on costly sacrifices such that participants were less willing to sacrifice when ISIS was depicted as strong compared to the other two conditions, $F_{(2,435)}= 10.34$, $p < .001$, $\eta_p^2 = .05$.



Supplementary Figure 17. Costly sacrifices and support the country in an armed intervention Study 10. Error bars show 95% CI.

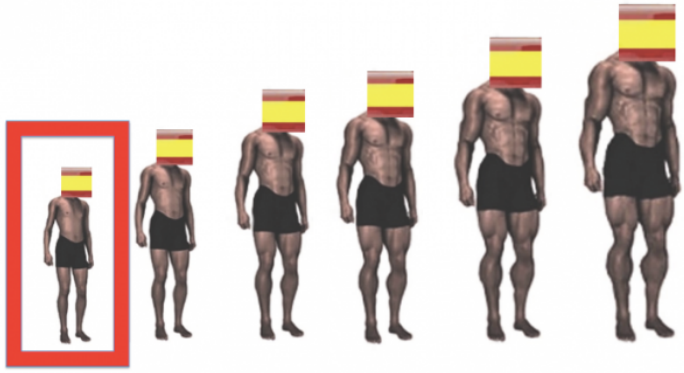
11. Study 11 (*N* = 523): Experiment Spiritual Formidability II

11.1 Method

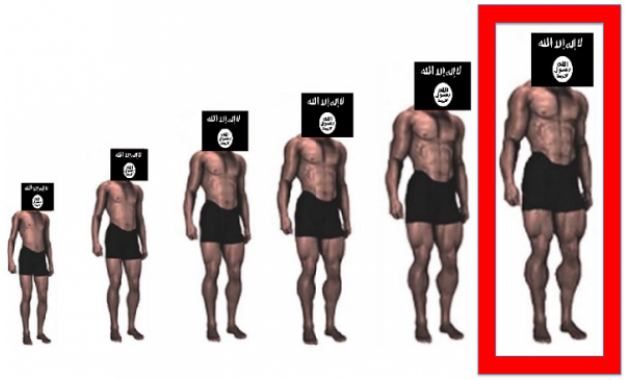
Five hundred and twenty-three people (63.5% female) ranging in age from 18 to 85 (*M* = 35.67, *SD* = 12.22) volunteered to participate in this study.

Participants were randomly assigned to a 2 (information about the spiritual formidability of the ingroup or the spiritual formidability of the Islamic State) × 3 (information about the strength of the spiritual formidability: control vs. weak vs. strong) between-factor design (see Supplementary Figure 18). Then, participants reported willingness to make costly sacrifices for democracy (α = .92) and their willingness to support the country in a military intervention (one item) using a Likert scale from 0 to 6.

Some days ago, we did a study where we asked participants to choose among a set of images that one that best represented the spiritual formidability of Spain and the Islamic State. These figures can increase in both strength and size. The left figure indicates a weaker spiritual formidability, whereas the right one reflects a superb spiritual formidability. **Regarding the spiritual formidability of Spain, 80% of the Spanish participants chose the left figure marked in red. Most participants appear to consider the SPIRITUAL FORMIDABILITY of SPAIN to be VERY LOW.**



