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Routledge
Taylor & Francis Group

Society & Natural Resources

An International Journal

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/usnr20

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To cite this article: Stacey Mac Donald & Henk Staats (2022) Conservation as Integration: Desire to Belong as Motivation for Environmental Conservation, Society & Natural Resources, 35:1, 75-91, DOI: 10.1080/08941920.2021.2023244

To link to this article: https://doi.org/10.1080/08941920.2021.2023244

SOCIETY & NATURAL RESOURCES
2022, VOL. 35, NO. 1, 75–91
https://doi.org/10.1080/08941920.2021.2023244

Conservation as Integration: Desire to Belong as Motivation for Environmental Conservation

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ABSTRACT

Considering the growing need to protect nature and acknowledging that not everyone has intrinsic desires to do so, what happens when social, community-based motives are seen to align with pro-environmental behavior? Specifically, the hypothesis addressed in this study is that individuals engage in actions to protect the natural environment at least partly to improve their sense of belonging to their community. To test this hypothesis, we distributed an online survey in rural regions of the UK. We found that particularly people who are concerned about their reputation and have a strong desire to belong engage in conservation actions. Our findings support the hypothesis that people conserve the environment to enhance their sense of belonging and illustrate that there are different additional processes at work that affect the relationship between desire to belong and engagement in conservation actions.

ARTICLE HISTORY
Received 19 November 2020
Accepted 14 December 2021

KEYWORDS
Belonging; community; environmental actions; integration; motivation

Introduction

The need to belong is one of the most important, persistent motivations of behavior (Baumeister and Leary 1995). The need to belong represents the need for "… frequent, non-aversive interactions within an ongoing relational bond … human beings have a pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships" (Baumeister and Leary 1995, 497). Fulfilling this need gives people a sense of meaning and identity, and strengthens their self-esteem, and overall wellbeing (Baumeister and Leary 1995; Gabriel 2021). One way to fulfill this need is to engage in pro-social behavior (Batson 1998; Nolan and Schultz 2013). Pro-social behavior can be defined as "a broad range of acts, including helping behavior, altruism, cooperation and solidarity intended to benefit other people" (Cuadrado, Tabernero, and Steinel 2015, 1). One category of pro-social behavior that has received considerable attention over the past years is behavior intended to help conserve the natural environment (e.g., Bamberg and Möser 2007; Clayton et al. 2016; Gifford and Nilsson 2014; Nolan and Schultz 2013). Considering that trying to conserve the natural environment is generally seen as positive and encouraged by societies, the question arises if people also engage in efforts to conserve the natural environment to fulfill their need to belong.

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Belonging and Conservation Behavior

There are several bodies of research that examine the link between belonging and environmental conservation behavior, in which researchers state that a feeling of belonging to a community may be a cause to perform conservation behavior that has beneficial consequences for the community (e.g., Farrow, Grolleau, and Ibanez 2017; Hernández et al. 2010; Kollmuss and Agyeman 2002; Sloot, Jans, and Steg 2019). In this study, we offer a different causal relationship between belonging and conservation behavior, where we will argue that there is reason to expect that specific individual and social conditions may favor the execution of conservation behavior as a means to become feeling part of a community.

The main body of research underlying this idea involves intragroup dynamics and social norms. Previous research has shown that social norms affect many kinds of behavior, including conservation behavior, e.g., littering behavior (e.g., Cialdini, Reno, and Kallgren 1990), recycling (Burn and Oskamp 1986), energy consumption (Schultz et al. 2007), and pro-environmental behavior in general (e.g., Farrow, Grolleau, and Ibanez 2017). One reason people abide by social norms is to fulfill their need to belong (Cuadrado, Tabernero, and Steinel 2015). The need to belong lets people make great efforts to invest in building relationships with others and is related to people's adherence to group norms (Steinel et al. 2010). People also engage in conservation behavior to fit in when this behavior conforms to the social norms of the individual's reference group (Farrow, Grolleau, and Ibanez 2017). The influence of social norms on behavior is usually investigated on the level of specific, significant social groups (e.g., friends, relatives, the neighborhood), as the consequences of nonconformity with these reference groups usually are clearer and more evident (see Festinger 1954).

However, Culiberg and Elgaaied-Gambier (2016) found that the influence of social norms on both a specific (i.e., from relevant others like friends and family) *and* general (i.e., country) level can indeed affect people's engagement in environmental conservation behavior. Their findings imply that it is indeed possible that adhering to country- (or community) level norms affect people's engagement in conservation behavior as the goal. This corresponds with the work of Delmas and Lessem (2014), who concluded that public information motivates consumers to participate in green behavior so that they benefit from having a "green reputation". The authors define public information as "information about a specific agent's behavioral impact that is publicly disclosed, allowing environmentally friendly behavior to act as a signal of "green virtue". (3). Public information is thus susceptible to the evaluation of others, which can impact the extent to which individuals are accepted, welcomed, or praised in a community (i.e., affecting their sense of belonging). Their study found that reputational benefits, i.e., society's positive assessment of a person because of their engagement in conservation behavior, can motivate people's participation in said behavior.

