

What Makes a Group Worth Dying for? Identity Fusion Fosters Perception of Familial Ties, Promoting Self-Sacrifice

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We sought to identify the mechanisms that cause strongly fused individuals (those who have a powerful, visceral feeling of oneness with the group) to make extreme sacrifices for their group. A large multinational study revealed a widespread tendency for fused individuals to endorse making extreme sacrifices for their country. Nevertheless, when asked which of several groups they were most inclined to die for, most participants favored relatively small groups, such as family, over a large and extended group, such as country (Study 1). To integrate these findings, we proposed that a common mechanism accounts for the willingness of fused people to die for smaller and larger groups. Specifically, when fused people perceive that group members share core characteristics, they are more likely to project familial ties common in smaller groups onto the extended group, and this enhances willingness to fight and die for the larger group. Consistent with this, encouraging fused persons to focus on shared core characteristics of members of their country increased their endorsement of making extreme sacrifices for their country. This pattern emerged whether the core characteristics were biological (Studies 2 and 3) or psychological (Studies 4–6) and whether participants were from China, India, the United States, or Spain. Further, priming shared core values increased the perception of familial ties among fused group members, which, in turn, mediated the influence of fusion on endorsement of extreme sacrifices for the country (Study 5). Study 6 replicated this moderated mediation effect whether the core characteristics were positive or negative. Apparently, for strongly fused persons, recognizing that other group members share core characteristics makes extended groups seem “family like” and worth dying for.

Keywords: identity fusion, self-sacrifice, culture

People almost never kill and die for the Cause, but for each other: for their group, whose cause makes their imagined family of genetic strangers—their brotherhood, fatherland, motherland, homeland, totem, or tribe.

—Scott Atran, *Talking to the Enemy: Faith, Brotherhood, and the (Un)Making of Terrorists*

Many people make personal sacrifices for their group, but precious few make the ultimate sacrifice. This is unsurprising, as the decision to sacrifice oneself defies the survival instinct, one of the most powerful of all human predispositions. What is surprising is that there exist psychological forces that are so potent that they override people's survival instinct. These powerful forces are the focus of this report. After Atran (2010), we suggest that these forces consist of the perception of familial ties to other members of the group. Such perceptions emerge when people who have developed a visceral sense of oneness with a group—dubbed *identity fusion*—feel that group members share core characteristics. The fusion process produces individuals who believe that their actions on the group's behalf are not for faceless strangers but for “family.” We derived these hypotheses from identity fusion theory (Swann, Jetten, Gómez, Whitehouse, & Bastian, 2012), a formulation that was recently developed to explain why people make extreme sacrifices for their group.

Identity Fusion Theory

Identity fusion occurs when people experience a visceral sense of “oneness” with their group. This sense of oneness involves the union of personal identity (referring to idiosyncratic features of the individual) and social identity (referring to the alignment the individual has with a group). The union of the personal and social identities does not diminish the importance or impact of either one; instead, both sets of identities remain salient and agentic among fused persons. Moreover, the relational ties that fused persons form with other group members fuel their fusion with the group. Together, the agentic personal and social identities as well as relational ties fused persons have toward other group members predispose them to enact extreme sacrifices for the group.

A growing literature has documented the capacity of measures of identity fusion to predict self-sacrifice for the group. For example, strongly fused persons are especially apt to endorse physically fighting and dying to defend their country from threats (Gómez, Brooks, et al., 2011; Swann, Gómez, Seyle, Morales, & Huici, 2009). In intergroup variations of moral dilemmas, strongly fused persons are particularly inclined to endorse committing suicide to save the lives of members of their country (Gómez, Brooks, et al., 2011; Swann, Gómez, Dovidio, Hart, & Jetten, 2010). Moreover, strongly fused persons respond to irrevocable ostracism by other group members by increasing their stated willingness to sacrifice themselves for the group (Gómez, Morales, Hart, Vázquez, & Swann, 2011). In addition, when presented with an opportunity to donate to fellow Spaniards in need of financial help, strongly fused persons donated more personal funds than weakly fused persons (Swann, Gómez, Huici, Morales, & Hixon, 2010). Finally, recent evidence suggests that fusion is most effective in predicting extreme, compared to relatively modest, sacrifices for the group (e.g., major rather than minor surgeries; Swann et al., 2014).

Although previous theorists have developed constructs that resemble fusion in some ways (for a discussion, see Swann et al., 2012), the closest intellectual cousin to fusion is “group identification” (e.g., Ellemers, Spears, & Doosje, 1997; Postmes, Haslam, & Jans, 2013). The group identification construct is based on social identity theorizing (Tajfel & Turner, 1979). Although identification and fusion are similar in several respects, there are important differences between the two constructs. Consider the function of other group members. Social identity formulations hold that when the group is salient to an individual, other group members are principally recognized for their capacity to carry information regarding the values and norms of the group. As such, group members are bound to one another through *collective* ties that are based on the degree to which members embody the prototypic qualities of the group rather than the unique relationships they establish with one another. In contrast, fusion theory holds that even when the group is salient, its members recognize and appreciate the unique relationships they form with fellow group members, much as family members do. Fused persons may thus form

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strong *familial or relational ties* to other group members as well as *collective ties* to the group category (Brewer & Gardner, 1996; Caporael, 2001; for a discussion, see Swann et al., 2012).¹

In small groups, it is easy to understand how fused persons form familial as well as collective ties to fellow group members, as such groups afford ample opportunity for members to develop close relationships with one another. Members of larger groups, however, may develop personal relationships with only a small proportion of the members of the group. How then, do people who are fused with large groups come to perceive that they have familial ties with *all* group members? One potential answer to this question may come from examining the distinction between local and extended fusion.

Local fusion typically emerges in relatively small groups such as families, tribal units, and small bands of teammates or soldiers. Members of such groups typically share important “core” characteristics, most notably genes and values. For fused persons, knowing that these core characteristics are shared may reinforce the perception of familial ties to fellow group members, ties that encourage them to make extreme sacrifices for the group.

In contrast, extended fusion emerges in relatively large groups. Examples include countries (e.g., Gómez, Brooks, et al., 2011; Swann et al., 2009) and political parties (Buhrmester et al., 2012). Even though it is impossible to form *actual* familial ties to all other members of large groups, under the proper conditions fused persons may *project* familial ties onto them. This projection process may be set in motion by priming shared characteristics of the group members. Priming shared core characteristics may foster the perception of oneness within the group, which should, in turn, encourage the perception of familial ties toward other group members. These perceptions may then encourage persons who are fused with large groups to endorse dying for their group. This reasoning is consistent with the common assertion that the perception of familial ties to other group members is often a precursor of endorsement of extreme behavior for the group (e.g., Atran, 2010; Junger, 2010).

Triggering the Projection Process by Priming Shared Core Characteristics

Group members may share characteristics that are biological (e.g., genes) as well as socially acquired (e.g., values). The perception of shared *biological* characteristics may be compelling due to a widespread belief that biological qualities of people reflect their real, underlying nature or “essence” (e.g., Hirschfeld, 1996, 2001; Medin, 1989; Medin & Ortony, 1989). Within a shared essence framework, “ingroups” and “outgroups” are presumed to resemble natural kinds (Rothbart & Taylor, 1992), especially when these natural kinds are sharply defined (McGarty, Haslam, Hutchinson, & Grace, 1995; Yzerbyt, Rocher, & Schadron, 1997) or organized around endogamy and descent (Gil-White, 2001). Recently, researchers have shown that it is possible to activate such biological essentialist thinking toward ingroup members by priming people’s beliefs in the genetic determinants of race (Williams & Eberhardt, 2008). A parallel argument can be made with respect to the consequences of activating socially acquired characteristics. Indeed, many of the same arguments that have been made regarding biological essentialism have also been made with respect to *social* essentialism (e.g., Morton, Postmes, Haslam, &

Hornsey, 2009; Rangel & Keller, 2011). Although social essentialism has focused on qualities that people acquire by virtue of birth (e.g., social class), here we extend this logic to qualities that are acquired later in life (e.g., values).

Past research has indicated that priming people’s beliefs that group members share core characteristics will encourage them to perceive that the group itself is meaningful in defining the self (Simon, Hastedt, & Aufderheide, 1997; see also Brewer, 1993; Rubin & Badaea, 2012; Simon, 1992). For strongly fused group members, priming shared core characteristics will do more than this. That is, strongly fused persons perceive other group members not just in terms of their shared group membership, but also in relational terms. Exposure to a shared characteristics prime may strengthen shared identity perceptions but also encourage the fused individual to see the group as composed of individuals who have a uniform, clearly defined “essence” that is common among family members. Moreover, this shift to seeing group members in familial rather than merely relational terms will embolden extreme pro-group behavior, as group members are now family members whom it is the duty of the fused person to support and protect (for a discussion of the link between duty and family ties, see Fuligni & Pedersen, 2002). This reasoning suggests a moderated mediation hypothesis wherein perceptions of familial ties mediate the interactive impact of fusion and shared core characteristics on endorsement of self-sacrifice for the group.