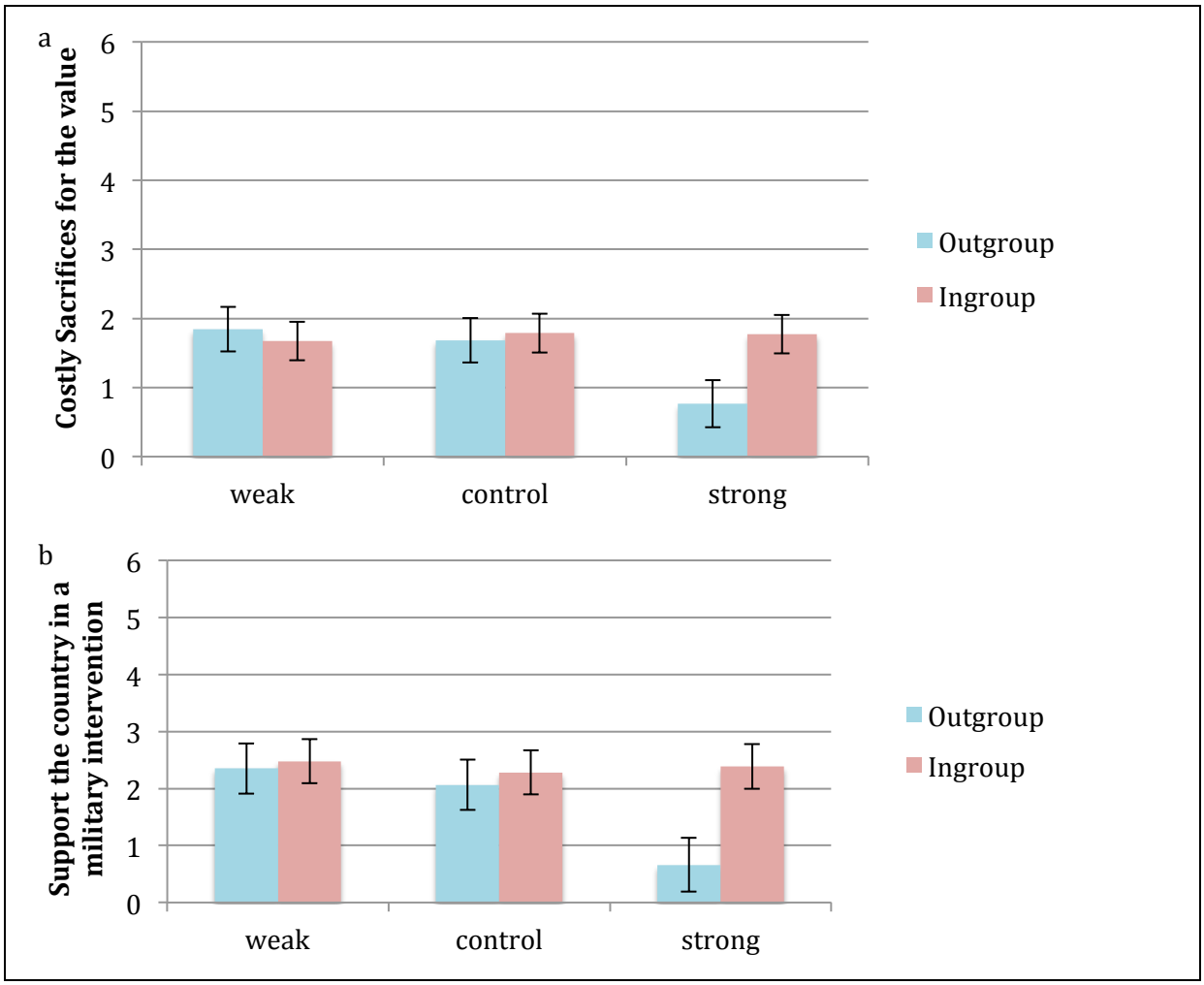
Regarding the spiritual formidability of the Islamic State, 80% of the Spanish participants chose the right figure marked in red. Most participants appear to consider the SPIRITUAL FORMIDABILITY of ISIS to be VERY HIGH.



Supplementary Figure 18. Manipulation Study 11 (*N* = 523).

11.2. Results

Analyses of costly sacrifices for the democracy and support for an armed intervention yielded a significant two-way interaction, $F_{(2,517)} = 7.78$, $p < .001$, $\eta_p^2 = .03$ and $F_{(2,517)} = 8.62$, $p < .001$, $\eta_p^2 = .03$, respectively. When the Islamic State was perceived as spiritually formidable, participants showed the lowest level of costly sacrifices for democracy, $F_{(2,517)} = 11.73$, $p < .001$, $\eta_p^2 = .04$ (see Supplementary Figure 19a), and support for an armed intervention, $F_{(2,517)} = 14.97$, $p < .001$, $\eta_p^2 = .06$ (see Supplementary Figure 19b) compared to the control and weak conditions (*ps* < .001). No differences were found for the manipulation of ingroup spiritual formidability on sacrifices, $F_{(2,517)} = 0.20$, $p = .820$; or on support for an armed intervention, $F_{(2,517)} = 0.25$, $p = .779$.



Supplementary Figure 19. Costly Sacrifices and Support the country in an armed intervention Study 11. Error bars show 95%CI.

12. Study 12 (*N* = 470): Spiritual Formidability and Emotions

12.1 Method

Four hundred and seventy people (51.9% female) ranging in age from 18 to 75 (M = 36.75, SD = 12.79) volunteered to participate in this study.

