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Increasing the predictive validity of identity fusion in leading to sacrifice by considering the extremity of the situation

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Abstract

Identity fusion is a strong feeling of connectedness that is capable of predicting willingness to self-sacrifice. The current research explores whether considering the extremity of the situation improves the ability of identity fusion to predict willingness to engage in life self-sacrifice. Participants first reported their level of identity fusion with a value (Study 1) or with their country (Study 2). Then, participants were randomly assigned to engage in an extreme versus non-extreme situation of sacrifice for the value (Study 1) or for their country (Study 2). These two variables (identity fusion and situation extremity) were used to predict willingness to self-sacrifice. Situation extremity moderated the effects of fusion on willingness to self-sacrifice, with greater consistency between fusion and sacrifice obtained for extreme versus non-extreme situations. In conclusion, taking into consideration the extremity of the situation can be useful to predict the association between identity fusion and willingness to self-sacrifice.

KEYWORDS
attitudes, extremity, identity fusion, self-sacrifice

1 | INTRODUCTION

When it comes to doing something for your group, one would intuitively think that as sacrifices get more extreme, fewer individuals would be willing to make them. Are there, however, some people who are actually more likely to self-sacrifice in extreme than non-extreme situations? The current research aims at addressing this question by varying the extremity of the situation that is considered and examining how it affects the willingness to self-sacrifice.

Identity fusion is a remarkably strong form of group alignment in which the boundary between personal and social identity becomes porous, producing a visceral feeling of oneness with a group (Gómez & Vázquez, 2015; Swann et al., 2009, 2012). The result of this fusion is a powerful feeling of connectedness to a particular group category in which both the personal and the social self are activated. In turn, this allows fused individuals to experience a high sense of personal agency (i.e., the capacity to initiate and control intentional behavior) as well as derive strength from group membership. Thus, highly

fused individuals are likely to develop strong relational ties with the group (involving attachment to fellow group members) because those who belong to the group are valued by virtue of both their group membership and their distinctive personal qualities (Vázquez et al., 2017). One of the unique features of this relatively novel fusion construct is its ability to predict the endorsement of radical pro-group behaviors including ultimate sacrifices and extreme outcomes. In the present research, we examine the ability of identity fusion to guide willingness to self-sacrifice as a function of a new variable: the extremity of the situation that is made salient.

1.1 | Identity fusion predicts extreme pro-group behavior

Unlike other group-bonding theories (Tajfel & Turner, 1979; Turner et al., 1994), a growing collection of experimental evidence has demonstrated that identity fusion outperforms other measures of

connection with the group regarding the prediction of willingness to self-sacrifice for the group. For instance, identity fusion predicts extreme outcomes such as willingness to fight and die for the group (Gómez, Brooks, et al., 2011; Gómez, Morales, et al., 2011; Swann, Buhrmester, et al., 2014; Swann, Gómez, Huici, et al., 2010; Swann et al., 2009), willingness to self-sacrifice for in-group members on different intergroup and intragroup versions of the trolley dilemma (Gómez, Brooks, et al., 2011; Swann, Buhrmester, et al., 2014; Swann, Gómez, et al., 2014; Swann, Gómez, Dovidio, et al., 2010), willingness to serve as front-line combatants during the 2011 Libyan revolution (Whitehouse et al., 2014), and willingness to die for the beliefs associated with the values held by the group (Sheikh et al., 2016). Importantly, in a number of studies (Gómez, Brooks, et al., 2011; Gómez, Morales, et al., 2011; Swann, Gómez, Dovidio, et al., 2010; Swann, Gómez, Huici, et al., 2010; Swann et al., 2009) these effects of identity fusion were demonstrated above and beyond other group identity measures.

As an illustration of the link between identity fusion and self-sacrifice, Swann, Gómez, Dovidio, et al. (2010) presented participants with several different group-related versions of the trolley dilemma across four studies. They found that individuals scoring relatively high (vs. low) in identity fusion were more willing to jump from a bridge onto a trolley´s path and die to save five in-group members (i.e., Spaniards) from dying (Study 1), to jump from a bridge onto a trolley´s path and die to save five extended in-group members (i.e., Europeans) from dying (Study 2) but not out-group members (i.e., Americans; Study 3). Another example of the association between identity fusion and willingness to self-sacrifice is that transsexuals with relatively high (vs. low) identity fusion with this group were more likely to undergo surgical change of their primary sexual characteristics two years after the assessment of their levels of identity fusion (Swann & Buhrmester, 2015). While the link between identity fusion and willingness to self-sacrifice is now well-established, the most recent research in this domain has moved to examine *when* this relationship is more likely to appear (Paredes et al., 2018). In the present research, we examine for the first time a moderating variable related to the extremity of the situation that is made salient.

1.2 | Moderators of the link between identity fusion and self-sacrifice

The ability of identity fusion to predict self-sacrificial pro-group outcomes (e.g., willingness to fight and die, self-sacrifice for one's group) is more prominent in some situations than others. Recent research has identified at least three moderators of the fusion–sacrifice relationship. First, Paredes et al. (2018) found that identity fusion was associated with willingness to fight and die to a greater extent in some conditions (e.g., when delegating to others was not an available option) but less so in other conditions (e.g., when delegation was possible). Other research has shown that the relationship between identity fusion and extreme pro-group behavior is stronger under high compared to low physical arousal

conditions (Swann, Gómez, Dovidio, et al., 2010; Swann, Gómez, Huici, et al., 2010). Third the relationship is stronger when participants express certainty in their responses to the fusion scale (Paredes et al.,2019).

Instead of focusing on these established moderators of the relationship between identity fusion and self-sacrifice, the current research was designed to offer a new moderator. Specifically, we examine the impact of considering extreme versus moderate situations on this relationship by manipulating the extremity of the situation participants are exposed to before making their self-sacrifice decision. In doing so, we take a person-by-situation approach in which some situations (i.e., extreme situations) are more likely to activate identity fusion as a valid guide to self-sacrifice than others (non-extreme situations).

