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ARTICLE

Does the union always make the force? Group status and recategorization influence the perceived physical formidability of potential coalition groups

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Abstract

Coalitions among individuals and between groups, which have had critical evolutionary benefits for humans, play an important role in contemporary life. One key element of the processes of assessing potential allies is how they may contribute to the perceived physical formidability – fighting ability or the capacity to inflict costs on others – of the alliance. In three studies, focused for the first time on intergroup coalitions, we investigated how qualities of the groups such as status (social prestige) and the relationship between them influence the perceived physical formidability of a coalition (i.e., European Union, EU). Study 1 found that the inclusion of a group with higher or similar (but not lower) status increased the perceived formidability of the EU. Studies 2 and 3 showed that learning that ingroup members recategorized a low-status group within a common-group identity increased the perceived formidability of the EU including that group, compared with the conditions in which either outgroup members recategorized or no information was provided. Study 3 also revealed mediation by fusion – a visceral connection – with outgroup members, which has been relatively unexplored. Taken together, these studies reveal that both, status and social identity processes, may significantly affect the estimations of coalitional formidability.

KEYWORDS

coalitions, common group identity, formidability, fusion, intergroup relations, status

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BACKGROUND

Humans regularly form coalitions to bolster security, solve problems cooperatively, or achieve common goals (Bissonnette et al., 2015). Because of the fundamental benefits of these processes, evolutionary psychologists have argued that humans have developed the mental architecture that allows people to form and maintain alliances, evaluate and recruit allies and understand the complex network of alliances that make up the social world (Tooby & Cosmides, 2010). One key element of these processes involves the assessment of how different members of a coalition contribute to the perceived formidability of the alliance. Fessler and colleagues (Fessler et al., 2012, 2023; Fessler & Holbrook, 2013, 2016; Holbrook et al., 2016) have conducted important, pioneering work over the past decade on the formidability representation hypothesis, which states that formidability encompasses multiple assets and liabilities that contribute to fighting ability and that are cognitively encapsulated in a single representation with two conceptual dimensions: size (stature) and strength (muscularity). While recognizing the theoretical position and empirical support that cognitive representations of size and strength (i.e., envisioned physical formidability), through evolutionary processes, generally are affected by factors other than physicality, Gómez et al. (2017, 2023) and Tossell et al. (2022) distinguished between two facets of formidability – physical and spiritual.

Although the present research drew heavily on the theory and method developed by Fessler and colleagues, our work was further guided by the approach of Gómez et al. (2017, 2023) and Tossell et al. (2022). The particular focus of the three current studies was on the physical facet of formidability, also extending research on interpersonal coalitions to intergroup allies. Physical formidability is defined as the fighting ability or the capacity to inflict costs on others (Sell et al., 2009). As such, in our adaptation of the tools introduced by Fessler et al. (2012) and reflecting the approach used by Gómez et al. (2017, 2023, see also Tossell et al., 2022), we asked participants in the current research to frame their response in terms of the material potential of such group to fight, defend itself, and confront its opponents through the strength derived from its material resources.

The concept of physical formidability is directly relevant to intergroup and international relations. Perceiving the ingroup as more formidable than an outgroup is associated with more aggressive inclinations against a threatening outgroup and with a stronger intention to make costly sacrifices for the ingroup and its cause (Vázquez et al., 2020). Perceiving higher physical formidability also relates to greater endorsement of competitive social policies (Petersen & Laustsen, 2019) and support for military interventions (Sell et al., 2009). Moreover, greater physical formidability is perceived as particularly valuable in intergroup negotiations (Lukaszewski et al., 2016).

In view of the impact of physical formidability, research has also examined the factors that undermine or increase it. In the research on the broad impact of perceived formidability, the presence of allies (Fessler & Holbrook, 2013) and markers of coalitional affiliation augment estimates of the formidability of a coalition (Fessler & Holbrook, 2016). However, previous research on formidability has primarily focused on coalitions between individuals rather than groups. Previous studies have examined the factors that may contribute to the formidability of large groups such as the country or national armies (e.g., Fessler & Holbrook, 2016; Gómez et al., 2017, 2023; Vázquez et al., 2020) but, to the best of our knowledge, there is no evidence concerning the variables that influence the formidability of intergroup coalitions. To fill this gap, the present studies investigated how qualities of a group (i.e., status) and the relationship between groups (i.e., shared group identity) relate to the perceived formidability of a potential coalition between groups, in this case the European Union (EU).

After the frequent wars that pitted European neighbours against each other for centuries, in 1950 six European countries formed a coalition to secure lasting peace. Presently, the EU brings together 27 countries and 447 million inhabitants (Eurostat, 2021). This is a particularly relevant example of a coalition not only because of the relevance of the concept of formidability for ensuring peace and promoting economic and social progress, but also because the decision of the United Kingdom to leave the EU in 2020 generated significant speculation about the capacity of the EU to achieve its goals – representing the perceived formidability of the coalition. Recently, some analysts claimed that Russia's 2022 invasion

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of Ukraine has been partly motivated by the desire to undermine the latter's rapprochement with the EU and NATO.

Between the years 2016 and 2020, we conducted three studies with Spanish samples who present an above-average level of attachment to the EU (European Commission, 2021). These studies investigated the perceived formidability of the EU as a function of whether another group is or is not considered part of the coalition. We first analysed how the perceived status of a potential member of a group affects the way participants assess the formidability of the coalition, next examined how the relationship between the participants' group and another group influences perceived formidability, and then tested what a key element of that process is. Specifically, Study 1 examined the perceived formidability of the EU when it did or did not include a country viewed as lower, equal or higher in status than Spain. While the status of another group relates directly to the esteem with which one's group is held – with the inclusion of a higher status group enhancing esteem and of a lower status group diminishing esteem (Gómez et al., 2008) – we explored a potentially different pattern for physical formidability. Whereas the inclusion of a higher status group in a coalition increases physical formidability, because of 'strength in numbers,' the incorporation of a lower status group may not weaken formidability (e.g., when ingroup members perceive the ingroup and the outgroup as a single group, Gómez et al., 2013). Study 2 extended Study 1 by testing the impact of a hypothesized moderating variable, information about the shared group identity between Spaniards and a group reflective of low status in Study 1, Eastern European immigrants. Study 3 investigated the role of a potential mediator – identity fusion, a visceral feeling of oneness with a group – of how common group identity between Spaniards and Eastern European immigrants influences the perceived formidability of the EU excluding or including that group. We report how we determined our sample size, all data exclusions (if any), all manipulations and all measures in the studies. The studies and analysis plans were not pre-registered, but all stimuli are included in the Appendix S1.