Our analysis of the likely impact of the perception of shared core characteristics has one further implication. If it is the perception of *sharing* core characteristics with other group members that makes group membership especially meaningful for fused persons, then the precise basis of this sense of sharing and communality should not matter. More specifically, whether the core characteristics are negative or positive, priming them should promote the perception of familial ties and endorsement of self-sacrifice.

Overview

To test these hypotheses, we conducted a series of six investigations. We employed a mix of methodologies, including a large international survey, experimental designs, and mediational analyses. We began by attempting to replicate, in six continents, earlier evidence from Europe and North America that strongly fused participants were especially inclined to endorse dying for their country. We then asked if, when given a choice, participants would be more willing to die for groups involving local fusion (e.g., families) rather than groups involving extended fusion (e.g., country). Five experiments then examined the causal role of perceptions of shared characteristics on endorsement of extreme behavior for the group. In all five studies, we expected that fused persons would be especially inclined to endorse dying for the group when encouraged to ponder the biological (genes; Studies 2–3) or psychological characteristics (core values; Studies 4–6) that group members share. We also tested the notion that perception of familial

¹ We conceptualize perception of familial ties as a member of the larger class of relational ties. That is, relational ties are based on the attraction that members of groups have toward other group members in groups whose members have direct contact with one another. Such attraction may be based on the personal qualities of group members as well as membership in the group. Familial ties are a special case of relational ties in which the group is a family or has family like properties.

ties to the group would mediate the impact of priming shared core values on the tendency for fused persons to endorse self-sacrifice (Study 5), even when the shared core values were negative (Study 6).

Study 1: Identity Fusion and Endorsement of Extreme Sacrifice for Country and Family in Six Continents

Study 1 was designed to replicate, in an international sample, earlier evidence of a tendency for fused persons to endorse sacrificing their lives for their country (for a review, see Swann et al., 2012). In addition, we tested the notion that, when given a choice, people are more likely to endorse dying for groups involving local rather than extended fusion.

Method

Participants. Most participants were undergraduates who participated for course credit. The sole exception to this was the sample of American participants who were recruited through MTurk (see Buhrmester, Kwang, & Gosling, 2011) and received a small fee. To enable non-English speakers to complete the questionnaire in their native tongue, the original, English-version of the questionnaire was translated and back translated to the participant's native language.

Respondents were from 11 countries across six different continents ($N = 2,438$ in total). European samples included Germany ($N = 112$, female = 83%, $M_{\text{age}} = 21.94$), Spain ($N = 251$, female = 73%, $M_{\text{age}} = 33.67$), and Poland ($N = 147$, female = 55%, $M_{\text{age}} = 23.87$). Asian countries included China ($N = 239$, female = 28.90%, $M_{\text{age}} = 29.91$), Indonesia ($N = 636$, female = 47%, $M_{\text{age}} = 18.89$), Japan ($N = 106$, female = 75%, $M_{\text{age}} = 19.17$), and India ($N = 100$, female = 49%, $M_{\text{age}} = 21.93$). The other four continents included Australia ($N = 100$, female = 77%, $M_{\text{age}} = 20.35$), Africa (South Africa, $N = 316$, female = 82%, $M_{\text{age}} = 19.11$), North America (United States, $N = 250$, female = 79%, $M_{\text{age}} = 34.69$), and South America (Chile, $N = 181$, female = 77%, $M_{\text{age}} = 22.09$).

Procedure. Participants learned that the study explored the thoughts and feelings participants had about their nationality and their country. They then completed a series of questionnaires. In this study and all of the studies reported in this article, all participants took part voluntarily and all were thanked and debriefed upon completion of the study.

Fusion with country. Fusion was measured using the 7-item verbal fusion scale (Gómez, Brooks, et al., 2011). Example items are "I am one with my country," and "I am strong because of my country" (α s ranging from .70 to .93). Respondents indicated the degree to which each statement reflected their relationship with their country on scales ranging from 0 (*strongly disagree*) to 6 (*strongly agree*). Higher scores reflected higher fusion with country.²

Endorsement of extreme pro-group behaviors. Participants completed Swann et al.'s (2009) measure of endorsement of extreme pro-group behaviors. Respondents rated their agreement with five items tapping willingness to fight for their country (e.g., "I would fight someone physically threatening another person of my country") and two items assessing willingness to die for their country (e.g., "I would sacrifice my life if it saved another country

member's life"). Responses were recorded on 7-point scales ranging from 0 (*totally disagree*) to 6 (*totally agree*). Because past research has shown that the measures of endorsement of extreme behavior are conceptually overlapping and highly correlated, we combined them into a single index labeled endorsement of extreme pro-group behaviors (α s ranging from .64 to .88).

Preferred group to die for. Participants read a list of groups that varied on a continuum from groups that invite predominantly local fusion (immediate family, group of friends) to groups that invite extended fusion (country, favorite sports team, religious group, state, political party, gender group, and university) and indicated the group for which they would be most willing to give up their lives.

Results and Discussion

Endorsement of extreme pro-group behaviors. As can be seen in Figure 1, in every country included in our study, participants displayed a reliable relationship between identity fusion with country and endorsement of extreme behavior for the country. The correlation between fusion with country and endorsement of extreme behavior for the country ranged from $r(237) = .32$ (China) to $r(145) = .61$ (Poland and Spain), all $ps < .001$.

We examined between-country differences in fusion using hierarchical linear modeling (HLM; variance components model predicting fusion with country as the random effect). The results showed that there was substantial variance associated with country, as indicated by an intra-class coefficient of .42. This country effect must be treated cautiously, however, as further analysis indicated that it may have been an artifact of cultural variation in the internal consistency of the fusion scale. That is, those cultures in which the coefficient alpha of the fusion scale was strong were also the cultures in which the correlation between fusion and endorsement of extreme behavior was strong, $r(9) = .62$, $p < .001$.

Note also that despite these country level differences, further HLM analyses that included country effects (random intercept model examining the relationship between fusion and endorsement of extreme behavior with country as the random effect) confirmed the significant relationship between fusion with country and willingness to fight and die for country across the countries, $Z = 13.91$, $B = 0.40$, $SE = 0.03$, $p < .001$ (95% CI [.35, .46]).³

Finally, when we added gender to this same HLM model, we discovered that males endorsed extreme sacrifice for their country more than females, $Z = 3.52$, $B = 0.07$, $SE = 0.02$, $p < .001$ (95% CI [.03, .11]), but gender did not interact with fusion in predicting endorsement of extreme behavior, $Z = 0.23$, $B = 0.00$, $SE = 0.02$, $p = .815$ (95% CI [-.29, .04]).

Preferred group to die for. The majority of participants (86.1%) nominated "family" as the group they were most willing

² In this investigation and all of the studies in the article, we also included Mael and Ashforth's (1992) group identification scale and conducted preliminary analyses including it as a predictor. In previous research on identity fusion (see Swann et al., 2012), identification effects were always weaker than fusion effects and never qualified the effects of fusion. Because this was also true in these studies, we deleted identification from the analyses that we report here. Nevertheless, the relevant analyses are available upon request from the first author.

³ Throughout the article, we designate unstandardized betas with upper case B and standardized betas with lower case b .

to die for. Although the percentages displayed in Table 1 reveal considerable uniformity in this effect,⁴ a chi-square test (country \times choice of local vs. extended fusion group) was significant, $\chi^2(8) = 60.6, p < .001$. This finding suggests some cultural variation in choices (i.e., participants in countries like China nominated extended groups more than did participants in other countries). The important theoretical message here, however, is the overwhelming tendency for participants to endorse dying for a local rather than extended group. Indeed, when we computed the number of participants who chose to die for a local rather than extended group more than 50% of the time, all χ^2 s ($df = 1$) exceeded 75, all $ps < .001$.

The results also revealed that groups associated with extended fusion were nominated far less often than groups associated with local fusion. For example, country was the preferred group to die for 0% of times in some countries (Germany, Poland, and Australia), and the highest percentage was 12.6% (China). Gender of participants did not moderate preferred group to die for whether we tested this within each country (χ^2 s ranged from 2.85, $p = .11$, in China, to 0.01, $p = .99$, in Poland) or collapsed over all countries ($\chi^2 = 55, p = .50$).