Participants responded to a questionnaire in which they had to estimate the physical and spiritual formidability of the ingroup (Spain) and the outgroup (Islamic State) using the Intergroup Formidability Measure. Then, they reported to what extent the previous representation of the Spiritual/Physical formidability evoked a set of negative emotions (fear, panic, defenselessness, anger) using a Likert scale from 0 (*Totally disagree*) to 6 (*Totally agree*).

12.2 Results

People felt more fear related to the representation of spiritual formidability (M = 2.82; SD = 1.95) than to representation of physical formidability (M = 2.62; SD = 1.91), $t_{(463)}$ = 2.53, p = .012. No differences were found for other emotions, ps > .05.

Ingroup bias was related to reduced fear. Fear was negatively related to intergroup spiritual formidability, $r_{(470)} = -.34$, $p < .001$, and intergroup physical formidability, $r_{(450)} = -.43$, $p < .001$.

13. Study 13 (*N* = 311): Perceived Intergroup Spiritual vs. Physical Formidability

13.1 Method

Three hundred and eleven people (61.4% female) ranging in age from 18 to 82 (M = 35.55, SD = 12.95) volunteered to participate in this study.

Participants reported their perception of ingroup (Spain) and outgroup (ISIS) physical and spiritual formidability using the Intergroup Formidability Measures from 0 to 100. Then, they indicated their willingness to make costly sacrifices for democracy (α = .73) and for the country (α = .81) using a Likert scale from 0 to 6.

13. 2 Results

Results showed that the difference in spiritual formidability predicted costly sacrifices for democracy and for the country such that costly sacrifices were less likely when participants perceived the outgroup as spiritually formidable or the ingroup as spiritually weak.

Table 15. Linear Regressions on Costly Sacrifices.

	Costly Sacrifices for the Country			
	B	*SE*	*β*	*t*
Intercept	2.21	0.09	-	24.44***
Intergroup Physical Formidability	−0.01	0.01	−.01	−0.03
Intergroup Spiritual Formidability	0.01	0.01	.25	4.03***
	$F_{(2,308)} = 10.30$, $p < .001$, $R^2 = .06$			

	Costly Sacrifices for Democracy			
	B	*SE*	*β*	*t*
Intercept	1.97	0.08	-	25.98***
Intergroup Physical Formidability	−0.01	0.01	−.01	−0.04
Intergroup Spiritual Formidability	0.01	0.01	.22	3.47**
	$F_{(2,308)} = 7.63$, $p = .001$, $R^2 = .04$			

14. Validation of Materials

The goal of this section is to present relevant information on the validation process of some of the materials we have used in our experiments.

The first section reviews previous work concerning the validation and use of Identity Fusion measures. The second section includes Study 14 validating a measure developed for choosing between a value versus a group. The third section includes Study 15 validating a measure of Spiritual Formidability.

14.1. Identity fusion

Identity fusion is a general psychosocial process by which fused individuals come to see their personal identities as inseparable from their group identities. As a general process, identity fusion operates regardless of the specifics of the group; for example, individuals may be fused with extremist groups, countries, their families, or even twin siblings (Vázquez et al., 2017; Whitehouse et al., 2017). The pictorial index of identity fusion used here is a variation of the same measure that has been validated in multiple studies in large- and small-scale societies for predicting judgments and decisions relating to a visceral commitment with a group (Swann, Buhrmester et al., 2014), and for reliably predicting behavior as varied as violent extremism and sex-change operations (for a review, see Gómez & Vázquez, 2015; Swann & Buhrmester, 2015).

This previous work has consistently demonstrated that both willingness to behave and actual behaviors differ for those who are fused and those who are not. The variant used in the

field study has an additional option on the left side of the scale (now the "A" option), which allows participants to distance themselves from the group. This small variant does not affect results, and previous studies also show that it makes no difference if full fusion is presented as the rightmost or leftmost option, or if the small circle within the big circle is off center or not (Swann et al., 2009). This is a readily understandable measure that we have used in many different socio-cultural contexts.

The pictorial index of identity fusion that we used in the field study (Supplementary Figure 1) is the same scale that was introduced when identity fusion theory first appeared (Swann et al., 2009), with only the exception of including an additional option on the left (Option A). The reason was that we wanted to offer participants a further possibility of distancing themselves from the group. Preliminary tests when Swann et al. (2009) worked on the original measure indicated that this small variant did not affect the results.