We base the prediction that considering extreme versus moderate sacrifice will enhance the link between fusion and willingness to sacrifice on the extensive literature connecting identity fusion with extremity. Given the strong link between fusion and extremity, it may be that extreme situations activate identity fusion concerns, whereas they are not as salient or as relevant for non-extreme situations. That is, thinking about extreme behaviors activates how much people are fused to the group, whereas thinking about moderate situations does not activate any concerns about fusion because one does not need to be fused with a group to engage in moderate behaviors. Then, because thinking about extreme behaviors gets people to consider how much they are fused with the group, their fusion scores should matter more, and thus are expected to predict willingness to self-sacrifice better. The prediction is that extremity will activate thoughts about identify fusion as a whole (regardless of whether people score high or low) and that is why the scale is expected to predict better for everybody. In other words, consideration of extreme situations will increase the reliance on identity fusion as a valid source to guide one's self-sacrificial behavior (i.e., engage if fused, do not engage if not). Consideration of moderate situations does not activate fusion concerns and thus the fusion scale is less predictive in those situations.

Some readers may be wondering about our choice to test this hypothesis with identity fusion rather than with other measures of group bonding. As noted, identity fusion has shown its unique connection to extreme behaviors such as endorsement of fighting and dying for the group (Gómez, Brooks, et al., 2011), willingness to participate in extreme forms of protest on behalf of the group (Kunst et al., 2018), and desire to retaliate after a threat to the group (Fredman et al., 2017). We decided to test our hypothesis using a measure of group-bonding that is specifically tied to extremity; namely, identity fusion. On the other hand, Social Identity Theory (SIT) and Self-Categorization Theory (SCT) might predict that extremity could indeed fit with the group identity, to the extent that such extremity is perceived as a norm (SIT) or as prototypical (SCT; for examples of how SIT and SCT moderate the impact of norms, see Abrams et al., 1990; Jetten et al., 1996). That is, a similar prediction could be made for certain groups in which extremity is either the descriptive or the prescriptive norm. To the extent that the groups used in the current research do not have

INCREASING THE PREDICTIVE VALIDITY OF IDENTITY FUSION IN LEADING TO SACRIFICE BY
CONSIDERING THE EXTREMITY OF THE SITUATION

EASP–WILEY | 3

any form of extremity as a norm, it stands to reason that identity fusion's prediction differs from that of SIT or SCT. From these theoretical frameworks, one would expect extremity to moderate the association between identification measures and pro-group behavior only if extremity was induced as a (prescriptive or descriptive) norm. Therefore, we argue that extremity fits with the *type of bond* (i.e., fusion) participants hold with the group, rather than the *type of group* participants bond with. Thus, extremity was expected to activate the dimension of identity fusion to guide decisions but to be irrelevant for other forms of affiliation.

1.3 | Overview of the present research

The goal of the present research was to examine the extent to which identity fusion is more predictive of endorsement of extreme pro-group behavior as a function of the extremity of the situation to which participants are exposed. First, participants reported their level of identity fusion with a value (Study 1) or with a group (Study 2). Participants were also assigned to either an extreme or a non-extreme self-sacrifice situation associated with the object for which they were fused. Finally, participants reported their willingness to engage in self-sacrifice in simulated dilemmas. Study 1 examined to what extent situation extremity moderates the relationship between identity fusion and a self-report measure of self-sacrifice. Study 2 was designed as a conceptual replication of Study 1. Specifically, Study 2 included a different manipulation of situation extremity, a measurement of fusion with a group instead of a value, and an additional measure of reported self-sacrifice in simulated dilemmas. These variations were designed to generalize the implications of the current research across inductions, measures, domains, and materials.[1] As noted, given that extremity and fusion are uniquely associated, extremity is predicted to lead participants to rely on their levels of fusion in deciding about self-sacrifice. As a consequence, in the high extremity conditions, fusion scores should predict willingness to sacrifice better than in moderate extremity conditions.

2 | STUDY 1

There were two main goals in Study 1. First, this study examined for the first time whether identity fusion would predict relevant endorsement of self-sacrifice differently as a function of the extremity of the situation. The main dependent measure was reported self-sacrifice in a self-sacrifice dilemma. As explained, we expected that the correspondence between identity fusion and reported willingness to self-sacrifice would be higher when presented with extreme (vs. non-extreme) situations.

Second, this study explored the possibility of fusion with the value of merit-based justice (rather than fusion with a group). This value is

mostly based on the classic concept of equity (Deutsch, 1975) and the more recent one of meritocracy (Hing et al., 2011), which states that the amount of benefit or retribution that any given member of society receives should be a function of one's own contribution, and such contribution should be measured publicly, objectively and precisely. Despite the current research being the first to examine the possibility of fusion with a form of justice, previous research has already explored the possibility of feeling a strong bond with a set of values. Specifically, Fredman et al., (2017) showed that fusion with one's religion was a stronger predictor of retaliation against an out-group than fusion with the in-group (see also Atran & Ginges, 2015). Other research has also showed that individuals who are highly fused with a group are significantly more likely to engage in costly sacrifices if such fusion exists in combination with the defense of a value they hold sacred (Gómez et al., 2017; Sheikh et al., 2016; Vázquez et al., 2020). Outside of the identity fusion literature, other research has also explored varying levels of connection with different types of prescriptive norms and principles (Brauer & Chaurand, 2010; Reyna et al., 2006).

Study 1 aimed at testing whether people differ in the extent to which they are fused with this value, and the extent to which such fusion would predict sacrifice for the value, especially when the situation is extreme and therefore when people are especially likely to care about their levels of fusion. As noted, this prediction is based on the previously established association between identity fusion and extremity, and the possibility of extremity activating the concept of identity fusion.