Together, the results of Study 1 point to three major conclusions. First, the positive associations between identity fusion with country and endorsement of extreme behavior for one's country were replicated in samples from six continents and 11 countries. Second, when given a chance to endorse dying for several different groups, participants in all of the countries we sampled were especially inclined to die for small groups in general and family in particular, testifying to the psychological allure of the familial ties present in small groups. Third, there was considerable variability in the strength of the relationship between fusion with country and endorsement of extreme behavior for country. Apparently, fusion does not automatically trigger endorsement of extreme behavior

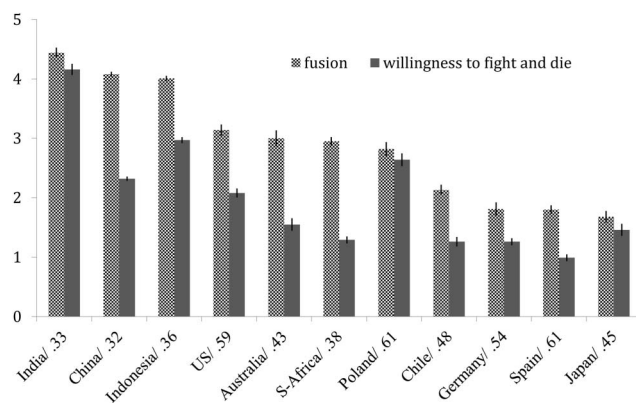


Figure 1. Study 1: Identity fusion with country predicts endorsement of extreme pro-group behaviors. Numbers appearing after the country name refer to the correlation (r) between fusion with country and endorsement of extreme behavior for the country. The 95% confidence intervals for each r are as follows: United States, 95% CI [.49, .69]; Spain, 95% CI [.52, .71]; Japan, 95% CI [.26, .63]; Germany, 95% CI [.39, .70]; Chile, 95% CI [.34, .61]; Poland, 95% CI [.48, .74]; China, 95% CI [.25, .39]; Indonesia, 95% CI [.28, .43]; India, 95% CI [.14, .52]; Australia, 95% CI [.25, .62]; and South Africa, 95% CI [.27, .48]. Bars represent mean responses to fusion with one's country and willingness to fight and die for one's country. Error bars represent ± 1 SE.

Table 1

Study 1: Distribution of Responses (in Percentages) by Country to the Question "What Group Are You Most Willing to Die for?"

Nation	Family	Peers	Country	Religion	Other
United States	84.3	5.6	2.8	2.8	4.4
Spain	93.6	4.0	0.8	0.4	1.2
Japan	78.8	18.2	3.0	0	0
Germany	87.5	12.5	0	0	0
Chile	86.0	4.5	7.3	1.1	1.1
Poland	95.7	2.2	0	2.2	0
China	78.5	4.5	12.6	2.2	1.7
Australia	89.4	5.3	0	3.2	2.1
South Africa	85.1	2.8	2.4	6.6	3.0
<i>M %</i>	86.54	6.62	3.21	2.06	1.5

Note. "Other" column represents sum of responses to five groups: favorite sports team, state, political party, gender, and university.

for large groups. Instead, moderator and mediator variables may influence the strength of the relationship between fusion with country and endorsement of extreme sacrifice for country.

The remaining studies in this article were designed to pinpoint these moderators and mediators. In general, we assumed that people would sacrifice themselves for large groups insofar as they are able to project familial ties onto such groups. This projection process will be facilitated when fused persons focus on shared core characteristics of the group, which, in turn, encourage them to impute familial ties to the group.

Specifically, we predict that among fused persons, the perception of shared core values should enhance perception of familial ties and perception of familial ties should predict increased willingness to fight and die for the group. We explore the moderation hypotheses in Studies 2–6 and add the mediating role of perception of familial ties in Studies 5 and 6. In Studies 2 and 3, we began by priming participants' perceptions that members of their country share common genes.

Study 2: Relation of Fusion and Priming Perception of Shared Genes to Endorsement of Extreme Behavior in China

In Studies 2 and 3, we sought to strengthen the link between fusion and self-sacrifice by priming participants' beliefs that group members shared a common set of genes. To bolster the plausibility of our cover story, we conducted our studies in China and India where citizenship is highly related to bloodline (i.e., Jussanguinis).

In the shared-genes condition, we encouraged participants to believe that members of racial groups tend to share a common set of genes. In the non-shared-genes condition, we encouraged participants to believe that members of racial groups do not share

⁴ The N for this analysis is lower than the total because this item was unintentionally deleted from the India and Indonesia samples and because 6.8% of the participants in the other samples failed to complete this item (six of 100 in Australia; three of 181 in Chile; 16 of 239 in China; seven of 106 in Japan; 53 of 147 in Poland; 27 of 316 in South Africa, and two of 250 in the United States).

common genes. We expected that activating fused participants' beliefs regarding their shared genes would make them more inclined to endorse dying for their country.

Method

Eighty-three undergraduates (43 females, $M_{\text{age}} = 20.82$) at a large university in China participated. The shared-genes manipulation consisted of having participants read one of two articles adapted from Williams and Eberhardt (2008). The articles described new findings from the journal *Gene* regarding the ability of scientists to determine race from human tissue samples through genes implicated in skin color. In the shared-genes condition, the article elaborated on the headline, "Scientists Pinpoint Genetic Underpinnings of Race." In the non-shared-genes condition, the article elaborated on the headline, "Scientists Reveal that Race Has No Genetic Basis." Both articles expanded on the title by referring to evidence that allegedly buttressed each position.

After reading the article, participants completed the manipulation check, the Lay Theory of Race Scale (No et al., 2008). On 6-point scales ranging from *strongly disagree* to *strongly agree*, respondents completed eight items focusing on beliefs regarding the extent to which race biologically determines the influence of race on people's characteristics (e.g., "To a large extent, a person's race biologically determines his or her abilities and traits"; $\alpha = .67$). Participants also completed the identity fusion scale (Gómez, Brooks, et al., 2011; $\alpha = .71$) and Swann et al.'s (2009) measure of endorsement of extreme behavior for their country ($\alpha = .75$).⁵

To examine whether the manipulation was successful, we regressed condition, fusion, and their interaction on to the lay theory of race scale. This revealed that condition significantly predicted how strongly participants endorsed the genetic underpinnings of race, $b = 0.34$, $t(79) = 3.22$, $p < .01$; however, there was no effect of fusion, $b = 0.07$, $t(79) = 0.50$, $p = .62$, or the interaction of fusion with condition, $b = 0.03$, $t(79) = 0.19$, $p = .85$. Participants endorsed genetic beliefs about race more in the gene prime group ($M = 4.05$, $SD = 0.67$) than in the no-gene prime group ($M = 3.55$, $SD = 0.76$).

Results and Discussion

To determine whether the manipulation of shared genes interacted with identity fusion in predicting endorsement of extreme behavior for the group, we conducted a regression in which the predictors were fusion, the shared-gene manipulation, and their interaction, and the outcome measure was endorsement of extreme behavior for one's country (in all experiments in this report, fusion was centered, and dichotomous predictors were effect-coded). A significant interaction between the manipulation and fusion emerged, $b = 0.25$, $t(79) = 2.51$, semi-partial r (i.e., sr) = .24, $p < .05$ (see Table 2 for summary of interaction effects across studies). As can be seen in Figure 2 and confirmed by simple slope analyses, the relationship between fusion and self-sacrifice was stronger in the shared-gene group, $b = 0.68$, $t(79) = 4.57$, $sr = .45$, $p < .001$, than in the non-shared-gene group, $b = 0.19$, $t(79) = 1.44$, $sr = .14$, $p = .16$. The interaction qualified a main effect of fusion, $b = 0.43$, $t(79) = 4.39$, $p < .001$. There was a marginally significant effect of the manipulation, $b = 0.17$, $t(79) = 1.75$, $p = .08$, such that participants in the shared-gene condition were more

Table 2

Studies 2–6: Standardized bs , ts , dfs , and ps for Shared Characteristics Manipulation \times Fusion Interaction Predicting Extreme Pro-Group Behaviors

Study	Nation	b	t	df
2	China	0.25	2.51*	79
3	India	0.26	2.90**	91
4	United States	0.16	2.52*	146
5	Spain	0.28	4.01***	117
6	Spain	0.24	2.97**	103

Note. Nation column indicates the country from which each sample was drawn.

* $p < .05$. ** $p < .01$. *** $p < .001$.

inclined to endorse extreme behavior for the group. We also examined the simple effects of condition at high versus low levels of fusion. This revealed that the relationship between condition and self-sacrifice was significant for high scorers on fusion (+1 SD), $b = .42$, $t(79) = 3.01$, $sr = .30$, $p < .01$, but not for low scorers (−1 SD), $b = -0.08$, $t(79) = -0.56$, $sr = -.06$, $p = .58$.

Finally, when we included gender into a full factorial regression, it did not significantly predict endorsement of self-sacrifice, $b = -0.10$, $t(75) = -0.68$, $p = .402$. There was also no interaction of gender with fusion, $b = -0.19$, $t(75) = -1.45$, $p = .152$, or condition, $b = 0.03$, $t(75) = 0.23$, $p = .821$, and the triple interaction was not significant, $b = 0.15$, $t(75) = 1.11$, $p = .27$. The interaction of fusion and condition remained largely unchanged in this model, $b = 0.33$, $t(75) = 2.50$, $p = .015$.