In sum, the discussed literature presents arguments for the proposition that people may engage in conservation behavior to fulfill their desire to belong to a community. However, we believe that this motive will primarily manifest itself as an explicit behavioral motive under certain conditions, as elaborated in the paragraphs below.

Conservation as Integration, But Only If…

Condition 1

Behavior is visible to other members of the community Not every effort to protect the natural environment may be as effective to enhance a person's sense of belonging. Conservation behavior for which this can be hypothesized to apply are publicly visible actions (Kollmuss and Agyeman 2002). Examples of these are participation in clean up events, tree planting events, or nature awareness campaigns, and include political activities.

Because of their visibility to others, these actions are more susceptible to others' views and opinions within a community than private environmental behavior (e.g., actions to reduce energy consumption in the home). Therefore, this may be a way to receive approval from the community and improve a persons' sense of belonging. This is in line with Steinel et al. (2010), arguing that publicly endorsing group norms can be useful for peripheral group members who want to improve their position within the group. Hence, improving one's sense of belonging might function as a motive for engagement, especially for public actions. Moreover, in a recent study, Sparks et al. (2021) found that publicly visible environmental behavior has different predictors than private environmental behavior. Specifically, they concluded that participants' environmentalist identity was a stronger predictor for public conservation behavior, than a person's connectedness to nature while the latter was the strongest predictor of private behavior.

This study focusses on behavior that can be classified as environmental conservation behavior in the public sphere. More specifically, we consider public actions with a collective impact on environmental issues, for example, actively participating in community conservation awareness events (Alisat and Riemer 2015), from here on referred to as environmental actions.

Condition 2

The need to belong is salient We argue that the need to belong must be salient to act as a motive for engagement in environmental actions. It can become salient due to contextual, but also due to more personal factors. Regarding the former, the need to belong is often more salient in contexts where people are highly dependent on each other. This argument has been presented by Prezza and Costantini (1998) and later by Obst, Smith, and Zinkiewicz (2002) who argue that a smaller size of a community can result in a stronger sense of belonging, ties, support and influence and interdependence. We agree, and reason that small, relatively isolated communities are especially relevant to study this relationship. For one, people within these communities are more familiar with each other. Second, they are also more dependent on each other as external resources (such as (social) services, food, supplies or materials and income) might be more challenging to come by. While being familiar with each other is not similar to being dependent on each other, it does increase the importance of belonging in relation to having a good reputation (being accepted, approved of, liked). Moreover, Kramer and Brewer (1984) demonstrated that belonging processes play a more prominent role when group identity processes are more salient. Specifically, they stated that "when belongingness is stimulated by making the group identity salient, people are more likely to restrain their

self-interested tendencies and instead cooperate with others for the greater good of the group." (Baumeister and Leary 1995, 519). Based on the aforementioned, we focused our study on people residing in small (population of less than 50.000), isolated, rural communities.

Regarding personal factors, we expect the need to belong to be especially salient among people who feel they do not belong to the community. If people feel they do not belong to a group but have the desire to belong, they are more likely to engage in behavior that can realize their currently absent sense of belonging (Steinel et al. 2010; Baumeister and Leary 1995). Steinel et al. (2010, 790), for example, found "that the need to belong is especially important for people who occupy a peripheral position in their group". According to their research, peripheral group members only adhere to group norms when they have a strong need to belong. Building on these findings, we reason that especially for those who currently do not have a sense of belonging but have a strong desire to belong, doing something for the community to enhance their sense of belonging could be of great importance. Considering the importance of the natural environment for a community's wellbeing and the salience of the need to belong, engaging in activities that help protect the natural environment might be a good way to fulfill this need.

Condition 3

Behavior is in line with social norms Regarding environmental actions that can help fulfill a person's need to belong, and when examining this need as a predictor for conservation actors, the discussed literature clearly suggests that this behavior must be visible to and in line with the reference group's social norms. Despite the positive connotation of environmental actions, protecting the natural environment is not necessarily the norm in all communities. It may even go against the ways people normally behave and feel they should behave (e.g., Alisat and Riemer 2015; Byrka, Kaiser, and Olko 2017). Therefore, it is important to distinguish between types of environmental actions that may be more or less in line with community norms. For example, protesting development projects that are harmful to the environment but beneficial for economic development might not be appreciated by all community members. The behavior selected to investigate the main research question reflects these considerations. We focus on environmental actions that aim to conserve environmental quality displayed in public, but that may differ in local communities' acceptance. Actions that will generally be considered less controversial may be more instrumental in striving to fulfill a desire to belong. Examples of these actions are participating in clean up events and the restoration of ecosystems, protection of endangered species, combatting invasive species, or recycling campaigns.