2.1 | Method

2.1.1 | Participants and design

Eighy-one Spaniards (73.4% women, mean age = 38.87, *SD* = 11.16) participated in this study conducted online. All participants were recruited from a voluntary pool of psychology students at Universidad Nacional de Educación a Distancia (UNED). Participants were randomly assigned to a two (Level of presented self-sacrifice: High vs. Low) cell design with identity fusion with a value as a continuous additional predictor and responses to a moral dilemma as a dependent variable. A power analysis was conducted using G*Power (Faul et al., 2007). We could not look at prior work to obtain an estimated effect size for the predicted interaction between identity fusion and situation extremity. Therefore, we planned for a generic relatively medium effect (f^2 = 0.10; Cohen, 1988). Results indicated that the desired sample size (α = .05) with these parameters at 0.80 power was *N* = 81 participants.

2.1.2 | Procedure and materials

First, participants reported their level of identity fusion with the value of merit-based justice. Next, participants were assigned to either a high self-sacrifice or a low self-sacrifice version of a dilemma.

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[1]There were no data exclusions in our research.

The high sacrifice required potentially giving away one's life for the value (extreme situation) whereas the low sacrifice implied the possibility of getting sick to preserve this value (non-extreme situation). After reading the dilemma, participants were asked the extent to which they were willing to include their name on a list that would likely mean avoiding the consequences described in the induction (dying vs. getting sick). After responding to the dilemma, participants were debriefed, thanked, and dismissed.

2.2 | Independent variables

2.2.1 | Situation extremity

Participants were randomly assigned to the *extreme situation* condition or to the *non-extreme situation condition*. In the *extreme* (*vs. non-extreme*) condition, participants were asked to read and respond to a dilemma in which they could choose to *sacrifice their lives* (vs.*to get sick*) to defend a value. Specifically, the dilemma read as follows:

> A severe (vs. mild) influenza epidemic has broken out and it´s killing millions of people (vs. it´s leaving millions of people in bed). It is expected that millions more will catch the virus in the next few months. In order to mitigate the effects of this epidemic, a vaccine has been developed that will be administered to a select number of highly qualified individuals to ensure the proper functioning of society during the outbreak. The selection criteria were generated in a democratic and unanimous fashion, leading to a set of objective and numerically valid parameters that allowed us to compare candidates in the best possible way. You have gained access to the list of selected individuals who will receive the vaccine and, although you are not qualified enough in any of the key areas, you can include your name in the list and be protected against the virus.

In this scenario, agreeing to be on the selective list to get the vaccine is choosing *not to sacrifice* for the group or, conversely, agreeing to be off the list suggests a willingness to sacrifice for the group.

A pilot study was conducted to provide empirical support for the assumption that deciding whether to get sick or not was a less extreme self-sacrifice than deciding whether to potentially sacrifice one's life. In this study, 40 participants completed the fusion scale with merit-based jusctice and responded to the following question: "How extreme do you think this dilemma is?" (1 = *Not extreme at all*, to 7 = *Very extreme*). A multiple linear regression was conducted using the type of dilemma as the factor, identity fusion as a continuous measure, and the question as the dependent variable. Results indicated that participants perceived the possibility of sacrificing one's life as significantly more extreme than getting sick, $B = 0.65$,

$t(36) = 2.532$, $p = .016$, 95% CI: 0.131, 1.184. Results also indicated a main effect of identity fusion, meaning that highly fused participants generally perceived the dilemmas as more extreme than than participants low in identity fusion, $B = 0.56$, $t(36) = 2.986$, $p = .005$, 95% CI: 0.180, 0.944. Importantly, the interaction between identity fusion and level of sacrifice was not significant, $B = 0.18$, $t(36) = 0.958$, $p = .344$. Thus, these data support the notion that referring to the possibility of getting sick is a relatively less extreme situation than referring to the possibility of dying, and that identity fusion did not moderate those perceptions.

2.2.2 | Identity fusion

Identity fusion with "merit-based justice" ($\alpha = .89$) was measured using an adaptation of the 7-item verbal scale (Gómez, Brooks, et al., 2011), replacing the classic "my country" wording for "merit-based justice." Responses ranged from 1 (completely disagree) to 7 (completely agree), with higher numbers reflecting more fusion. Participants were asked to answer the fusion verbal-scale items considering the following definition of merit-based justice: "Merit based justice is a system in which positions are placed in a hierarchy base on a person's merit including one's talent, education, competence, and specific aptitude for a job." Previous research has shown that people can fuse with concepts other than their own groups, such as values and religious causes (Fredman et al., 2017), consumer brands (Hawkins, 2019), or with particular individuals (Vázquez et al., 2015). The identity fusion scale was not affected by the manipulation of situation extremity and did not vary as a function of gender or age ($ps > .29$).

2.3 | Dependent variable

After reading the dilemma,[2] participants were asked the following question: "Knowing that you were not qualified to be on the list, to what extent would you be willing to include your name on the list for the vaccine and avoid getting sick (vs. dying)?" Participants were shown either option depending on the version of the dilemma (high vs. low self-sacrifice) to which they were randomly assigned. Responses were made on a 7-point scale ranging from 1 "totally disagree" to 7 "totally agree." Responses were reverse-coded so higher scores meant greater willingness to self-sacrifice. These types of simulated moral dilemmas have been shown to activate the same areas of the brain that are activated when people face real-world, important decisions (Valdesolo & DeSteno, 2006; see also Bostyn et al., 2018), and also to correlate with decisions taken in more naturalistic settings (Bleske-Rechek et al., 2010).

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[2] All responses to the current dilemma were collected before the Covid-19 global pandemic of 2020.