The results of Study 2 therefore supported our hypothesis that priming shared biological characteristics strengthens the relationship between fusion and endorsement of extreme behavior. To determine whether this effect would generalize to a different participant population, we attempted to replicate it with a group of participants from another country that is ethnically relatively homogenous: India.

Study 3: Relation of Fusion and Priming Perception of Shared Genes to Endorsement of Extreme Behavior in India

Method

Participants and procedure. Ninety-five Indian nationals (29 females, $M_{\text{age}} = 29.22$) participated for a small fee through Mechanical Turk. All questionnaires were in English.

Participants first completed the identity fusion scale (Gómez, Brooks, et al., 2011; $\alpha = .88$) and then read one of the two articles designed to manipulate perception of shared genes used in Study 2.

⁵ To prevent contamination of responses to the measure of identity fusion, the measure of identity fusion should be completed prior to any experimental manipulation. Because the fusion measure was inadvertently completed after the manipulation in this experiment, we ran additional analyses to determine whether contamination occurred. Fortunately, there was no evidence that the manipulation influenced fusion scores, $t(81) = -0.45$, $p = .65$, $M = 3.82$, $SD = 0.76$ versus $M = 3.90$, $SD = 0.91$, shared versus un-shared genes condition, respectively. This analysis also fails to support the alternative hypothesis that state manipulations of shared essence influence fusion, and increased fusion in turn amplifies willingness to fight and die for the group.

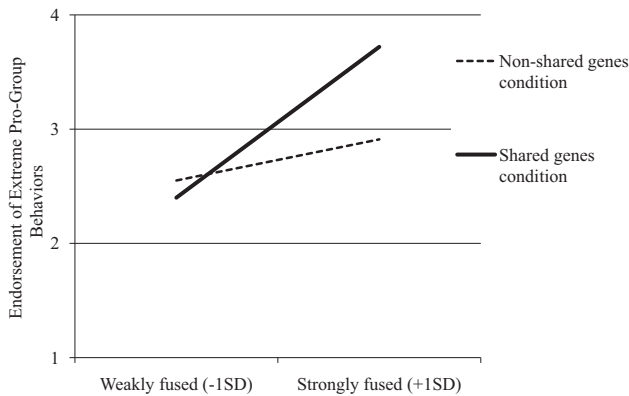


Figure 2. Study 2: Fusion and genetic race prime interactively predict endorsement of extreme pro-group behaviors in China. Values for weakly fused and strongly fused represent ± 1 SD from the mean ($M = 3.86$, $SD = 0.84$).

As manipulation checks, two yes/no questions were included. The first asked “Have scientists found genetic codes that underlay racial differences?” In a binary logistic regression including fusion, shared genes manipulation, and its interaction, there was only a main effect of condition, $B = -1.97$, $Wald = 36.99$, $p < .001$, $odds\ ratio\ (OR) = .14$, indicating that participants in the shared genes condition were more likely to respond affirmatively than participants in the non-shared genes condition. The fusion term in the model did not reach significance, $B = -0.39$, $Wald = -1.38$, $p = .17$, nor did the interaction term, $B = -0.42$, $Wald = 1.98$, $p = .16$, $OR = .80$. Results were similar for the second check question—“Could the researchers guess the racial background of a person based on genetic analysis 69% of the time?” In a binary logistic regression including fusion, the manipulation, and its interaction, there was only a main effect of condition, $B = -1.76$, $Wald = 36.10$, $p < .001$, $OR = .17$, indicating that participants in the shared genes condition were more likely to respond affirmatively than participants in the non-shared genes condition. The fusion term in the model was not significant, $B = 0.09$, $Wald = 0.12$, $p = .73$, as was the interaction term, $B = -0.41$, $Wald = 2.58$, $p = .11$, $OR = .67$. Finally, participants completed Swann et al.’s (2009) measure of endorsement of extreme behavior for their country ($\alpha = .76$).

Results and Discussion

To determine whether the manipulation of shared genes interacted with identity fusion in predicting endorsement of extreme behavior for the group, we conducted a regression in which the predictors were fusion, the shared-gene manipulation, and the interaction, and the outcome measure was endorsement of extreme behavior for one’s country. A significant interaction between the manipulation and fusion emerged, $b = 0.26$, $t(91) = 2.90$, $sr = .24$, $p < .01$. As can be seen in Figure 3 and confirmed by simple slope analyses, the relationship between fusion and endorsement of self-sacrifice was stronger in the shared-gene group, $b = 0.87$, $t(91) = 6.05$, $sr = .51$, $p < .001$, than in the non-shared-gene group, $b = 0.35$, $t(91) = 3.39$, $sr = .29$, $p < .01$. The interaction qualified a main effect of fusion, $b = 0.60$, $t(91) =$

6.83 , $sr = .58$, $p < .001$. There was no significant main effect of manipulation, $b = 0.08$, $t(91) = 0.89$, $sr = .07$, $p = .37$. As in Study 2, we also examined the simple effects of condition at different levels of fusion. This revealed that the relationship between condition and endorsement of self-sacrifice was positive and statistically significant for high scorers on fusion ($+1$ SD), $b = 0.33$, $t(91) = 2.78$, $sr = .23$, $p < .01$, but not for low scorers (-1 SD), $b = -0.18$, $t(91) = -1.46$, $sr = -.12$, $p = .15$.

Finally, when we included gender into a full factorial regression, it did not significantly predict endorsement of self-sacrifice, $b = 0.12$, $t(85) = 1.32$, $p = .19$ (note that two participants did not indicate gender and were excluded from the analysis). There was also no interaction of gender with fusion, $b = 0.04$, $t(85) = 0.44$, $p = .66$, with condition, $b = 0.05$, $t(85) = 0.60$, $p = .55$, nor was there a triple interaction, $b = 0.01$, $t(85) = 0.06$, $p = .95$. The interaction of fusion and condition remained largely unchanged when gender was entered into the model, $b = 0.23$, $t(85) = 2.40$, $p = .019$.

The results of Studies 2 and 3 highlight one factor that may determine when and why people will make extreme sacrifices for large social aggregates. That is, when people are reminded that members of their group share a genetic heritage (and are thus members of the same extended “family”), they are more willing to translate their perceptions of fusion into endorsement of fighting and dying for their group.

Genes, however, are but one of many important markers of familial groups. Indeed, in countries in which citizenship does not overlap highly with ethnicity (e.g., United States, Australia, most European countries), shared genes are surely not a common source of sense of communality. Instead, in such countries shared core values may be the dominant pathway to a sense of family. The perception of shared core values may thus embolden persons who are fused with the group to engage in acts of endorsement of self-sacrifice for the group.

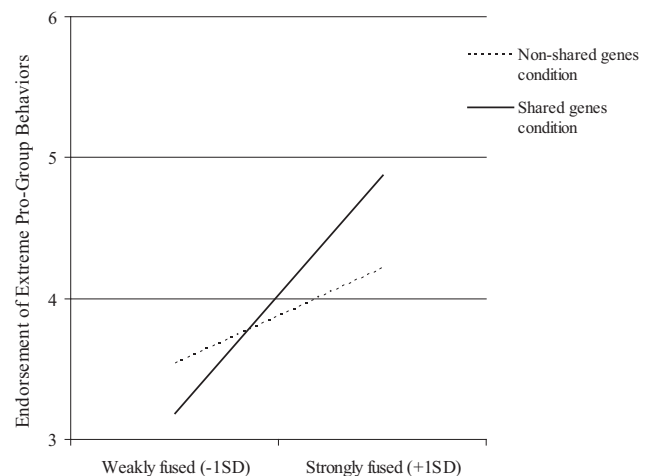


Figure 3. Study 3: Fusion and genetic race prime interactively predict endorsement of extreme pro-group behaviors in India. Values for weakly fused and strongly fused represent ± 1 SD from the mean ($M = 4.65$, $SD = 1.13$).

Study 4: Relation of Fusion and Priming Perception of Shared Core Values to Endorsement of Extreme Behavior

Whether shared core characteristics of a group are biological or socially acquired, encouraging fused people to focus on these characteristics should help transform a collection of disconnected members into a “family.” As such, priming shared core values should have the same impact as priming shared genes: It should encourage participants to translate their perceptions of fusion into endorsing extreme sacrifices for the group.

Method

Participants and procedure. One hundred and fifty Americans (90 females, $M_{\text{age}} = 34.6$) participated through MTurk for a small fee. After completing the verbal fusion scale (Gómez, Brooks, et al., 2011, $\alpha = .90$), participants read one of two “news summaries” of what was allegedly a “recent scientific study.” In the shared core values condition, the article elaborated on the headline, “Americans agree on core American values” and briefly described survey findings indicating that there was agreement that Americans valued qualities such as freedom, liberty, and democracy. In the non-shared core values condition, the article elaborated on the headline “Americans disagree on core American values.”