There are 3 relevant aspects of Identity Fusion that are of interest here, in particular for the field study:

1. It might be argued that participants choosing the "fused" option (in this case "F") could think that they are "the center" of the group, because of the position of the small circle inside the big circle. However, preliminary studies from Swann et al. (2009) tested an alternative measure where the small circle was inside the big circle but not in the middle. Participants choosing this option and also the option where the small circle was in the center of the big circle did not differ in their responses to willingness to fight and die for the group. For this reason, the authors decided to drop this option for the measure.

2. Because only the figure on the right side represents feelings of fusion with the group, it might be argued that left-handed individuals could respond differently to the scale and the outcome measures. However, studies from Swann et al. (2009) demonstrated that no differences occurred.

3. Finally, having the fusion option on the right side might produce different findings in those cultures where individuals write from left to write. Studies from Swann et al. (2009) demonstrated that responding to the fusion scale that included the fusion option in the left corner did not produce any differences.

In numerous previous studies, identity fusion predicted willingness to fight and die for the group, (Gómez, Brooks et al., 2011; Gómez, Morales, Hart, Vázquez, & Swann, 2011; Swann, Buhrmester et al., 2014; Swann, Gómez, Huici, Morales, & Hixon, 2010; Swann et al., 2009), willingness to sacrifice for ingroup members on different intergroup and intragroup versions of the trolley dilemma (Gómez, Brooks et al., 2011; Swann, Gómez et al., 2014; Swann, Gómez, Dovidio, Hart, & Jetten, 2010), refusing to leave the group after being ostracized (Gómez, Morales et al., 2011), and readiness to deny group wrongdoing (Besta, Gómez, & Vázquez, 2014). Identity fusion also predicts actual behavior: for example, participants who were strongly fused with their country performed better in a racing game

when playing as an avatar that represented their country (Swann, Gómez, Huici et al., 2010), donated more money to ingroup members (Gómez, Morales et al., 2011; Swann, Gómez, Huici et al., 2010), or wrote supportive notes and donated funds to victims of the 2013 Boston Marathon bombings (Buhrmester, Fraser, Lanman, Whitehouse, & Swann, 2014).

It is important to note that the identity fusion measure distinguishes between those individuals from the same group that are willing to make extreme sacrifices for the group from those who are not, no matter the group they belong to. Identity fusion is thus a general psychosocial process and, regardless of the specific group with which an individual is fused (a terrorist group, a country, or their family), fused individuals are more willing to die for such a group than those who are not fused.

In addition to the original pictorial index of identity fusion, which we used on the frontline, we also used a verbal scale of identity fusion in our online studies (Gómez, Brooks et al., 2011) as well as a computer-based *Dynamic Identity Fusion Index* (DIFI; Jiménez et al, 2015), where small and big circles represent the personal and social identities and participants decide how close their personal and social identities are by clicking the mouse and moving the circles. Study 14 and 15 show no appreciable differences between pictorial, verbal and dynamic indices in assessing fusion or predicting behavior from fusion.

14.2. Study 14 (N = 375): Value versus Group

As in Study 1, a dynamic measure was created to enable participants to choose between sacred values and the groups with which they are fused.

Study 14 (N = 375, 57.6% females; M_{age}= 37.49; SD = 13.58) aimed to validate this measure in which participants had to choose between the group they were fused with and the sacred value they shared with their group. Initially, participants were asked to indicate a group with which they felt complete unity and commitment, represented by the option of being totally fused (a small circle completely embedded within a bigger circle, 58.4% chose family), and also to choose a value which they would not give up for any amount of money (20.3% chose love or affection). The question order was counterbalanced.

To check whether participants were really fused with the group reported we used the DIFI (Jiménez et al., 2015). The measure showed that 57.9% were completely fused with their group. We used a common measure of sacred values (Sheikh et al., 2016), where participants are offered money for giving up their sacred value; 83.2% refused to exchange their value for money. Finally, we identified devoted actors (i.e., wholly fused participants whose values were sacred); 51.5% (n = 193) of the sample met the criterion for being devoted actors.

As evidence of validation, most devoted actors (97.9%) agreed with the representation of the three overlapping circles versus 65.9% of non-devoted actors who also agreed with such a representation, $\chi^2_{(1)} = 65.76$, $p < .001$.