STUDY 1

Status (social prestige) relates to how formidable a person is perceived: high-status individuals are viewed as more formidable than low-status persons (Blaker & van Vugt, 2014). However, despite the central role that group status plays in human motivation (Tajfel & Turner, 1979) and intergroup relations (Sidanius et al., 2017), little it is known about how status and perceived formidability are related at the group level. To illuminate the role of group status, we tested how the status of outgroup members (a European country) relative to the ingroup (Spain) impacts the perceived physical formidability of the alliance (the EU) when such outgroup is excluded or included in the coalition. Following Fiske et al. (2016), we understand status as social prestige. Although status may correlate with power – the asymmetrical control over resources – because powerful people often are also respected, there are also relevant distinctions (e.g., legitimacy) between both constructs (Fiske et al., 2016). While both are likely highly relevant to formidability judgements, we focused on status because it is associated to a range of positively valued characteristics in specific contexts independently of power (Boldry & Gaertner, 2006) and thus may relate to a wider range of resources contributing to formidability. We note that although formidability and status are related, they are not isomorphic. For instance, small, rich countries could be perceived as not formidable but with high status, whereas big, non-democratic countries could be viewed as low in status but highly formidable.

In Study 1, participants identified countries that were higher, similar and lower in status than Spain and evaluated the formidability of the EU when each of the selected countries was part of the coalition and another time assuming that the other country was not part of the coalition. Based on previous research on the influence of an individual's status on interpersonal coalitions (Blaker & van Vugt, 2014), we predicted that perceptions of formidability of the EU when the country was included, compared with the EU when this country was excluded, would be greatest when the other country was higher in status and least (and possibly reversed) when the country was lower in status.

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Method

Participants

Two hundred and sixteen Spaniards (55.1% women, $M_{age} = 37.27$, $SD = 13.63$) participated voluntarily. Participants were recruited using a snowball technique, such that undergraduate students in a distance learning university asked their acquaintances to participate in a online research about intergroup relations. A sensitivity analysis using G*Power (Faul et al., 2009) revealed that a sample size of 216 participants could detect a small effect ($f = 0.12$, $\eta^2_p = .01$) in a repeated measures within-factors analysis of variance (ANOVA) considering an alpha level of .05, 80% power, and a correlation between repeated measures of .19.

Procedure

In counterbalanced order, participants were asked to engage in a thought experiment and select three countries from the EU: one with lower status as compared to Spain, another with similar status and a third country with higher status. After selecting each country, participants estimated the formidability of the alliance (EU) excluding that country (partial formidability) and including it (total formidability).

To measure perceived physical formidability, we used a dynamic measure (Gómez et al., 2017) that was based on a 6-item pictorial measure previously developed by Fessler et al. (2012). This measure shows a human body that varies conjointly and proportionally in size and muscularity. Previous research suggests that, providing different instructions, this measure can be used to capture both physical and spiritual formidability (Gómez et al., 2017, 2023; Tossell et al., 2022) and, depending on the target, the estimations for these types of formidability may differ substantially.

In all studies, participants read that the physical formidability of a group refers to the potential of such group to fight, defend itself, and confront its opponents and that this strength comes from its material resources (e.g., social power, access to weapons, size). We provided this definition to make sure that participants focused on the material factors that contribute to formidability. Then, participants were shown a human body and were asked to imagine that this body represented the strength of the EU *excluding* the country that they had previously selected (partial formidability). By increasing or decreasing the size and strength of this body participants indicated to what extent they think that the EU was strong or weak excluding the selected country. In the following screen, they were asked to imagine that the same figure represented the strength of the EU *including* the country that they had previously selected (total formidability) and make the corresponding estimate. Scores ranged between 0 and 10, with higher scores representing greater formidability. Hereinafter, we refer to partial formidability as the perceived formidability in the alliance after excluding members of such outgroup. Total formidability is the perceived formidability in the alliance when outgroup members are included.

Results

Regarding countries of lower status relative to the ingroup (Spain), 66 participants (29.6%) chose Romania and 66 participants (29.6%) chose Greece. Regarding countries with similar status, Italy was selected by 118 participants (54.6%). Finally, 117 participants (54.2%) chose Germany as a higher-status country.

Table 1 includes the correlations between all the variables of Study 1 and Table 2 shows the means and standard deviations for Studies 1–3. As Table 1 shows, all of the measures of formidability were positively correlated, indicating that those participants who perceived higher (partial or total) formidability considering one group also tended to perceive higher (partial or total) formidability when considering other groups.

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TABLE 1 Correlations.

	1	2	3	4	5
1. Partial formidability low status	—				
2. Total formidability low status	.51***	—			
3. Partial formidability similar status	.67***	.41***	—		
4. Total formidability similar status	.57***	.64***	.53***	—	
5. Partial formidability high status	.36***	.36***	.44***	.30***	—
6. Total formidability high status	.41***	.42***	.39***	.69***	.19**

***$p < .001$, **$p < .01$.

TABLE 2 Means and standard deviations of partial and total formidability per condition.

	Partial formidability		Total formidability	
	M	*SD*	*M*	*SD*
Study 1				
Higher status	4.13	2.51	7.83	2.02
Similar status	5.69	2.26	6.89	1.98
Lower status	6.64	2.31	6.33	2.27
Study 2				
Ingroup recategorization	6.20	2.23	7.23	1.71
Outgroup recategorization	6.58	2.19	6.37	2.36
Control	6.76	1.88	6.23	2.12
Study 3				
Recategorization	5.63	2.31	7.04	1.87
Control	5.85	2.18	6.51	1.82

Note: The significant differences are explained in the text.

TABLE 3 Repeated-measures analysis of variance (ANOVA) and conditional effects of formidability for each level of status.