As a manipulation check, participants responded to the following item: “I think Americans have a lot in common with each other” on a scale ranging from 0 (*totally disagree*) to 6 (*totally agree*). A regression including fusion, shared core values manipulation, and its interaction, yielded a main effect of the manipulation, $b = 0.47$, $t(146) = 7.02$, $sr = .46$, $p < .001$. Participants in the shared core values condition perceived that ingroup members had more in common than participants in the non-shared values condition, $M = 4.34$, $SD = 1.26$ versus $M = 2.90$, $SD = 1.45$. There was also a significant main effect of fusion, $b = 0.37$, $t(146) = 5.51$, $sr = .36$, $p < .001$, indicating that strongly fused persons perceived that ingroup members had more in common than weakly fused persons. Although this fusion effect was unexpected, it fits with the notion that fused persons are especially inclined to see group members as sharing characteristics. More important for the interpretation of the predicted interaction on the endorsement of extreme pro-group behavior, the interaction term was not significant, $b = -0.02$, $t(146) = -0.32$, $sr = -.02$, $p = .75$. Finally, participants completed Swann et al.’s (2009) measure of endorsement of extreme behavior for their country ($\alpha = .82$).

Results and Discussion

To determine whether the manipulation of shared core values interacted with identity fusion in predicting endorsement of extreme behavior for the group, we conducted a regression in which the predictors were fusion, shared core values, and the interaction on endorsement of extreme behavior for the country. A significant interaction between the fusion and shared core values emerged, $b = 0.16$, $t(146) = 2.52$, $sr = .16$, $p = .01$. As can be seen in Figure 4 and confirmed by simple slope analyses, the relationship between fusion and endorsement of self-sacrifice was stronger in

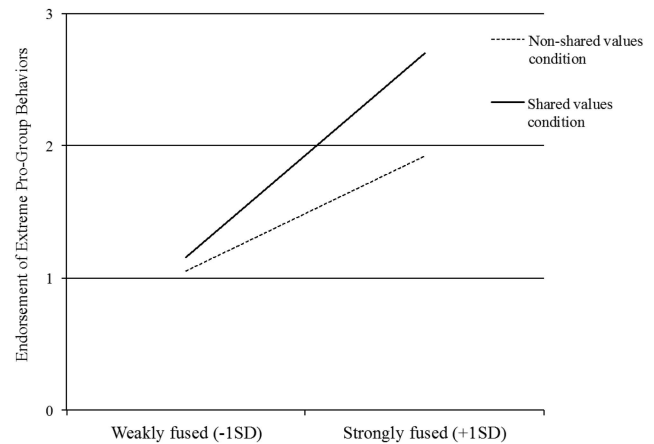


Figure 4. Study 4: Fusion and shared core values interactively predict endorsement of extreme pro-group behaviors in the United States. Values for weakly fused and strongly fused represent ± 1 SD from the mean ($M = 2.93$, $SD = 1.32$).

the shared core values group, $b = 0.76$, $t(146) = 8.08$, $sr = .52$, $p < .001$, than in the non-shared core values group, $b = 0.44$, $t(146) = 5.01$, $sr = .32$, $p < .001$. The interaction qualified a main effect of fusion, $b = 0.60$, $t(146) = 9.34$, $sr = .59$, $p < .001$, and a main effect of condition, $b = 0.20$, $t(146) = 3.08$, $sr = .19$, $p < .01$. We also examined the simple effects of condition at different levels of fusion. This revealed that the relationship between condition and endorsement of self-sacrifice was positive and statistically significant for high scorers on fusion (+1 SD), $b = 0.36$, $t(146) = 3.96$, $sr = .25$, $p < .001$, but not for low scorers (-1 SD), $b = 0.04$, $t(146) = 0.39$, $sr = .03$, $p = .70$. Together, these findings suggest that encouraging group members to reflect on core values that group members share may motivate them to endorse making extreme sacrifices for the group, much as encouraging them to reflect on shared genes did in Studies 2 and 3.

Finally, when we added gender to the full factorial regression, it significantly predicted endorsement of self-sacrifice, $b = 0.14$, $t(142) = 2.24$, $p = .03$, such that men endorsed extreme behaviors more than women, $M = 1.90$, $SD = 1.02$ versus $M = 1.59$, $SD = 1.02$. There was no interaction of gender with fusion, $b = 0.08$, $t(142) = 1.22$, $p = .22$, of gender with shared core values, $b = -0.001$, $t(142) = -0.02$, $p = .98$, nor was the triple interaction significant, $b = -0.001$, $t(142) = -0.02$, $p = .99$. The interaction of fusion and condition remained largely unchanged when gender was added to the model, $b = 0.19$, $t(142) = 2.75$, $p = .007$.

Theoretically, priming shared core characteristics—whether these characteristics are genes or values—should amplify fused persons’ perceptions of familial ties to other members of the group. In turn, fused persons should increase endorsement of extreme pro-group behavior. To strengthen our argument that perception of familial ties mediated the interactive impact of fusion and shared values on endorsement of self-sacrifice, we developed a measure of perception of familial ties and conducted a direct test of this moderated mediation relationship in Study 5.

Study 5: Relation of Fusion and Priming Perception of Shared Core Values to Perception of Familial Ties and Endorsement of Extreme Behavior

For people who are highly fused with their group, focusing on the shared core values of the group members should enhance the perceived intimacy and oneness of the group. Such sentiments, in turn, should foster the perception of familial ties: other group members become valued as if they were members of one's own family. These perceptions then further enhance willingness to fight and die for the group. We tested this reasoning in Study 5.

Method

Preliminary investigation: Discriminant validity of relational ties index. Prior to testing our primary hypotheses, we conducted a preliminary study to ascertain the discriminant validity of our newly developed measure of familial ties. On 7-point scales ranging from 0 (*disagree strongly*) to 6 (*agree strongly*), participants indicated agreement with three items: "Members of my country are like my family to me"; "If someone in my country is hurt or in danger, it is like a family member is hurt or in danger"; and "I see other members of my country as brothers and sisters" ($\alpha = .91$).

Spanish undergraduates ($N = 381$; 60.9% women; $M_{\text{age}} = 34.06$, $SD = 10.96$) completed the familial ties scale ($\alpha = .88$), verbal fusion scale ($\alpha = .82$), and the endorsement of extreme behaviors measure ($\alpha = .81$). Confirmatory factor analyses (CFAs) of the familial ties and fusion items revealed that the two-factor solution was superior to the single-factor solution. A second CFA of the familial ties and endorsement of extreme behavior items likewise revealed that the two-factor solution was superior to the single-factor solution. Detail regarding these analyses can be found in a footnote⁶ and in Figures 5 and 6.

Participants and procedure. One hundred and twenty-one Spanish undergraduates (96 females, $M_{\text{age}} = 33.21$, $SD = 10.30$) volunteered for course credit. Participants completed the identity fusion scale (Gómez, Brooks, et al., 2011; $\alpha = .91$) and then underwent a procedure similar to that used in Study 4 but with three changes. First, the procedure was adapted for Spanish participants (e.g., the articles were titled "Spaniards agree [disagree] on core Spanish values," and the core values were adjusted to qualities associated with honesty).

Second, as a check on the manipulation, after reading the article, participants responded to the item, "I think Spaniards have a lot in common with each other," on a scale ranging from 0 (*totally disagree*) to 6 (*totally agree*). A regression including fusion, shared core values manipulation, and the interaction, yielded a main effect of the manipulation, $b = 0.84$, $t(117) = 16.37$, $sr = .83$, $p < .001$. Participants in the shared core values condition perceived that ingroup members have more things in common than participants in the non-shared values condition, $M = 3.59$, $SD = 0.61$ versus $M = 1.69$, $SD = 0.60$. No other effects were significant, $ps > .65$.

Third, we included measures of the proposed mediator: perception of familial ties ($\alpha = .91$). After completing the familial ties measure, participants filled out Swann et al.'s (2009) measure of endorsement of extreme behavior for their country ($\alpha = .88$).

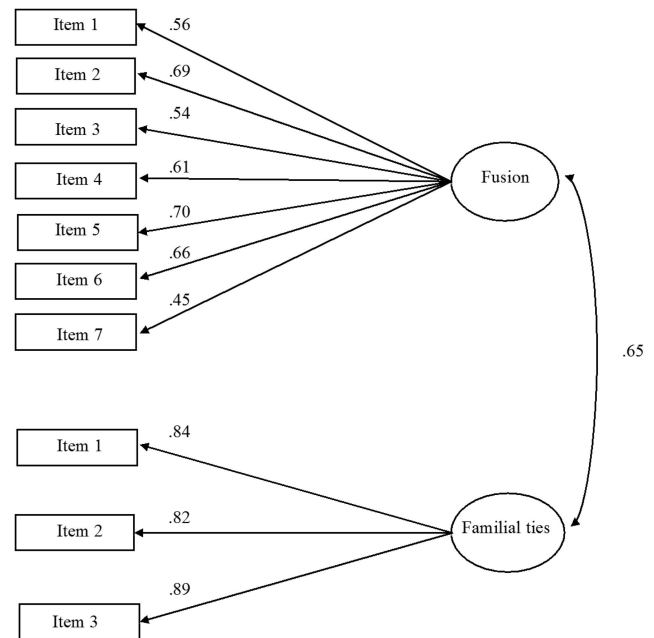


Figure 5. Confirmatory factor analysis of fusion and familial ties.