INCREASING THE PREDICTIVE VALIDITY OF IDENTITY FUSION IN LEADING TO SACRIFICE BY
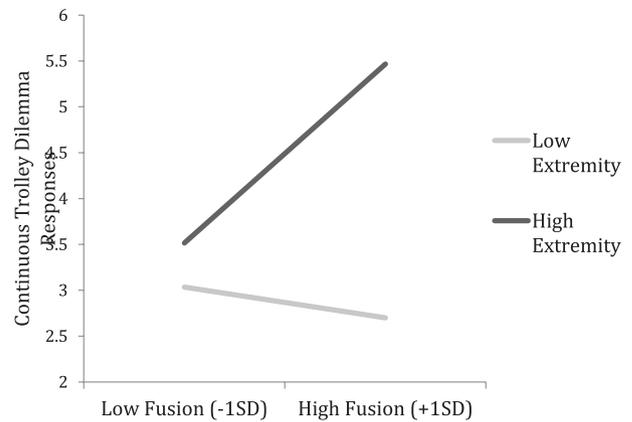CONSIDERING THE EXTREMITY OF THE SITUATION

EASP-WILEY | 5

2.4 | Results

The dependent variable was submitted to a multiple regression analysis. Identity fusion, situation extremity, and the interaction term (i.e., Identity Fusion × Situation Extremity) were entered as predictors. The critical two-way interaction was tested using the PROCESS add-on for SPSS (model 1; Hayes, 2013). The continuous variable (i.e., identity fusion) was mean-centered. The regression analysis revealed a main effect of identity fusion, $B = 0.393$, $t(77) = 2.179$, $p = .032$, 95% CI: 0.034, 0.753, indicating that people higher in identity fusion tended to be more willing to self-sacrifice. We also found a main effect of situation extremity, $B = 0.812$, $t(77) = 4.210$, $p < .001$, 95% CI: 0.428, 1.197, meaning that participants in the extreme self-sacrifice version of the dilemma were more willing to self-sacrifice than participants in the non-extreme self-sacrifice version of the dilemma. More importantly, the predicted interaction between identity fusion and situation extremity was significant, $B = 0.528$, $t(77) = 2.908$, $p = .004$, 95% CI: 0.166, 0.889. As illustrated in Figure 1, among those assigned to the extreme version of the dilemma, identity fusion was positively associated with willingness to sacrifice in the dilemma, $B = 0.902$, $t(77) = 3.819$, $p < .001$, 95% CI: 0.432, 1.372. For those who were assigned to the non-extreme version of the dilemma, there was no relationship between identity fusion and dilemma responses, $B = -0.154$, $t(77) = -0.558$, $p = .578$, 95% CI: −0.702, 0.395.[3]

Analyzed differently, this interaction showed that, among participants at higher levels of identity fusion (+1 SD), participants in the extreme version of the dilemma were more willing to self-sacrifice than participants in the non-extreme version of the dilemma, $B = 1.384$, $t(77) = 5.084$, $p < .001$, 95% CI: 0.842, 1.926. In contrast, for participants at lower levels of identity fusion (−1 SD), there was no significant relationship between situation extremity and willingness to self-sacrifice in the dilemma, $B = 0.241$, $t(77) = 0.867$, $p = .388$, 95% CI: −0.313, 0.796.[4]

2.5 | Discussion

The effect of identity fusion on self-sacrifice was moderated by the extremity of the situation. As hypothesized, we found that identity fusion predicted simulated sacrifice for the value to a greater extent when participants were randomly assigned to an extreme (vs. non-extreme) situation. Thus, for those participants who were assigned to the extreme situation, the ability of this individual-difference variable to predict endorsement of self-sacrifice was increased relative to those assigned to the non-extreme situation. This suggests that

FIGURE 1 Study 1. Continuous trolley dilemma responses as a function of identity fusion and situation extremity

researchers interested in studying the consequences of identity fusion can benefit by taking the extremity of the situation into account. Furthermore, these results also suggest that researchers and practicioners interested in studying extreme situations can benefit from assessing individual differences in identity fusion.

As noted, we propose that consideration of extreme sacrifices increases the relevance of fusion concerns. Thinking about extreme situations activates how much people are fused with the group and that is why fusion scores were expected to guide willingness to self-sacrifice precisely in those situations. Another pattern of results worth exploring is the lack of relationship between identity fusion and self-sacrifice for the non-extreme condition. A trivial explanation might be that with non-extreme sacrifice, everyone is willing to do them (i.e., a ceiling effect). However, we argue that in non-extreme situations people are not likely to check on their level of identity fusion. For that reason, fusion does not make a difference in non-extreme situations because it is not considered as a relevant dimension to guide decisions.

Study 1 also showed that participants can differ in their levels of fusion with merit-based justice, and that it succesfully predicts willingness to engage in pro-group sacrifices. Given the previous instance of moral dilemmas included in identity fusion research (Gómez, Brooks, et al., 2011; Swann, Buhrmester, et al., 2014; Swann, Gómez, et al., 2014; Swann, Gómez, Dovidio, et al., 2010; Swann, Gómez, Huici, et al., 2010), we followed a similar pattern by having the participant decide whether to make a personal sacrifice (i.e., potentially losing one's life) in order to uphold the value (i.e., respect a merit-based procedure in which he had not been chosen). To the extent that the scale of fusion with justice significantly predicted such sacrifice (i.e., the main effect reached statistical significance), it stands to reason that the dilemma is tapping into a similar construct as the one the fusion scale is measuring.

In sum, this first study provides some initial evidence that our person by situation approach deserves further attention. Besides the potential of these initial results, this particular study had some

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[3]Readers might wonder if the effect we found is mostly due to certain items of the fusion scale, such as "I would do more for merit-based justice than most people." All of the main findings of the study remain unchanged when this item is removed from the analysis.