Effects	*F*	*df*	*p*	η^2_p
Status	8.96	2, 214	<.001	.08
Formidability	179.14	1, 215	<.001	.46
Formidability × status	129.40	2, 214	<.001	.55
Higher status	350.62	1, 215	<.001	.62
Similar status	73.72	1, 215	<.001	.26
Lower status	4.06	1, 215	.045	.02

To check how the status of the other group influenced the partial and total formidability of the alliance (the EU), we conducted a repeated-measures ANOVA[1] considering high, similar and low status as the first within-subject factor and partial formidability (excluding the outgroup) and total formidability (including the outgroup) as the second within-subject factor. As Table 3 shows, the main effects of formidability and status were significant.

[1] Alternative analyses for all the studies considering the difference between total and partial formidability as the outcome can be consulted in Appendix S1.

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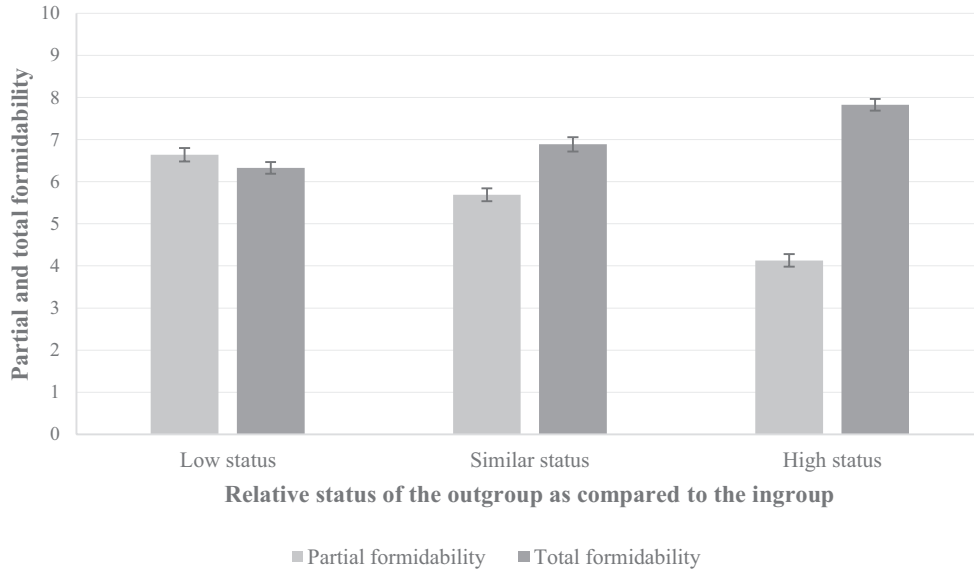

FIGURE 1 Perceived partial and total formidability of an alliance (the EU) considering and discounting a group of lower, similar and higher status as compared to the ingroup (Spain). *Note*: Error bars represent standard errors.

The interaction between the two factors was significant (see Figure 1). As expected, the total formidability of the alliance was significant and substantially higher than its partial formidability when a higher status or similar status country were considered. By contrast, when a country with lower status was considered, the total formidability of the alliance was lower than its partial formidability.

Discussion

Study 1 revealed that participants perceived more formidability of an intergroup coalition, the EU, when groups with higher and similar status than the ingroup were included in the alliance (total formidability) than when they were not (partial formidability). By contrast, the inclusion (vs. exclusion) of a group lower in status than the ingroup (Spain) reduced the perceived formidability of the alliance.

Because the union with similar and high-status groups was not problematic (it was beneficial in terms of formidability), in the next studies we tried to determine how to increase the total formidability of the alliance when the outgroup has lower status. Based on the results of Study 1 and on previous research showing that Spanish participants perceived Eastern European immigrants as lower in status than Spaniards (Gómez et al., 2013), we focused on this group. Romanians represent the second largest group of immigrants living in Spain with 639,426 people from Romania and 118,682 people from Bulgaria out of 5,325,907 immigrants (Instituto Nacional de Estadística, 2021).

STUDY 2

Study 1 demonstrated that inclusion of a lower status country reduced the perceived formidability compared to when it was not included in the alliance. Study 2 extended this line of work by focusing on the conditions that might affect that response. Theoretically, while the inclusion of a low-status group in a coalition may not increase its perceived formidability (as revealed in Study 1), interventions that frame relations with such group in particular ways may enhance the positive impact of its inclusion. The literature on formidability has largely overlooked how identity processes influence perceived formidability.

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Given that social identities shape perceptual processing (Kawakami et al., 2017), and because formidability depends not only on the individual qualities of the members of an alliance but also on how members perceive their relationships particularly with respect to their ability to coordinate their actions, we further investigated the role of perceived common group membership. In Studies 2–3, we experimentally tested whether Spaniards' perceived formidability of the EU would differ as a function of emphasizing shared identity between Spaniards and Eastern European immigrants.

Research on the common ingroup identity model (Gaertner et al., 2016; Gaertner & Dovidio, 2000) has demonstrated that when people recognize that they share a social identity with others they are more cooperative, trusting and trustworthy, and value their contributions more (Levy & Dovidio, 2021). However, because it can threaten distinctive existing social identities, efforts to induce common identity can be met with suspicions when initiated by outgroup members and may reduce positive orientations (Gómez et al., 2008, 2013; Kunst, Thomsen, et al., 2019). To more fully illuminate the dynamics of recategorization in terms of a shared identity on perceptions of formidability, Study 2 included three conditions in which Spanish participants read: (a) that other Spaniards believed that Spaniards and Eastern European immigrants shared a common European identity (ingroup recategorization); (b) that Eastern European immigrants held such view of common identity (outgroup recategorization) or (c) a text with no mention to common identity (control condition). We then compared the perceptions of formidability of the EU when including (total formidability) or excluding these immigrants (partial formidability).

Because formidability depends upon the synchronized behaviour of the members of a collective (Fessler & Holbrook, 2016) and the acceptance of common identity improves trust and facilitates cooperation among people originally from different groups (Levy & Dovidio, 2021), we predicted a statistical interaction such that participants in the ingroup recategorization condition would perceive more formidability when immigrants are included in the EU than when they are not, compared to participants in either the outgroup recategorization condition (which seems to reap fewer benefits from recategorization efforts; Gómez et al., 2008, 2013) or the control condition.