Study 3 also showed that most devoted actors (98.3%) agreed with the representation of the three overlapping circles compared to 65.1% of non-devoted actors, $\chi^2_{(1)} = 219.44$, $p < .001$. Study 4 confirmed this finding: most devoted actors (97.1%) identified with the representation of the three overlapping circles versus 61.4% of non-devoted actors, $\chi^2_{(1)} = 122.22$, $p < .001$.

14.3. Spiritual Formidability versus Physical Formidability

The idea of using a human body to represent the construct of formidability is not new. Holbrook and Fessler (2013) argued that the mind can heuristically represent those factors perceived as important to win a confrontation as a simple metaphorical representation of physical size and strength. The measure of muscularity (a man varying from a very thin individual to a very muscular one) has been successfully used in previous research as an indicator of formidability, a concept that it is not exclusively related to physical strength but also to some ability to fight (Fessler & Holbrook, 2013, 2014; Fessler et al., 2014; Fessler et al., 2012; Holbrook & Fessler, 2013). Given that changes in body shape and size could be reliably related to perceived ability to win a confrontation between individuals, we thought it plausible that changing body shape and size in reference to the whole group might also be reliably related to perceived ability of a whole group to prevail in intergroup conflict (see an example of the physical formidability measure in Sheikh et al., 2016).

The same measure, however, can refer to two different dimensions: physical and spiritual formidability. Based on interviews with frontline combatants, and particularly those belonging to groups on the official U.S. list of terrorist organizations (i.e., ISIS, PKK), we found and tested the effects of an additional factor, perceived spiritual formidability. From the information in these interviews we developed new, dynamic measures of physical and spiritual formidability; and we hypothesized, more generally, that adversarial calculations of relative commitment to the cause, in the form of perceived spiritual formidability, trumps calculations of relative material strength among those Devoted Actors most willing to make costly sacrifices (see Studies 10-13, above). Study 15 examined the relation of the spiritual formidability measure with different constructs.

14.4. Study 15 (N = 257)

The goal of this correlational study was to test the discriminant validity of our measure of Spiritual Formidability. We focused on a local group in which personal relationships are usually close: the family. Two hundred fifty-seven participants (56.80% women, $M_{age} = 34.55$, $SD = 12.36$, 231 Spaniards) were recruited using a snowball technique. Participants completed the questionnaire online. They were asked to focus on their families in answering the questionnaire. The measures were: the verbal scale of identity fusion with family (Gómez, Brooks et al., 2011), $\alpha = .69$; spiritual formidability of the family; family efficacy (adapted from Schwarzer and Jerusalem, 1995), $\alpha = .93$; perceived invulnerability of the family (Gómez, Brooks et al., 2011), $\alpha = .81$; entitativity (Hamilton & Sherman, 1996), $\alpha = .83$, perceived morality (self-elaboration), $\alpha = .75$; resilience (5 items adapted from Smith

et al., 2008), α = .77; immortality (4 items adapted from Huta and Zuroff, 2007), α = .81; honor (5 items adapted from Rodriguez Mosquera, Fischer, Manstead, and Zaalberg, 2008), α = .86; and moral vitalism (Bastian et al., 2015), α = .84. Finally, participants were asked to rate the extent to which their families and they personally were religious. All scales ranged from 0 (*Completely disagree*) to 6 (*Completely agree*).

As Table 17 shows, spiritual formidability was positively and moderately correlated with efficacy, entitativity, fusion and morality. However, the correlation with the religiosity of family was low, and correlation with personal religiosity was not significant.

Table 17. Correlations between Spirituality of family and other constructs (**$p < .001$)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Spirituality family												
2. Fusion	.34**											
3. Efficacy	.37**	.39**										
4. Invulnerability	.23**	.36**	.42**									
5. Entitativity	.36**	.56**	.52**	.33**								
6. Morality	.32**	.39**	.46**	.39**	.49**							
7. Resilience	.23**	.11	.46**	.29**	.21**	.20**						
8. Immortality	.24**	.21**	.37**	.45**	.27**	.21**	.09					
9. Honor	.02	.28**	.09	.15*	.19**	.10	-.14*	.11				
10. Vitalism	-.02	.11	.01	.14*	.05	.07	-.11	.14*	.12			
11. Family religiosity	.15*	.15*	.07	.10	.15*	.04	-.09	.14*	.28**	.11		
12.Personal religiosity	.08	.17**	.07	.12*	.14*	.07	.01	.05	.25**	.23**	.67**	

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