[4]Given that the DV co-varied with the main IV in this study, we cannot tell whether the effect was due to the extremity of the situation described, or to the extremity of the question asked. This potential confound is addressed in Study 2.

limiations. One particular limitation of Study 1 is that the self-sacrifice measure (i.e., the DV) was induced simultaneously with the manipulation of extremity (i.e., the IV). Indeed, it was the manipulation of extremity. This may generate doubts about whether the different versions of the dilemma (extreme vs. non-extreme) or the different sacrifice questions (make a sacrifice to not get sick vs. not dying) produced the current pattern of responses. Another potential limitation is that we relied on a continuous measure of the self-sacrifice dilemma whereas most previous research has relied on dichotomous measures to assess responses to dilemmas. Therefore, it is also an open question whether the obtained effect will hold on a more traditional, dichotomous measure of self-sacrifice. A third question worth examining is whether the observed effects would hold for fusion with groups rather than values given that most research has explored identity fusion with a group. In fact, identity fusion was originally conceived as a form of bonding with a group. More recent applications have extended this bond to values, brands, individuals, and so on (Gómez et al., 2020). We decided to test the more novel implementations of identity fusion (i.e., fusion with a value) in the first study. After demonstrating our effect with that novel measure, we moved to a more traditional measure of identity fusion with a group in the second study to show the generalization of the effect. Study 2 sought to address these three open questions, along with other novelties.

3 | STUDY 2

The main goals of Study 2 were to replicate and extend the results of the first study with more reliable measures, with refined inductions, and also with new materials. Study 2 introduced four major changes in relation to Study 1. First, given that making identity fusion salient before facing the extreme (vs. non-extreme) situation may have affected participants´ reactions, we decided to switch the order of presentation to avoid this potential issue in Study 2. Therefore, the identity fusion measure was included in this study after (rather than before) the situation extremity manipulation. Second, identity fusion was measured with respect to a country instead of with a value. That is, we measured identity fusion with a group and self-sacrifice for this group as our dependent variable. Third, we operationalized the extremity induction differently using a new manipulation. Instead of being exposed to two versions of the same dilemma, participants were asked to generate thoughts about high versus low levels of self-sacrifice. Thus, we moved from a reactive reading paradigm to a more proactive thought-generation paradigm for this manipulation. Fourth, we measured responses to a different dilemma (trolley dilemma) using both a continuous and a dichotomous measure. Additionally, all the outcome measures were kept constant across conditions. Despite all of these changes, we still expected to obtain the same oucome as Study 1. That is, we expected identity fusion to be more predictive of simulated self-sacrifice when extreme (vs. non-extreme) situations were made salient.

3.1 | Method

3.1.1 | Participants and design

Two hundred and sixty-one Spaniards (72.4% women, mean age = 38.91, SD = 11.43) participated online and were recruited from a voluntary pool of psychology students at Universidad Nacional de Educación a Distancia (UNED). Participants were randomly assigned to a 2 (Situation extremity: High vs. Low) cell design with identity fusion as a continuous predictor and responses to a moral dilemma as a dependent variable. In order to calculate sample size, we conducted a power analysis using G*Power (Faul et al., 2007). In view of the interaction effect observed in Study 1 for the two-way interaction (r^2 = .099), we anticipated that the desired sample size for a two-tailed test (α = .05) of this interaction with 0.80 power was a total of N = 74. Given that we wanted to detect the effect even if it turned out to be smaller than estimated based on Study 1, we decided to collect as many participants as possible during the second academic quarter, resulting in a final sample of more than 100 participants per experimental condition.

3.1.2 | Procedure and materials

Participants were randomly assigned to either list reasons in favor of high levels of self-sacrifice for one's group (sacrificing one's life) or list reasons in favor of low levels of self-sacrifice for one's group (e.g., in favor of donating a non-vital organ). Next, participants reported their levels of identity fusion with their country (Gómez, Brooks, et al., 2011). After the induction of the situation and the measurement of identity fusion, participants were exposed to a trolley dilemma. In this study, participants were required to respond to the dilemma using both continuous and dichotomous responses. We expected both measures to replicate the pattern found in Study 1. Finally, participants were debriefed, thanked, and dismissed.

3.2 | Independent variables

3.2.1 | Situation extremity

Participants were randomly assigned either to the *extreme situation* salient condition or to the *non-extreme situation* salient condition. In the *extreme situation* condition, participants were asked to list three reasons that would justify sacrificing their life for a fellow Spaniard. In the *non-extreme situation* condition, participants were asked to list three reasons to justify donating a non-vital organ to a fellow Spaniard. Examples of reasons participants gave in the extreme condition were: "In a case of an emergency situation where giving my life could help save others, I would," "If I considered it to be necessary," and "If it was a kid I could save." Examples of reasons participants gave in the non-extreme condition were: "Because it´s a non-vital

INCREASING THE PREDICTIVE VALIDITY OF IDENTITY FUSION IN LEADING TO SACRIFICE BY
CONSIDERING THE EXTREMITY OF THE SITUATION

EASP–WILEY⏤ 7

organ, therefore I can donate it and keep on living," "Because I could save someone's life while maintaining mine," and "Because I am healthy and I can afford it."

A pilot study was conducted to provide empirical support for the assumption that donating a non-vital organ was a less extreme self-sacrifice than sacrificing one's life. In this study, after completing the identity fusion measure with their country, 20 participants responded, in counterbalanced order, to two questions: "How extreme do you think donating a non-vital organ is?" and "How extreme do you think sacrificing your life for someone else is?" (1 = *Not extreme at all*, to 7 = *Very extreme*). A within-subjects multiple regression was conducted using the two items as the within-subjects factor, and identity fusion as a between-subjects factor. Results indicated that participants perceived sacrificing one's life as significantly more extreme than donating a non-vital organ, $B = 1.78$, $t(38) = 3.21$, $p = .002$, 95% CI: 2.907, 0.662. Results also indicated a main effect of identity fusion, revealing that highly fused participants perceived the sacrifices as more extreme than participants low in identity fusion, $B = 0.46$, $t(36) = 2.106$, $p = .042$, 95% CI: 0.181, 0.921. Importantly, the effect of the type of dilemma on perceived extremity was not moderated by identity fusion, $B = 0.74$, $t(38) = 1.67$, $p = .103$.