Method

Participants

Four hundred and forty-eight Spaniards (51.6% women, $M_{age} = 36.74$, $SD = 13.33$) participated voluntarily. Nine more participants with non-Spanish nationality were excluded from the analyses. A sensitivity analysis revealed that a sample size of 448 participants could detect a small effect ($f = 0.08$, $\eta^2_p = .006$) in a repeated measures ANOVA (within-between interaction) with three experimental groups and two measures considering an alpha level of .05, 80% power, and a correlation between repeated measures of .30.

Procedure

Participants were recruited for a study about intergroup relations. They first read the definition of physical formidability as in Study 1 and then rated the formidability of Spaniards and Eastern European immigrants using the same measure (see Gómez et al., 2017; see also Fessler et al., 2012). Then, all participants read the same cover story about how we were conducting research in several countries from the EU with the goal of learning about participants' opinions concerning the relationship between Eastern European immigrants and Spaniards. Participants in the two recategorization conditions (based on Gómez et al., 2008, 2013) were told that one of the main interests was to find out whether there was a European spirit, with the inhabitants of the different countries having a mental representation as members of a common group: Europeans. Participants in the *ingroup recategorization condition* read that 80% of Spaniards perceived Eastern European immigrants and Spaniards as belonging to the same group,

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TABLE 4 Correlations.

	M	*SD*	1	2	3	4
1. Ingroup formidability	5.63	2.63	—			
2. Outgroup formidability	4.90	2.40	.37***	—		
3. Partial formidability	6.45	2.17	.43***	.22***	—	
4. Total formidability	6.66	2.07	.34***	.34***	.30***	—
5. Condition			.03	.12*	−.03	.12*

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

Europeans. Participants in the *outgroup recategorization condition* read that 80% of Eastern European immigrants perceived Spaniards and themselves as belonging to the same group, Europeans. Participants in the *control condition* were also informed that the study was examining the way Spaniards think about Eastern European immigrants, but they were not exposed to the results of the fictitious study.

Then, all the participants completed the questionnaire containing the measures of partial formidability of the EU (excluding Eastern European immigrants) and its total formidability (including Eastern European immigrants). The scores could range from 0 (least formidable) to 10 (most formidable).

Finally, participants reported their sex, age and nationality and were debriefed and thanked.

Results

Table 4 includes the correlations between all the variables of Study 2. All the measures of formidability (ingroup, outgroup, partial and total) were positively correlated.

To test whether the experimental manipulation influenced the partial and total formidability of the alliance (EU), we conducted a mixed-model ANOVA considering partial and total formidability as the within-subject factor and condition as the between-subjects factor. Of primary relevance to our hypotheses, the Condition × Partial vs. Total Formidability interaction, as illustrated in Figure 2 and shown in Table 5, was significant.

The decomposition of the interaction (see Effects of Formidability in Table 5) revealed that in the ingroup recategorization condition the perceived total formidability of the alliance was higher than its partial formidability. However, in the control condition the total formidability of the alliance was lower than its partial formidability. In the outgroup recategorization condition, there was no significant difference between the partial and total formidability.

From an alternative perspective (see Effects of Condition in Table 5), there were no differences between the conditions in ratings of the formidability of the EU when Eastern European immigrants were not included (i.e., partial formidability). However, for ratings of formidability when they were included (i.e., total formidability), there was a significant effect. In particular, Bonferroni comparisons showed that the EU was rated as higher in total formidability in the ingroup recategorization condition than in the outgroup recategorization, $p = .020$, and control conditions, $p < .001$. The outgroup recategorization and control conditions did not differ, $p = .401$.

Regarding the main effects, participants perceived the EU as slightly more formidable when Eastern European immigrants were included (vs. excluded), Ms = 6.66 and 6.45, SDs = 2.07 and 2.17, respectively. The main effect of Condition (the between-subjects factor) was not significant.

Supplementary analyses, reported in the Appendix S1, that controlled for the initial perceptions of ingroup and outgroup formidability, yielded the same pattern of statistically significant results.

Discussion

Study 2 provided convergent evidence that the inclusion of a low-status outgroup in an alliance does not, as the control condition reveals, generally contribute to the perceived formidability of the coalition.

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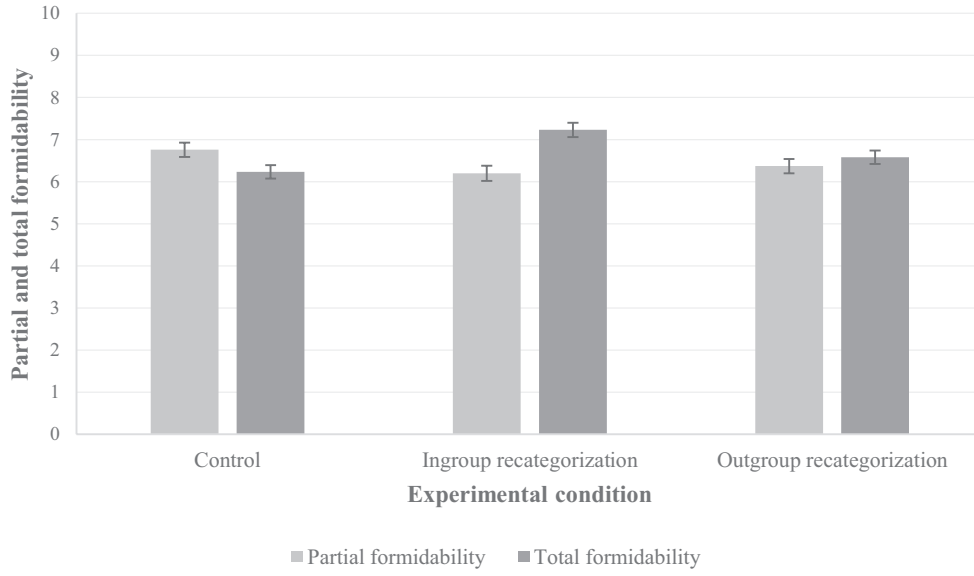

FIGURE 2 Perceived partial and total formidability of an alliance (the EU) as a function of the experimental manipulation of recategorization. *Note*: Error bars represent standard errors.