Results and Discussion

We conducted regressions on endorsement of extreme behavior for the group and on perception of familial ties. In each regression, the predictors were again fusion, the shared core values manipulation, and the two-way interaction.

Endorsement of extreme pro-group behaviors. The regression yielded a fusion \times shared core values interaction, $b = 0.28$, $t(117) = 4.01$, $sr = .24$, $p < .001$. As can be seen in Figure 7 and confirmed by simple slope analysis, the relationship between fusion and endorsement of extreme behavior for the group was stronger in the shared core values condition, $b = 0.80$, $t(117) = 11.16$, $sr = .68$, $p < .001$, than in the non-shared core values condition, $b = 0.25$, $t(117) = 2.11$, $sr = .13$, $p = .037$. Simple effects analyses revealed that strongly fused participants were uniquely sensitive to the manipulation of shared core values. That is, the manipulation of shared core values had a significant effect on strongly fused persons, $b = 0.50$, $t(117) = 5.20$, $sr = .32$, $p < .001$.

⁶ The CFAs used Analysis of Moment Structures (Arbuckle, 1997). We permitted items to load on only the components they were expected to load on, and no item errors were permitted to correlate. The first CFA considering familial ties and identity fusion revealed fit indices for the two-factor model exceeding the .930 benchmark (comparative fit index [CFI] = .979, normed fit index [NFI] = .962, goodness-of-fit index [GFI] = .968), and the residual index falling below the .08 benchmark (root-mean-square error of approximation [RMSEA] = .055). The two-factor model produced a better fit than a single-factor model (CFI = .878, NFI = .863, GFI = .862), and the residual index for the single-factor fell above the .08 benchmark (RMSEA = .130).

The second CFA considering familial ties and endorsement of extreme behaviors revealed fit indices exceeding the .930 benchmark (CFI = .983, NFI = .965, GFI = .969), and the residual index falling below the .08 benchmark (RMSEA = .048). The two-factor model produced a better fit than a single-factor model (CFI = .786, NFI = .773, GFI = .785, RMSEA = .170).

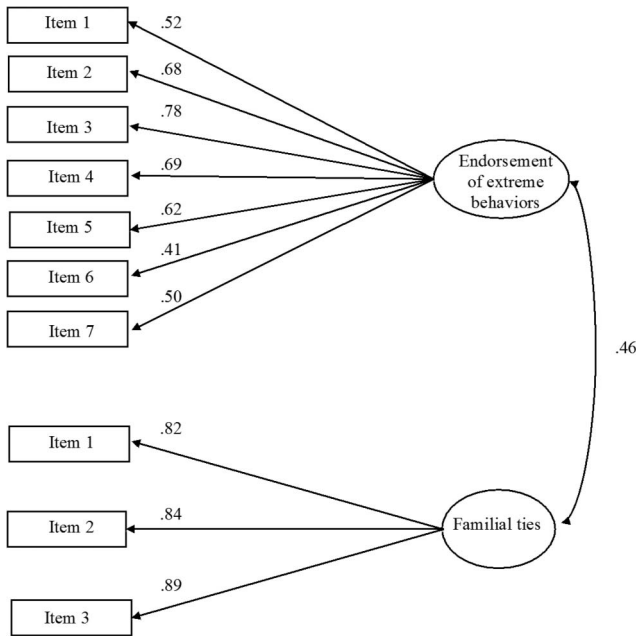


Figure 6. Confirmatory factor analysis of endorsements of extreme pro-group sacrifice and familial ties.

.001, but not on weakly fused persons, $p = .64$. The interaction qualified the main effects of fusion, $b = 0.53$, $t(117) = 7.61$, $sr = .46$, $p < .001$, and shared core values, $b = 0.23$, $t(117) = 3.70$, $sr = .23$, $p < .001$.

Perception of familial ties. The regression yielded a fusion \times shared core values interaction, $b = 0.15$, $t(117) = 2.44$, $sr = .13$, $p = .016$. Simple slope analyses showed that the relationship between fusion and perception of familial ties was stronger in the shared core values condition, $b = 0.85$, $t(117) = 13.17$, $sr = .72$, $p < .001$ (i.e., predicted familial ties value = .31 for persons $-1 SD$ on fusion, and predicted familial ties value = 2.48 for per-

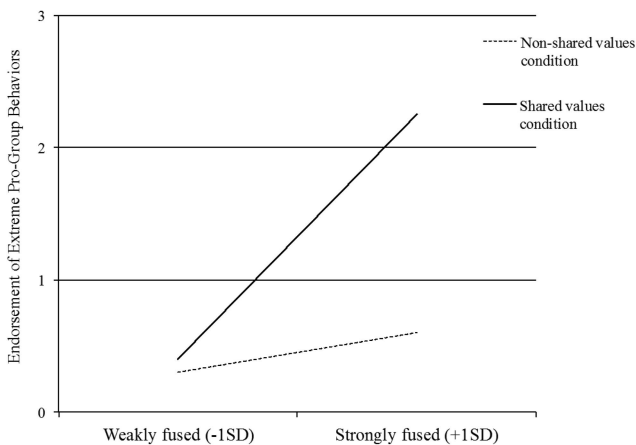


Figure 7. Study 5: Fusion and shared core values interactively predict endorsement of extreme pro-group behaviors in Spain. Values for weakly fused and strongly fused represent $\pm 1 SD$ from the mean ($M = 1.64$, $SD = 1.30$).

sons $+1 SD$ on fusion), than in the non-shared core values condition, $b = 0.55$, $t(117) = 5.17$, $sr = .28$, $p < .001$ (i.e., predicted familial ties value = .30 for persons $-1 SD$ on fusion, and predicted familial ties value = 1.70 for persons $+1 SD$ on fusion). Simple effects analyses revealed that strongly fused participants were uniquely sensitive to the manipulation of shared core values. That is, the manipulation of shared core values had a significant effect on strongly fused persons, $b = 0.30$, $t(117) = 3.81$, $sr = .19$, $p = .001$, but not on weakly fused persons, $p = .95$. The interaction qualified main effects of fusion, $b = 0.70$, $t(117) = 11.27$, $sr = .61$, $p < .001$, and the shared core values manipulation, $b = 0.15$, $t(117) = 2.74$, $sr = .15$, $p = .007$.

To test whether shared core values moderate the mediational impact of familial ties on the effect of fusion on endorsement of extreme actions for Spain, we conducted a moderated mediation analysis. In particular, following Hayes (2013), we used the PROCESS macro for SPSS to test whether shared core values moderated both the effect of identity fusion on the mediator (i.e., familial ties) and the direct effect of identity fusion on the dependent variable (i.e., endorsement of extreme behaviors for Spain) when controlling for the mediator (see Hayes, 2013, Model 8). As can be seen in Table 3, shared core values moderated the effect of identity fusion on familial ties as well as the direct effect of identity fusion on endorsement of extreme actions for Spain (controlling for familial ties). Providing evidence for moderated mediation, the index of moderated mediation was significant ($b = 0.090$, $SE = 0.04$, 95% CI [.020, .176]), and the indirect effect of fusion on endorsement of extreme actions for Spain through familial ties was higher in the shared core values condition ($b = 0.223$, $SE = 0.06$, 95% CI [.112, .363]) than in the non-shared core values condition ($b = 0.133$, $SE = 0.05$, 95% CI [.059, .246]).

Finally, to test for gender effects, we added gender to the full factorial regression of endorsement of extreme behavior and familial ties. There were no main or interactive effects of gender, all $ts < 0.61$, $ps > .54$.

Consistent with the results of Studies 2–4, Study 5 supports the notion that priming beliefs regarding shared core characteristics of group members increases the tendency for fused persons to endorse fighting and dying for a large, collective group. Furthermore,

Table 3
Outcome of the PROCESS Macro (Model 8) Used to Test Whether the Indirect Effect of Fusion on Endorsement of Extreme Actions for Spain Through Familial Ties Is Moderated by Shared Core Values, Study 5

Variable	B	SE	p
Mediator variable model			
Constant	1.22	0.072	.000
Identity fusion (independent variable)	0.72	0.057	.000
Shared core values (moderator)	0.22	0.075	.004
Identity Fusion \times Shared Core Values	0.17	0.062	.007
Dependent variable model			
Constant	0.37	0.096	.000
Identity fusion (independent variable)	0.22	0.062	.000
Shared core values (moderator)	0.15	0.055	.007
Identity Fusion \times Shared Core Values	0.14	0.046	.002
Familial ties (mediator)	0.26	0.066	.000

the results indicate that the tendency for familial ties to mediate the impact of fusion on endorsement of extreme sacrifice for the group was stronger in the shared-values condition compared to the non-shared values condition.