3.2.2 | Identity fusion

We used the 7-item verbal fusion scale to measure identity fusion (Gómez, Brooks, et al., 2011). Responses were provided on scales ranging from 0 (*strongly disagree*) to 6 (*strongly agree*), α = .87. Items were averaged into a composite index. Higher scores reflected stronger fusion with the country. Examples of items include: "I am one with my country," and "I am strong because of my country." The identity fusion scale was submitted to a one-way ANOVA using situation extremity as the predictor to ensure that it was independent of the initial induction. Identity fusion did not change as a function of situation extremity $p = .664$.

3.3 | Dependent variables

3.3.1 | Continuous trolley dilemma responses

Participants were introduced to the "summoning the death train scenario" (Swann, Buhrmester, et al., 2014; Swann, Gómez, et al., 2014). Participants learned that a runaway train was about to crush and kill five citizens of his/her country unless they flipped a switch that diverted the train to their own railway track, killing them but leaving the five in-group members unharmed. On a 7-point scale ranging from 1 "totally disagree" to 7 "totally agree," participants were asked the following two questions: "to what extent would you be willing to flip the switch and sacrifice yourself saving five Spaniards" and "to what extent would you be willing to not flip the switch and save yourself letting five Spaniards die." The second item was reverse-coded

so higher scores meant greater willingness to self-sacrifice. Both items were highly intercorrelated ($r(256) = .67$, $p < .001$), so an index of the two was created ($M = 3.10$, $SD = 1.60$).

3.3.2 | Dichotomous trolley dilemma responses

After they responded to the two continuous measures, participants chose between (a) not flipping the switch letting the trolley crush the five Spaniards or (b) sparing the five by flipping the switch and sacrificing their own lives (23.4% chose this option). This dichotomous forced choice is the most commonly used response to trolley dilemmas in identity fusion research (Swann et al., 2010). As noted, we did not expect the nature of the measure (continuous vs. dichotomous) to vary the predicted effect.

3.4 | Results

A preliminary analysis of the relationships between the variables was conducted using Spearman correlations. A significant and positive correlation was observed between the two types of trolley dilemma responses, $r(260) = .73$, $p < .001$.

3.4.1 | Continuous trolley dilemma responses

The continuous measure of the trolley dilemma responses was submitted to a multiple regression analysis. Identity fusion, situation extremity, and the interaction term (i.e., Identity Fusion × Situation extremity) were entered as predictors. The continuous predictor (i.e., identity fusion) was mean-centered.

Results indicated a main effect of identity fusion, $B = 0.268$, $t(257) = 3.597$, $p < .001$, 95% CI: 0.121, 0.415, indicating that people higher in identity fusion were more willing to engage in self-sacrifice. We found no significant main effect of situation extremity, $B = 0.149$, $t(257) = 1.602$, $p = .110$, 95% CI: −0.343, 0.333. The predicted interaction between identity fusion and situation extremity was significant, $B = 0.303$, $t(257) = 4.077$, $p < .001$, 95% CI: 0.156, 0.779. As illustrated in Figure 2 (top panel), among those in the extreme situation condition, identity fusion was positively associated with more sacrifice responses to the dilemma, $B = 0.582$, $t(257) = 5.804$, $p < .001$, 95% CI: 0.384, 0.779. For those who were assigned to the non-extreme situation condition, there was no relationship between identity fusion and trolley dilemma responses, $B = −0.024$, $t(257) = −0.221$, $p = .825$, 95% CI: −0.240, 0.192.

Analyzed differently, this interaction showed that, among participants at higher levels of identity fusion (+1 *SD*), participants in the extreme situation condition were more willing to self-sacrifice than participants in the non-extreme situation condition, $B = 0.532$, $t(257) = 4.024$, $p < .001$, 95% CI: 0.272, 0.793. In contrast, for participants at lower levels of identity fusion (−1 *SD*),
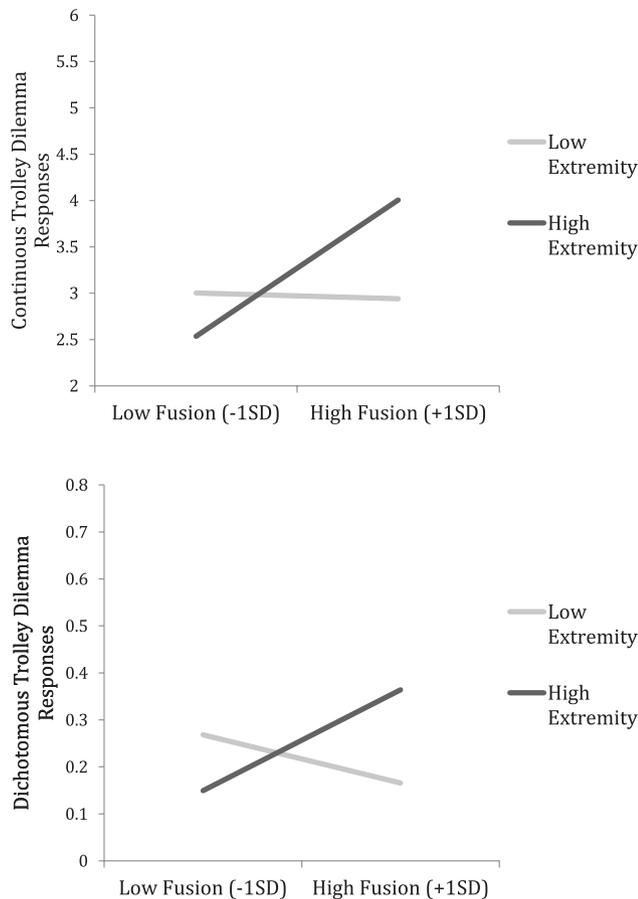
FIGURE 2 Study 2. Top panel. Continuous trolley dilemma responses as a function of identity fusion and situation extremity. Bottom panel. Dichotomous trolley dilemma responses as a function of identity fusion and situation extremity

participants in the non-extreme situation condition tended to be more willing to self-sacrifice than participants in the extreme situation condition, $B = -0.233$, $t(257) = -1.759$, $p = .079$, 95% CI: −0.494, 0.027.