TABLE 5 Repeated-measures analysis of variance (ANOVA) and conditional effects of formidability and condition.

	F	*df*	*p*	η^2_p
Condition	0.84	2, 445	.431	.00
Formidability	4.27	1, 445	.039	.01
Formidability × Condition	14.72	2, 445	<.001	.06
Effects of formidability for:				
Ingroup recategorization condition	24.52	1, 445	<.001	.05
Outgroup recategorization condition	1.12	1, 445	.291	.00
Control condition	7.07	1, 445	.008	.02
Effects of condition for:				
Partial formidability	2.58	2, 445	.077	.01
Total formidability	8.45	2, 445	<.001	.04

In contrast and as predicted, acknowledging that most ingroup members (Spaniards) recategorize ingroup members (Spaniards) and outgroup members (Eastern European immigrants) in a superordinate category led participants to perceive more formidability in the alliance (the EU) when the low-status outgroup was included than when it was excluded. Consistent with previous studies (Gómez et al., 2013), the same information provided by outgroup members was not effective in increasing the perceived total formidability of the alliance as compared to the partial formidability. Consequently, we did not include this condition in the next experiment. This last experiment aimed at illuminating a potential mediating mechanism of such effect, fusion with immigrants.

STUDY 3

Research on the common ingroup identity model (Gaertner et al., 2016; Gaertner & Dovidio, 2000) has revealed that making common identity salient produces a range of positive responses toward another

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group. Study 3 explored another potential effect, one that, to the best of our knowledge, has not been previously demonstrated, identity fusion. Identity fusion is a visceral feeling of oneness with a group and its members (Swann et al., 2009) characterized by strong feelings of invulnerability (Gómez et al., 2011), that has unique properties and consequences relative to other forms of alignments with groups such as group identification (Swann et al., 2012) or to less-related constructs such as social dominance orientation (Kunst, Dovidio, et al., 2019) and group entitativity (Reddish et al., 2016). Just as recategorization helps former outgroup members to benefit from intergroup bias (Gaertner et al., 2016), it is possible that it also reinforces the bonds among members in a way that intensifies feelings of fusion between people normally perceived as members of different groups. Study 3 thus aimed to replicate and extend the results of Study 2 by testing whether learning about the recategorization of the ingroup (Spaniards) and a low-status group (Eastern European immigrants) as members of a common group (Europeans) increases the perceived total (vs. partial) formidability of the alliance by strengthening fusion with former outgroup members.

Identity fusion not only predicts extreme pro-group behaviour (Gómez et al., 2020) but also a range of outcomes that are associated with theorizing and empirical findings relevant to formidability. Whitehouse et al. (2017) found supporting evidence that identity fusion may have evolved as social instinct improving chances to succeed in competition with other groups under resource scarcity. Strongly fused individuals experience a sense of reciprocal strength with the group, such that they believe that they are strong because of their group and that they make their group strong (Gómez et al., 2020). In addition, a previous investigation found that those who are more fused with Europe, independently of their level of fusion with their country, are more willing to fight and die for Europe (Swann et al., 2010). Even more directly related to the current work, people who are more fused perceive their group as more formidable (e.g., Vázquez et al., 2020). Regarding the antecedents, fusion with a group increases when people share negative experiences with others (Whitehouse et al., 2017) or experiences of relative deprivation (Kunst, Dovidio, et al., 2019).

In the present research, we focused on another, very different precursor to fusion – the recategorization in a shared group identity – and on a different outcome – the perceived formidability of a coalition. The change in the perception of intergroup boundaries from two groups to a single one redirects the cognitive and motivational processes that usually contribute to bias (Gaertner et al., 2016), which can enable the development of close bonds with outgroup members similar to those that bind individuals with ingroup members. Consequently, our recategorization manipulation, which strengthens a sense of common identity, might result in stronger feelings of fusion toward Eastern European immigrants (compared with the control condition). In turn, fusion with former outgroup members might increase the perceived formidability of the alliance (the EU) when Eastern European immigrants are included (total formidability) compared to excluded (partial formidability) in line with recent evidence that people who are fused with their group perceive it more physically formidable than the outgroup (Atran et al., 2014; Sheikh et al., 2016; Vázquez et al., 2020). However, no differences between total and partial formidability were expected in the control condition. We tested these hypotheses in a 2 (between-subject factor: recategorization vs. control) by 2 (within-subject factor: partial formidability vs. total formidability) mixed factorial design. The anticipated pattern for formidability would be supported by an Experimental Condition × Total versus Partial Formidability interaction. Additionally, we hypothesized that fusion with Eastern European immigrants would mediate the effect of condition on total relative to partial formidability.

Method

Participants

Three hundred and seventy-seven Spaniards (61% women, $M_{age} = 37.04$, $SD = 14.28$) participated voluntarily. Seven more participants who were not Spaniards were excluded from the analyses.

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A sensitivity analysis revealed that a sample size of 377 participants could detect a small effect ($f = 0.09$, $\eta^2_p = .01$) in a repeated measures ANOVA (within-between interaction) with two experimental groups and two measures considering an alpha level of .05, 80% power, and a correlation between repeated measures of .18.

Procedure

Participants received an email invitation to participate in a study about relations between Spaniards and Eastern European immigrants. As in Study 2, participants first read the definition of physical formidability of a group and rated the formidability of Spaniards and Eastern European immigrants. Then, they were randomly assigned to one of the two experimental conditions: ingroup recategorization or a control condition.

Participants in the (*ingroup*) *recategorization condition* read the same information about a fictitious study exploring participants' opinion about the relation between Eastern European immigrants and Spaniards as in Study 2, and then summarized in two sentences the information that they had received. In contrast to the no-information control condition in Study 2, participants in the *control condition* of Study 3 performed a task of similar duration to those in the experimental condition. Specifically, we asked them to explain how they had learned about the present study. After the manipulation, to assess group representations as recommended by Gaertner and Dovidio (2000), we asked participants to respond on scales ranging from 0 (*Strongly disagree*) to 6 (*Strongly agree*), the following items: "To what extent do you think that Spaniards and immigrants from these countries are…(a) individuals, (b) persons belonging to two different groups, and (c) persons belonging to one group?" Then, participants completed the measures of fusion with the outgroup (immigrants) and perceived formidability of the alliance.