With such evidence of the moderators and mediators of the impact of fusion on endorsement of extreme pro-group behavior in hand, we probed further into the precise mechanisms underlying our findings. First, in Studies 2–5 it seems likely that participants believed that the characteristics that group members shared were positive (i.e., good genes or positive core values). This leaves open the possibility that our effects may be limited to instances in which *positive* shared core characteristics are activated. That is, it might be the case that priming shared core characteristics enhanced endorsement of extreme behavior among fused persons not because the characteristics were shared but because they were positive. To test this rival explanation, we examined whether the effects of shared characteristics would generalize to negative as well as positive core values. In Study 6, we assessed the impact of both types of shared core values.

A second ambiguity associated with the results of Study 5 pertains to the evidence that the perception of familial ties mediated the interactive effects of fusion and core values on endorsement of extreme behavior. Although our findings revealed evidence of *statistical* mediation, the fact that our measures were collected in the same session weakens the case for true mediation. To strengthen the evidentiary basis for our argument, in Study 6 we measured fusion 6 months prior to the experiment.

Study 6: Relation of Fusion, Priming Perception of Negative Shared Core Values on Perception of Familial Ties, and Endorsement of Extreme Behavior

The primary goal of this study was to determine if priming shared core values would amplify endorsement of extreme behavior among fused persons even if they were negative. In addition, we attempted to replicate evidence of the mediational role of perception of familial ties provided in Study 5.

Method

Participants and procedure. The study was conducted in two waves with Spanish undergraduates who participated for course credit. In the first wave, 133 students completed the verbal fusion scale (Gómez, Brooks, et al., 2011; $\alpha = .81$). Six months later, 111 participants completed the second wave (63 females, $M_{\text{age}} = 37.05$, $SD = 11.11$) in which they were randomly assigned to the two manipulations (core values and valence of value) and then completed the outcome measures. Attrition was unrelated to fusion scores, $p > .78$.

The procedure followed the one used in Study 5 except for one key change. Specifically, in addition to manipulating perceptions of the degree to which Spaniards shared core values, we also manipulated the valence of the values (positive vs. negative). Participants learned that a study had been conducted with a representative sample of Spaniards regarding the core values shared by Spaniards. The experimenter then randomly assigned them to one level of shared core values (shared core values vs. non-shared core values) and one level of valence (negative vs. positive). That is, participants in the *shared values* conditions learned that there

was high agreement (75%) regarding the characteristic or core value that most Spaniards shared, while those in the *non-shared values* conditions learned that there was low agreement (25%). Similarly, the valence manipulation consisted of informing participants that the core values were either negative or positive (*negative vs. positive core value* conditions, respectively). In all conditions, the content of the values was not divulged.

The instructions explained that one of the goals of the research was to determine how well participants could guess the core values under investigation. After reading the article, participants guessed what the core value was and wrote it down to reinforce the manipulation. Representative examples of negative core values included conformist, lazy, and corrupt; positive core values included sociable, cheerful, and friendly.

As manipulation checks, participants indicated the percentage of Spaniards they thought shared the core value as well as the positivity of the core value on scales ranging from -3 (*strongly negative*) to 3 (*strongly positive*). A pair of regressions on these manipulation checks was conducted. In each regression, the predictors were fusion, shared core values, valence, all two-way interactions, and the triple interaction.

The manipulation checks were analyzed with two regressions. The first regression showed that participants in the shared value condition indicated that a higher percentage of Spaniards shared the core value than in the non-shared value condition, $b = 0.42$, $t(103) = 4.76$, $sr = .41$, $p < .001$, $M = 70.1$, $SD = 14.6$ versus $M = 51.7$, $SD = 25.0$, respectively. There were no significant effects of fusion, valence, or the interactions in this regression, $ps > .10$. A second regression indicated that participants in the negative core value condition rated the value more negatively than participants in the positive core value condition, $b = 0.86$, $t(103) = 16.81$, $sr = .83$, $p < .001$, $M = -2.36$, $SD = 0.70$ versus $M = 1.86$, $SD = 1.65$, respectively. This regression revealed no significant effects of fusion, shared values, or significant interactions, $ts < 1.61$, $ps > .11$. In sum, both manipulations were successful.

Following the manipulation checks, participants completed the measures of perception of familial ties ($\alpha = .88$) and the measure of endorsement of extreme behavior for the group (Swann et al., 2009; $\alpha = .77$).

Results and Discussion

We conducted a series of regressions on the measures of perception of familial ties and endorsement of extreme behavior for the group. The predictors were fusion, shared core values, and valence, all two-way interactions, and the triple interaction.

Endorsement of extreme pro-group behavior. The regression yielded a fusion \times shared core values interaction, $b = 0.24$, $t(103) = 2.97$, $sr = .24$, $p = .004$. Simple slope analyses showed that the relationship between fusion and endorsement of self-sacrifice was stronger in the shared core values group, $b = 0.75$, $t(103) = 6.28$, $sr = .50$, $p < .001$, than in the non-shared core values group, $b = 0.30$, $t(103) = 2.84$, $sr = .22$, $p = .005$. Simple effects analyses revealed that strongly fused participants were uniquely sensitive to the manipulation of shared core values. That is, the manipulation of shared core values had a significant effect on strongly fused persons, $b = 0.48$, $t(103) = 4.05$, $sr = .32$, $p < .001$, but not on weakly fused persons, $p = .69$. There was also an

effect of fusion, $b = 0.54$, $t(103) = 6.56$, $sr = .52$, $p < .001$, such that strongly fused participants were more inclined to endorse extreme behaviors for the group than low fused participants. Finally, a significant shared core values effect emerged, $b = 0.25$, $t(103) = 3.07$, $sr = .24$, $p = .003$. Participants in the shared core values condition endorsed extreme behavior for the group more than participants in the non-shared core values condition, $M = 0.98$, $SD = 0.93$ versus $M = 0.69$, $SD = 0.66$, respectively. No other effects were significant, $ps > .30$. Note that the fact that valence had no effect indicates that moderation by shared characteristics extends to characteristics that are negative as well as positive.

Perception of familial ties. The regression yielded a fusion \times shared core values interaction, $b = 0.22$, $t(103) = 2.97$, $sr = .21$, $p = .004$. Simple slope analysis indicated that the relationship between fusion and perception of familial ties was stronger in the shared core values condition, $b = 0.85$, $t(103) = 7.83$, $sr = .57$, $p < .001$ (i.e., predicted familial ties value = .80 for persons -1 SD on fusion, and predicted familial ties value = 3.00 for persons $+1$ SD on fusion), than in the non-shared core values group, $b = 0.36$, $t(103) = 3.66$, $sr = .26$, $p < .001$ (i.e., predicted familial ties value = 0.67 for persons -1 SD on fusion, and predicted familial ties value = 1.60 for persons $+1$ SD on fusion).

Simple effects analyses also revealed that strongly fused participants were uniquely sensitive to the manipulation of shared core values. That is, the manipulation of shared core values had a significant effect on strongly fused persons, $b = 0.57$, $t(103) = 5.18$, $sr = .37$, $p < .001$, but not on weakly fused persons, $p = .45$. There was also an effect of fusion, $b = 0.58$, $t(103) = 7.84$, $sr = .56$, $p < .001$, such that strongly fused participants were particularly inclined to endorse perception of familial ties. Finally, an effect of shared core values also emerged, $b = 0.35$, $t(103) = 4.74$, $sr = .34$, $p < .001$, with participants in the shared core values condition perceiving more familial ties than participants in the non-shared core values condition, $M = 1.76$, $SD = 1.46$ versus $M = 1.19$, $SD = 1.05$, respectively. No other effects were significant, $ps > .12$.

To test whether the indirect effect of fusion on endorsement of extreme actions for Spain through familial ties is moderated by shared core values, we conducted a similar moderated mediation analyses as reported in Study 5. Results of this model are depicted in Table 4. As predicted, shared core values moderated the effect of identity fusion on familial ties as well as the direct effect of identity fusion on endorsement of extreme actions for Spain when controlling for familial ties. Indicating moderated mediation, the indirect effect of fusion on endorsement of extreme actions for Spain through familial ties was higher ($b = 0.224$, $SE = 0.07$, 95% CI [.079, .364]) in the shared core values condition than in the non-shared core values condition ($b = 0.095$, $SE = 0.04$, 95% CI [.024, .178]), and the index of moderated mediation was significant ($b = 0.131$, $SE = 0.05$, 95% CI [.037, .245]).

Finally, to test for gender effects, we added gender to the full factorial regression of endorsement of extreme behavior and familial ties. There were no main or interactive effects of gender, all $ts < .40$, $ps > .63$.