3.4.2 | Dichotomous trolley dilemma responses

The dichotomous measure of the trolley dilemma response was submitted to a logistic binary regression analysis. Identity fusion, situation extremity, and the interaction term (i.e., Identity Fusion × Situation extremity) were entered as predictors. The continuous predictor (i.e. identity fusion) was mean-centered.

Results indicated a significant two-way interaction between identity fusion and extremity, $B = 0.35$, $z = 2.93$, $p = .003$, 95% CI: 0.118, 0.593.[5] As illustrated in Figure 2 (bottom panel), among those in the extreme situation condition, identity fusion was positively associated with more sacrifice responses to the dilemma, $B = 0.46$, $z = 2.93$, $p = .003$, 95% CI: 0.155, 0.779. For

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[5]All findings of the study remain unchanged when the item "I would do more for my country than most people" is removed from the analysis.

those who were assigned to the non-extreme situation condition, there was no relationship between identity fusion and trolley dilemma responses, $B = -0.24$, $z = -1.33$, $p = .182$, 95% CI: −0.601, 0.114.

Analyzed differently, this interaction showed that, among participants at higher levels of identity fusion (+1 SD), participants in the extreme situation condition were more willing to self-sacrifice than participants in the non-extreme situation condition, $B = 0.53$, $z = 2.50$, $p = .012$, 95% CI: 0.114, 0.946. In contrast, for participants at lower levels of identity fusion (−1 SD), participants in the extreme situation condition tended to be less willing to self-sacrifice than participants in the non-extreme situation condition, $B = -0.36$, $z = -1.67$, $p = .094$, 95% CI: −0.798, 0.063. No other effect reached significance, $B < 0.09$, $z < 0.82$, $p > .41$.

3.5 | Discussion

Identity fusion was associated with simulated self-sacrifice to a greater extent when extreme (vs. non-extreme) situations were activated. Thus, we conceptually replicated Study 1. This study, however, offers several improvements and advances over the previous study. First, although the pattern of results is conceptually replicated, the extremity of the situation was manipulated differently than in Study 1, providing convergent evidence in support of the importance of this variable. Second, the dependent measures did not co-vary with the situation extremity manipulation, offering a more calibrated, clear separation between predictor and predicted variables. Third, responses to the trolley dilemma were measured with both continuous and dichotomous measures. This is important because it suggests that a continuous measure can be a useful way of assessing responses to trolley dilemmas beyond the traditional dichotomous choices. Results yielded very similar and significant interactions, consistent with the one found in Study 1. Fourth, this study generalizes findings to fusion with groups.

It is worth noting that the non-extreme condition (i.e., donating a non-vital organ) might feel relatively extreme to some. Although in general, donating organs can be considered an extreme behavior, it is not as extreme as sacrificing your life. Furthermore, it is important to note that Spain has been the world-wide leader in organ donations for the last 25 years (Ministerio de Igualdad, Sanidad y Servicios Sociales, Actividad and de la Organización Nacional de Transplantes, 2016), and that the number of organ donors has increased every year. In fact, according to Spanish law 30/1979, 27 October, the organs of deceased citizens are extracted for donation by default unless there is explicit opposition expressed by the citizen. Thus, given the relative familiarity within Spanish society with organ donation, it is plausible to assume that this behavior was likely perceived as a relatively non-extreme self-sacrifice for the participants in this research. But, in research in other countries, a more moderate behavior may need to be used.

INCREASING THE PREDICTIVE VALIDITY OF IDENTITY FUSION IN LEADING TO SACRIFICE BY
CONSIDERING THE EXTREMITY OF THE SITUATION

EASP–WILEY | 9

Finally, it is important to note that the connection between the observed responses to the dilemma and actual sacrificial behavior in the real world may be weaker than what could be inferred from these laboratory studies. Therefore, future studies can benefit from including more ecological behavioral measures associated with sacrifice (Bostyn et al., 2018).

4 | GENERAL DISCUSSION

The results across two studies supported our hypothesis that the extremity of the situation moderates the effects of identity fusion on simulated self-sacrifice (e.g., trolley dilemma responses). Specifically, we found that identity fusion was associated with simulated self-sacrifice to a greater extent if participants were randomly assigned to consider an extreme (vs. non-extreme) situation. Therefore, considering the extremity of the situation can be helpful in predicting and understanding under which conditions people are more likely to act on their identity fusion and therefore behave in an extreme manner in favor of the in-group (i.e., situations that involve giving up one's life). The present findings have a number of implications for identity fusion, extreme situations, sacrifice decisions, and beyond.

Within the literature of identity fusion, the current research makes a number of contributions. First, the results of this research revealed conditions under which the impact of identity fusion on self-sacrifice is facilitated; namely, consideration of extreme situations. Ample research has shown that identity fusion can reliably predict several forms of willingness to self-sacrifice (Gómez, Brooks, et al., 2011; Gómez, Morales, et al., 2011; Sheikh et al., 2016; Swann, Buhrmester, et al., 2014; Swann, Gómez, et al., 2014; Swann, Gómez, Dovidio, et al., 2010; Swann, Gómez, Huici, et al., 2010; Swann et al., 2009; Whitehouse et al., 2014). Furthermore, prior research has shown that different situations (e.g., certainty, physical arousal) can increase the extent to which identity fusion predicts pro-group behavior (Gómez, Morales, et al., 2011; Swann, Gómez, Dovidio, et al., 2010; Swann, Gómez, Huici, et al., 2010). This research provides new evidence of a previously unexplored variable also capable of increasing the extent to which identity fusion predicts pro-group self-sacrifice behavior: when in extreme situations.