Fusion with the outgroup was measured using the Dynamic Measure of Identity Fusion (Jiménez et al., 2015) that includes two circles of different size representing the self (the small circle) and the outgroup (the large circle). Participants were asked to drag the small circle to the position that best represented their relationship with Eastern European immigrants. The degree of overlapping between the circles was used as the fusion index, which ranged from 0 (not overlapping) to 10 (completely overlapping). Next, participants estimated the formidability of the EU without Eastern European immigrants (partial formidability) and with them (total formidability) as in our previous studies. (At this point, participants completed a measure of willingness to collaborate with Eastern European immigrants on behalf of Europe; see Appendix S1 for details of the measure and results.). Finally, the participants completed the demographic information and were debriefed and thanked.

Results

Table 6 includes the correlations between all the variables of Study 3. Ingroup, but not outgroup, formidability was positively correlated with the partial and total formidability of the EU. Fusion with immigrants was not associated with ingroup and outgroup formidabilities, but it correlated positively with the partial and total formidability of the EU.

Main analyses

We tested the effect of experimental condition first on Spanish participants' identity fusion with Eastern European immigrants and then on perceived formidability. After that, we examined the indirect effect of the experimental conditions on formidability through fusion.

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TABLE 6 Correlations.

	M	*SD*	1	2	3	4	5	6
1. Ingroup formidability	4.41	2.29	—					
2. Outgroup formidability	4.85	2.36	.23***	—				
3. Fusion with immigrants	4.07	4.18	.08	−.08	—			
3. Partial formidability	5.74	2.24	.20***	.08	−.20***	—		
4. Total formidability	6.76	1.86	.25***	.07	.18***	.19***	—	
5. Formidability difference	1.01	2.62	.00	−.02	.31***	−.72***	.54***	—
6. Condition			.02	.03	.22***	−.05	.14**	.14**

Note: Formidability difference = Total formidability − Partial formidability. ***$p < .001$, **$p < .01$.

With respect to *fusion with Eastern European immigrants*, a one-way ANOVA on identity fusion revealed a significant effect of the experimental condition, $F(1, 375) = 18.54$, $p < .001$, $\eta^2_p = .05$, indicating that participants in the recategorization condition were more fused with outgroup members (immigrants) than those in the control condition, *M*s = 5.03 and 3.22, *SD*s = 4.17 and 4.00, respectively.

To evaluate whether the experimental manipulation influenced the *partial and total formidability* of the alliance (the EU), we conducted a mixed-model ANOVA considering partial and total formidability as the within-subject factor and condition as the between-subjects factor. The interaction between the two factors, shown in Figure 3, was significant (see Table 7).

In the (ingroup) recategorization condition, participants perceived the EU as more formidable when it included Eastern European immigrants (total formidability) than when it did not (partial formidability). In the control condition, the total formidability of the EU was also perceived to be higher than its partial formidability, but the difference was smaller.

When considered from an alternative perspective, participants in the recategorization and the control conditions perceived the formidability of the EU similarly when Eastern European immigrants were not included (partial formidability). However, when asked about the EU that includes Eastern European immigrants, participants in the recategorization condition perceived it to be more formidable (total formidability) than did those in the control condition.

Regarding the main effects, participants perceived the EU as more formidable when Eastern European immigrants were included (vs. excluded), *M*s = 6.76 and 5.74, *SD*s = 1.86 and 2.24. The main effect of Condition (the between-subjects factor) was not significant.

Indirect effect

To test our hypothesis that identity fusion might mediate the effect of recategorization on perceived formidability, we performed a bootstrapping test with the PROCESS macro for SPSS (Hayes, 2018, model 4). The experimental condition (0 control, 1 recategorization) was included as predictor and fusion with outgroup members (Eastern European immigrants) as the mediator. The outcome variable was calculated by subtracting partial formidability from total formidability, with higher scores representing greater perceived formidability of the EU when Eastern European immigrants were included rather than excluded. The indirect effect of condition on formidability via fusion was significant, $b(373) = 0.33$, $SE = 0.10$, 95% [0.15, 0.54], whereas the direct effect was not, $b(373) = 0.42$, $SE = 0.26$, 95% [−0.10, 0.94]. As Figure 4 shows, recategorization intensified fusion with outgroup members, which in turn appeared to increase the difference between partial formidability and total formidability as compared with the control condition.

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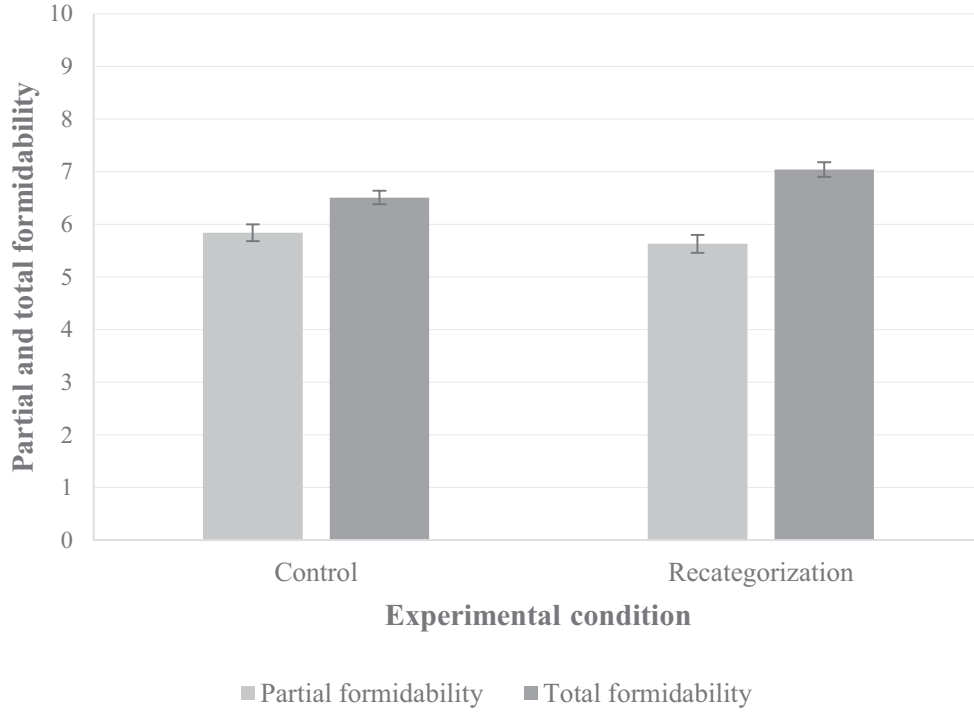

FIGURE 3 Perceived partial and total formidability of an alliance (the EU) as a function of the experimental manipulation of recategorization. *Note*: Error bars represent standard errors.