The results of Study 6 thus make two points. First, as in Study 5, the effect of identity fusion on extreme pro-group behavior was mediated via familial ties, and this mediated effect was more pronounced when shared core characteristics were primed. The

Table 4

Outcome of the PROCESS Macro (Model 8) Used to Test Whether the Indirect Effect of Fusion on Endorsement of Extreme Actions for Spain Through Familial Ties Is Moderated by Shared Core Values, Study 6

Variable	B	SE	p
Mediator variable model			
Constant	1.49	0.093	.000
Identity fusion (independent variable)	0.76	0.094	.000
Shared core values (moderator)	0.38	0.094	.000
Identity Fusion \times Shared Core Values	0.32	0.094	.001
Dependent variable model			
Constant	0.54	0.113	.000
Identity fusion (independent variable)	0.26	0.078	.001
Shared core values (moderator)	0.12	0.066	.081
Identity Fusion \times Shared Core Values	0.11	0.065	.084
Familial ties (mediator)	0.21	0.064	.001

case for mediation was further bolstered by the fact that we used a prospective design in which fusion was measured 6 months prior to the experiment and the manipulation of shared core values occurred before the measures of perceived familial ties and endorsement of extreme behaviors. In addition, this design provides evidence that at least in some instances, fusion predicts perceived familial ties, a relationship that may theoretically unfold in the opposite direction in naturally occurring settings. Second, our effects generalized across negative as well as positive shared core values. This finding indicates that our effects were driven by the degree to which the core values were shared, rather than the degree to which they were positive.

General Discussion

What makes a group worth dying for? We began by examining the generality of the tendency for fused persons to endorse fighting and dying for a large group—their country. Participants from six continents endorsed fighting and dying for their country insofar as they were fused with it (Study 1). Further analysis revealed an intriguing twist, however. When asked which of several groups they were most inclined to die for, participants overwhelmingly favored relatively small groups, especially their immediate family. We accordingly shifted our attention to a new question: Why might fused persons be more inclined to die for smaller than larger groups?

We proposed that the special allure of small groups is that people feel strongly bonded to “family like” units whose members share characteristics with each other. This suggests that encouraging fused people to focus on the shared characteristics of group members should increase their willingness to endorse extreme behavior for large groups. Our findings supported this hypothesis. Specifically, activating the perception of shared core characteristics increased endorsement of fighting and dying for the group among fused persons. This pattern emerged whether the shared characteristics were biological (genes; Studies 2 and 3) or psychological (core values; Studies 4–6) and whether the participants were from China, India, America, or Spain.

Having demonstrated the power of the perception of shared core characteristics on endorsement of extreme pro-group actions among fused persons, we sought to identify the mechanism underlying this relationship. We hypothesized that priming shared characteristics among fused group members might foster the perception of oneness and intimacy within the group, which should, in turn, cause them to perceive familial ties to other group members. These perceptions might, in turn, promote endorsement of self-sacrifice for the group. The results of Study 5 provided evidence for the mediational role of perception of familial ties.

The results of Study 6 provided further and more convincing evidence for the mediational role of perceived familial ties due to the use of a prospective design. Furthermore, support for our hypotheses emerged whether the shared core values were positive or negative. The latter data ruled out the rival notion that shared core values appeal to fused persons because sharing positive genes or positive values enhances the positivity of the group and hence the willingness to make sacrifices for the group. Instead, it appears that, regardless of positivity, recognizing that other group members share common core characteristics fosters the perception of familial ties with other group members, and these perceptions persuade the person that the group is worth dying for.

Our effects also generalized across gender. That is, in no study did gender interact with our manipulations. The only significant gender effect was that males were more inclined to endorse extreme behaviors than women, but this effect emerged in Studies 1 and 4 only. These results are consistent with past work showing that men compared to women tend to be more physically aggressive (Eagly & Steffen, 1986) and are more likely to rescue others in emergency situations (Lyons, 2005), especially when physical prowess is required (Becker & Eagly, 2004).

Links to Social Identity, Identity Fusion, and Evolutionary Theories

The social identity perspective (e.g., Ellemers et al., 1997; Tajfel & Turner, 1979) provided novel insights into group processes by illuminating the importance of social identities and collective ties to the group, as well as the implications of these allegiances for inter-group dynamics. While highlighting these processes, social identity approaches downplayed the importance of the complementary processes, namely, personal identities, perception of familial ties, and the implications of these processes for intra-group dynamics. The latter processes are the focus of identity fusion theory. From this vantage point, our formulation is part of the recent emphasis in the literature on illuminating aspects of group processes that were excluded from the original versions of social identity theory and self-categorization theory (see also Caporael, 2001; Postmes & Jetten, 2006; Prentice, 2001; Roccas & Brewer, 2002; Smith, Coats, & Murphy, 2001).

Our findings complement past investigations of identity fusion in several ways. Based on the assumption that identity fusion serves to poise people for action on behalf of the group, past research identified several variables that induce people to actually enact pro-group actions. For example, in several studies, increasing the salience of either the *social* or *personal* identities of strongly fused participants increased endorsement of pro-group action (Gómez, Brooks, et al., 2011; Swann et al., 2009). Moreover, increasing physiological arousal through exercise increased

personal agency, which in turn promoted endorsement of dying for the group and other pro-group actions among highly fused persons (Swann, Gómez, Huici, et al., 2010). Furthermore, emotional engagement with the group mediates the effects of identity fusion on endorsement of sacrificing oneself for the group (Swann et al., in press).

Here, we shifted focus onto *characteristics of the group* that encourage highly fused persons to engage in pro-group behavior. For leads, we turned first to the psychological essentialism literature. This work grew up around the proposition that people understand some objects and categories as having relatively deep essences that define those objects and categories (Medin & Ortony, 1989). Combining this with research on group entitativity and group homogeneity, we reasoned that for group members, the perception of shared essential qualities with others would encourage the belief that the group was more intimate and meaningful, much like a family unit (see also Brewer, 1993; Rubin & Badae, 2012; Simon, 1992). So convinced, fused group members would develop particularly strong perceptions of familial ties to the group and these ties would, in turn, amplify willingness to make extreme sacrifices for the group.

Support for this analysis came from evidence that priming the perception that members of the group shared core characteristics increased the tendency for highly fused individuals to endorse pro-group action. Furthermore, two studies (Studies 5 and 6) suggested that this effect was mediated by the perception of familial ties to other group members. Apparently, for fused persons, recognizing that group members share numerous core characteristics with one another activates the projection of familial ties to fellow group members. The experience of such ties convinces fused group members that the group is worth dying for.

One intriguing issue concerns *how* perceptions of familial ties mediate the link between fusion and endorsement of extreme sacrifice. One possibility is that familial ties carry with them a sense of duty or obligation that compels fused persons to rush to the assistance of “family members” when they are imperiled. A related possibility is that perceptions of familial ties intensify the perceptions of oneness that fused people enjoy with other group members, and these feelings encourage them to believe that they will live on through their fellow group members. This latter point and the contribution of perceptions of familial ties to the willingness of fused persons to endorse self-sacrifice for the group are generally consistent with an evolutionary perspective on the psychology of self-sacrifice. Evolutionary psychologists have argued that a kin-detection system regulates the decision to sacrifice the self (Alvergne, Faurie, & Raymond, 2009; Lieberman, Tooby, & Cosmides, 2007). This framework is clearly compatible with the tendency for participants in Study 1 to express more willingness to sacrifice themselves for members of small groups of immediate family members (local fusion) than larger aggregates (extended fusion). It is also consistent with our evidence that priming the shared genetic qualities of the group in Studies 2 and 3 amplified the willingness of fused persons to die for the group. Furthermore, the results of Studies 4–6 suggest that for fused persons, the perception of shared core values psychologically transforms a large impersonal group into a relatively small, family like group. This transformation, in turn, triggers the perception of familial ties, which in turn heightens endorsement of extreme behavior for the group.

Conclusions

Whether they are soldiers, terrorists, or gang members, those who engage in mortal combat for their group typically attribute the sacrifices they make to devotion to a “brotherhood” or “sisterhood” (Atran, 2010; Junger, 2010). Such explanations are eminently plausible when people are quite familiar with the persons for whom they make sacrifices. Nevertheless, the “brotherhood” idea becomes strained when group members do not know all members of the group for whom they sacrifice themselves. Our findings point to a psychological pathway through which large aggregates of strangers are transformed into “family members” for whom some individuals will make extreme sacrifices. The key, it appears, is the perception that the members of the group share certain core characteristics that make them akin to family. More specifically, for fused persons, the perception of shared core characteristics fosters perceptions of familial ties to other group members, which, in turn, embolden endorsement of self-sacrifice. From this perspective, what appears to be “selfless” behavior on the part of fused persons is not selfless at all. Rather, when fused persons endorse sacrifice for other group members, they do so out of a sense of personal obligation to individuals whom they construe to be living extensions of themselves, their family.

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