With regard to the study of extremity (Downing et al., 1992; Goldberg & Hartwick, 1990; Marques et al., 1988; Skowronski & Carlston, 1989), researchers could benefit from exploring other individual-difference measures that could be primed by the extremity of the situation. For example, dimensions such as sensation seeking (Arnett, 1996), openness to experience, and extroversion (Barrick & Mount, 1991) might be more likely to be activated and serve as valid guidance for people when presented with high (vs. low) extremity of the situation. Future research should examine to what extent extreme situations increase the availability and reliance on these trait dimensions and others beyond identity fusion.

We argue that some dimensions are more likely to be activated when presented with extreme situations than others. Identity fusion is especially likely to be activated in extreme settings because of the strong link between fusion and extremity. However, other dimensions are not associated with extremity and therefore are not likely to be activated by the mere presence of an extreme situation. As noted, that would be the case for other forms of affiliation with groups that are unrelated to extremity. Given that other forms of affiliation are not likely to be primed by extremity, the remaining question is to what extent our inductions of extremity might have unintentionally primed some other features that might be actually relevant for the alternative dimensions of group affiliation. For example, one might wonder whether the extremity manipulation might have served as a group norm to which participants could adhere. As noted in the introduction, previous literature may predict a fit between the group and the norm for certain groups. Specifically, Social Identity Theory (SIT) and Self-Categorization Theory (SCT) might predict that extremity could indeed fit with the group identity, to the extent that such extremity is perceived as a norm (SIT) or as prototypical (SCT). That is, this would be the case for certain groups in which extremity is either the descriptive or the prescriptive norm. There are several reasons, however, why we consider that our manipulations are not likely to be priming norms in these particular studies. On the one hand, prescriptive norms are usually primed in ways that inform participants of the potentially punitive consequences of not abiding by such norms (i.e., cheating; Nagin & Pogarsky, 2003; Niiya et al., 2008). On the other hand, descriptive norms are usually primed in ways that imply and/or display the behavior of a significant percentage of in-group members (Cialdini & Goldstein, 2004; Reno et al., 1993). Our manipulations share neither approach towards priming norms. That is, there are no contemplated mechanisms to detect and/or punish cheating, nor is there any description of other in-group members' behavior. Therefore, it seems unlikely that the current manipulations are priming already existing norms. Ultimately, these are speculations and future research would have to compare empirically the effects observed for identity fusion with other measures of group bonding to rule out these potential explanations.

In the current research we took a person-by-situation approach in which some situations (i.e., extreme situations) are more likely to activate identity fusion as a valid guide to self-sacrifice than others (non-extreme situations). A key question to answer is why exactly individuals may be more likely to rely on their identity fusion to self-sacrifice when considering extreme than non-extreme circumstances. As noted, it may be that extreme versus non-extreme situations activate identity fusion concerns, making that dimension a particularly valid guide to behavior. If so, future research can benefit from assessing to what extent the accessibility and validity of identity fusion increases when the situation is extreme while the accessibility and validity of other forms of affiliation with groups are not affected by these extreme situations. Given the strong empirical and conceptual connection between fusion and extremity, it seems plausible that the *concept* of fusion with a group is relevant primarily to

highly extreme scenarios. It is not so relevant to relatively moderate scenarios. Given the association between the fusion concept and the degree of behavioral extremity, when the situation is extreme people check on their levels of fusion and act on them. This means that even *low* fused people think the concept of fusion is more relevant when considering extreme (vs. non-extreme) situations and that is why we think the scale predicts for low fusion people too under high extremity.

This interpretation is consistent with previous research showing that identity fusion is highly predictive of self-sacrifice under extreme (vs. moderate) real-world circumstances (Buhrmester et al., 2015; Fredman et al., 2017; Gómez et al., 2017; Segal et al., 2018; Swann et al., 2015; Whitehouse et al., 2014; Whitehouse et al., 2017). It is under these extreme real-threat circumstances that individuals are more likely to activate and rely on their levels of identity fusion as a guide to make decisions. For that reason, under sacrifice necessity, individuals with high identity fusion are likely to self-sacrifice whereas those with low identity fusion refuse to do so (Paredes et al., 2018; Talaifar & Swann, 2019).

The present studies have implications not only for revisiting previous research on need for sacrifice but can also be useful in re-interpreting past results regading other moderators. For instance, according to Gómez, Brooks, et al. (2011), inducing feelings of social rejection may have unintentionally increased the extremity of the situation and the need to consult the level of identity fusion in making decisions (McGregor et al., 2012). Therefore, the present paradigm has the potential to accommodate apparently different results under the same unifying conceptual variable, as well as opening up the possibility of examining other individual-difference scales that might be more likely to be activated precisely in extreme situations or in situations that might trigger the unique relevance of the trait (Arnett, 1996).

To the best of our knowledge, this might be the first evidence suggesting that individual-difference scales in identity fusion are more likely to predict behavior when the extremity of the situation leads people to check on their predispositions and use those activated traits as a valid basis in guiding behavior. Although the present research focused on how the extremity of the situation served to activate identify fusion, future research should also examine to what extent the link between extremity and fusion is bidirectional. If so, having participants think about their level of identity fusion might activate concerns about the potential extremity embedded in any situation.

CONFLICT OF INTEREST

All authors declare no conflict of interest.

ETHICAL STATEMENT

This research abides by the ethical guidelines specified in the APA Code of Conduct.

DATA AVAILABILITY STATEMENT

The data sets of this research are available at: https://osf.io/qt4vk/

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INCREASING THE PREDICTIVE VALIDITY OF IDENTITY FUSION IN LEADING TO SACRIFICE BY CONSIDERING THE EXTREMITY OF THE SITUATION

EASP–WILEY | 11

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