TABLE 7 Repeated-measures analysis of variance (ANOVA) and conditional effects of formidability and condition.

	F	*df*	*p*	η^2_p
Condition	0.93	1, 375	.335	.00
Formidability	59.81	1, 375	<.001	.14
Formidability × Condition	7.82	1, 375	.005	.02
Effects of formidability for:				
Recategorization condition	52.25	1, 375	<.001	.12
Control condition	12.98	1, 375	<.001	.03
Effects of condition for:				
Partial formidability	0.88	1, 375	.350	.00
Total formidability	7.87	1, 375	.005	.02

Discussion

Study 3 replicated the finding from Study 2 that the perceived formidability of the EU that included Eastern European immigrants (i.e., total formidability) was greater when ingroup members recategorized them and Spaniards as Europeans than, in the control condition, in which participants were not exposed to such information. This effect occurred both when the measure directly represented the formidability of the EU (i.e., comparing the total formidability of the EU in the ingroup recategorization compared to the control condition) and when the measure was comparative – the total formidability relative to the partial formidability of the EU.

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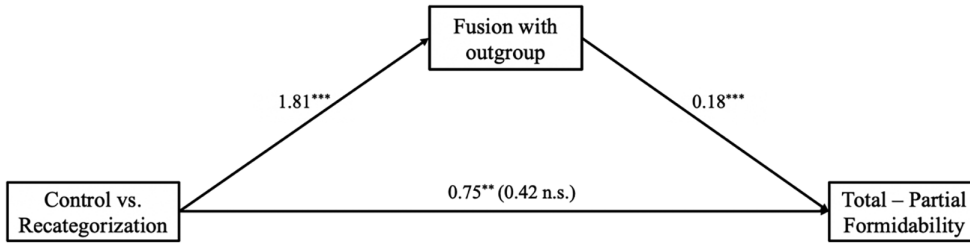

FIGURE 4 Indirect effect of the condition (0 control, 1 recategorization) on the difference between partial and total formidability of an alliance (the EU) via fusion with former outgroup members. *Note*: ***$p < .001$, **$p < .01$. Numbers refer to unstandardized regression coefficients.

Study 3 also extended the findings on identity fusion, common ingroup identity, and Study 2 by demonstrating, for the first time to our knowledge, that a manipulation shown to induce a sense of common identity (Gómez et al., 2008, 2013) – ingroup recategorization – creates greater fusion with the group having shared identity. However, as our proposed mediator (identity fusion) and our outcome of interest (perceived formidability) were measured in close proximity, our mediation should be considered correlational.

We also acknowledge an unanticipated result. In contrast to Study 2, in Study 3 the total formidability of the alliance was higher than the partial formidability even in the control condition. One explanation for this difference involves the context in which the two studies were conducted. Study 2 was conducted prior to the COVID-19 pandemic; Study 3 was performed during the pandemic. The circumstances surrounding the pandemic might have helped participants in Study 3 better recognize the contribution of immigrants as "essential frontline workers" (for example, working in agriculture, food services, grocery stores, transportation) to maintain basic services during the lockdown. This recognition of the contribution of immigrants could have increased the perception that the coalition was stronger with them than without them. In fact, in Study 3 participants perceived the ingroup as less formidable than the outgroup, unlike in Study 2 in which the expected ingroup bias regarding formidability appeared (see Appendix S1). This interpretation is consistent with the position that perceived formidability is related not only to the individual statuses of the members of an alliance but also on the coordination and potential complementarity of the contributions that various members make in a coalition. In any case, to clarify the effect in the control condition, we performed a mini meta-analysis ($n = 571$) of the difference between the perceived total and partial formidability of the EU. The meta-analysis suggested that the inclusion of a low-status group does not necessarily reduce a coalition's formidability (see Appendix S1).

GENERAL DISCUSSION

Whereas previous work on intergroup relations has focused largely on the favorability of intergroup orientations, the current work explored the impact of a power-related factor, formidability, in the assessment of partners in a coalition, in this case the EU. Although some previous work has examined the perceived formidability of large groups (e.g., Fessler & Holbrook, 2016; Gómez et al., 2017, 2023; Vázquez et al., 2020), there was no empirical evidence on the factors that shape the formidability of an intergroup coalition. The main goal of these studies was to understand more fully how including groups of different statuses affects the perceived physical formidability of an intergroup alliance and to illuminate key contributors to these dynamics, which can stimulate further research that investigates additional moderators, mediators and consequences.

Our research was inspired by the theory and findings of Fessler and colleagues (e.g., Fessler et al., 2012, 2023; Fessler & Holbrook, 2013, 2016) on formidability, but our primary goal was not further substantiation of their results or approach. Rather, the current work followed the recent direction

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of Gómez et al. (2017, 2023) and Tossell et al. (2022) that highlighted distinctions with respect to formidability. Our research, in its conceptualization and method, focused on physical formidability. For example, whereas Fessler and colleagues created their measure of formidability representing it by size and strength in order to tap people's responses without cuing participants about the underlying question being asked, we framed the size-and-strength measure explicitly in terms of physical formidability because of our specific interest in the role of status in the perceived physical formidability of potential intergroup coalitions. We view our interest and approach as complementary to the seminal work of Fessler and colleagues on this topic.

Study 1 showed that the alliance with a group that is perceived as having similar or higher status than the ingroup (Spain), but not a group lower in status, increases the perceived formidability of the coalition (the EU) as compared to when such a group is excluded from it. Study 2 showed that, when individuals learn that ingroup (but not outgroup) members generally recategorize ingroup (Spaniards) and outgroup members (Eastern European immigrants) within a single group (Europeans), they perceived that the inclusion (vs. exclusion) of a low-status group increases the formidability of the coalition (the EU). Study 3 further revealed that information that the ingroup and a low-status outgroup share a common identity increases fusion with outgroup members, which in turn relates to greater perceived formidability of a coalition that includes (rather than excludes) the outgroup. Taken together, these results suggest that the formidability of a coalition depends not only on utilitarian considerations as the status of its members but also on the cognitive representations of the groups involved as a single superordinate entity. Our research thus reveals the importance of going beyond the typical emphasis of work on physical formidability on characteristics of strength or power of potential alliance members to consider how identity processes contribute to perceptions of physical formidability of a coalition.

Understanding how enhanced connections among members of groups and unique connections to a group (identity fusion) offers a more comprehensive perspective on how complementary intergroup and intragroup processes affect social perceptions and, ultimately, behaviour. Previous research has shown that strongly fused people perceive their group to be more formidable in *intergroup conflicts* and are more willing to adopt aggressive intergroup orientations (Vázquez et al., 2020). Here we revealed that greater identity fusion between groups in a *cooperative context* increases the envisioned formidability of the coalition when the outgroup is included (vs. excluded).

Our research has some limitations that could be addressed in future studies. First, participants could have found it difficult to make estimates of a hypothetical situation that could not be practically implemented (i.e., excluding some group of immigrants from the EU). Although it is not clear how this procedural element could account for the differences between total and partial formidability as a function of group status (Study 1) and recategorization interventions (Studies 2–3), to enhance mundane realism, future work might focus on a more realistic context (e.g., admission of new countries into NATO). Such work would also be useful for establishing the generalizability of our findings with other groups.

Another limitation is that in the outgroup considered in this research, Eastern European immigrants, low status is combined with low power. Artificial groups could be created to distinguish the effect of power from status (see, for example, Boldry & Gaertner, 2006) on the perceived strength of a coalition. Future studies can promote further understanding of whether, when, and why the inclusion of low-status groups to a coalition might increase its total formidability. Whereas in Studies 2 and 3 we focused on aspects of the relationship among groups in the alliance (in terms of recategorization), it is also possible that the types of resources that low-status or low-power groups bring to the alliance could enhance formidability. For example, low-status countries may increase an alliance's formidability when they bring unique conflict-relevant capabilities (e.g., knowledge of the vulnerabilities of an adversary).

Another potentially productive future direction would be to consider formidability with a broader lens. Conceptually and operationally, the current research focused on physical formidability. Given our conceptual focus on this particular facet of formidability, unlike most of the research on this topic, we provided participants with a definition of physical formidability to have them focus on the material factors that contribute to the will to fight. However, we acknowledge that physical formidability can include non-material

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aspects, such as prestige (see Fessler et al., 2023). Thus, based on the research of Fessler and colleagues about multiple factors in formidability reflected in size-and-strength representation measures, future research might include measures of other aspects of formidability and test their effects comparatively in the context of intergroup coalition formation. For example, as noted earlier, formidability can take the form of spiritual formidability (Gómez et al., 2017, 2023), which represents "the conviction and nonmaterial resources (values, strengths of beliefs, and character)" that can increase the effectiveness of an individual, group, or coalition to effectively deal with adversaries (Tossell et al., 2022, p. 1). Spiritual and physical formidability are distinctive concepts that can have independent effects on outcomes such as willingness to fight or make self-sacrifices for one's group. Indeed, having greater spiritual formidability may allow groups to repel threats from more physically formidable entities. It is important to note, however, that physical and spiritual formidability, and any other dimension explored in the future, are included in the original formidability representation hypothesis described originally by Fessler et al. (2012).

Whereas the main outcome measure in the current studies was perceived physical formidability, future work might consider the consequences of perceiving higher formidability in a coalition. In Study 3, the recategorization manipulation increased willingness to collaborate with Eastern European immigrants on behalf of Europe (see Appendix S1), which was mediated by identity fusion and formidability. Future studies might examine whether, perceiving more combined formidability in coalitions might promote more cooperative behaviour among allies and/or competitive or aggressive orientations toward other groups. Behavioural measures such as the responses to social dilemmas, as the prisoner's dilemma or dictator game (see Van Lange et al., 2014) could be helpful to check whether self-reported perceptions of formidability have a behavioural intergroup impact.

Finally, we have focused on a large coalition such as the EU. Future studies could determine whether the factors studied here also contribute to the perceived formidability of smaller coalitions. In principle, there is no reason to rule out the possibility that the status of the groups and the way in which their members categorize themselves and others could also influence the perception of formidability in smaller coalitions. However, it is possible that interpersonal factors may also modulate the formidability of smaller coalitions, particularly when individual identities are salient.

CONCLUSION

To properly recruit allies and form and maintain coalitions, people assess how others contribute to the combined formidability of the coalition. Taken together, the findings from our three studies, which examined some of the factors that influence such estimations of coalitional formidability in the context of the EU, reveal that both status factors and social identity processes may play prominent roles. Further integration of evolutionary and psychosocial perspectives could substantially improve our understanding of the mechanisms that regulate coalition formation and maintenance.

AUTHOR CONTRIBUTIONS

Alexandra Vázquez: Conceptualization (equal), investigation (lead), Methodology (equal), formal Analysis (lead), writing – original draft preparation, and writing – review & editing (equal). **John F. Dovidio:** Conceptualization (equal), investigation (supporting), methodology (equal), and writing – review & editing (equal). **Ángel Gómez:** Conceptualization (equal), investigation (supporting), methodology (equal), formal analysis (supporting), resources, and writing – review & editing.

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CONFLICT OF INTEREST STATEMENT

None to declare.

DATA AVAILABILITY STATEMENT

The data, materials and code are available at: https://osf.io/9g4n5/?view_only=a09fc39c5a8044fdb957a584e1d7b8bf.

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