Concerning social norms, we argue that the aforementioned considerations are especially prevalent among people who care about others' opinions. This factor is known in the literature as "reputational concern," the extent to which people are concerned about their reputation (Emler 1990). We consider this to be an important factor in our analysis as reputational concern derives from a social mechanism which is closely related to a person's sense of belonging (e.g., Cavazza, Pagliaro, and Guidetti 2014; De Cremer 2002; De Cremer and Tyler 2005; Pagliaro et al. 2016). As mentioned previously, social

norms are reliable determinants of conservation behavior and can affect people for different reasons, namely, people want to fit in and thus adhere to social norms, avoid social disapproval, or seek social esteem, to experience a sense of belonging. A person's reputational concern can be an indication of his/her sensitivity to certain social norms, which is a key determinant of the impact of a social norm on behavior (e.g., Bénabou and Tirole 2006; Cialdini, Reno, and Kallgren 1990; Farrow, Grolleau, and Ibanez 2017). Therefore, we argue that the extent to which individuals are concerned about their reputation within their community may affect behavior that is significant for the group. This tendency may qualify the relationship between their desire to belong and their engagement in environmental actions.

Overview of Hypotheses

We expect that a stronger desire to belong to a community relates to more participation in environmental actions (hypothesis-1). We also expect that the effect of desire to belong on participation in environmental actions is stronger among those who have a lower current sense of belonging (hypothesis-2). Lastly, we expect that the effect of desire to belong on participation in environmental actions is stronger for those who have stronger reputational concerns (hypothesis-3).

We present findings from a questionnaire study performed focusing on individuals residing in small and, to a certain extent, isolated communities in the United Kingdom (UK). This choice was made to see whether the dynamic investigated indeed is present within these argued optimal conditions. We included a more elaborate explanation in the method section of the paper.

Method

An online questionnaire was developed and distributed through the online database Prolific Academic (PA). The questionnaire allowed participants to reflect on their motives behind their engagement in environmental actions in relation to their sense of belonging within the community.

Participants & Procedure

To ensure the presence of characteristics of and social dependency within small communities (i.e., small scale, isolated, the familiarity of residents) participants were initially recruited using a preselection survey. This survey consisted of a few questions regarding residence and was sent to 2000 members of the PA database in the UK's rural regions. Only participants who stated they lived in a hamlet, a village, or a small town (<50.000 inhabitants) were included. Based on these criteria, 504 eligible participants remained out of the pool of 2000 respondents, of which 400 were requested to complete the full questionnaire. Participants received payment (£12.05/h) for the completion of each survey according to PA's payment guidelines. All responses were treated confidentially. Ethical approval was granted by the Leiden University Psychology Ethics Committee on the 16th of December 2019 Application number: (CEP19-1125/559).

Table 1. Overview of behavior measures.

Cluster		Items	Scale	α
EAS Awareness	1.	Consciously made time to be able to work on environmental issues.	0 = never, 4 = frequently	.81
	2.	Participated in nature conservation efforts.		
	3.	Used on-line tools to raise awareness about environmental issues.		
	4.	Participated in a community event that focused on environmental awareness.		
	5.	Helped to organize an educational event related to environmental issues.		
	6.	Helped to organize a community event that focused on environmental awareness.		
	7.	Talked with others about environmental issues.		
	8.	Educated myself about environmental issues.		
EAS Political	1.	Personally, wrote to or called a politician/ government official about an environmental issue.	0 = never, 4 = frequently	.81
	2.	Financially supported an environmental cause.		
	3.	Used traditional methods to raise awareness about environmental issues.		
	4.	Became involved with an environmental group or political party		
	5.	Participated in an educational event related to the environment.		
	6.	Helped to organize a boycott against a company or government engaging in environmentally harmful practices.		
	7.	Spent time working with a group/organization that deals with the connection of the environment to other societal issues such as justice or poverty.		
EAS Protest	1.	Helped to organize an environmental protest/rally.	0 = never, 4 = frequently	.74
	2.	Took part in a protest/rally about an environmental issue.		
	3.	Helped to organize a petition for an environmental cause.		

($N = 399$).

Measures

Demographics

Participants were asked to report their age, gender, educational level, and length of residence.

Behavior Measure

Environmental actions were measured with the Environmental Action Scale (EAS) by Alisat and Riemer (2015). The EAS consists of 18 items that measure a person's engagement in public actions with a collective impact on environmental issues (e.g., "Participated in a community event that focused on environmental awareness"). For the EAS items, respondents indicated how often they engaged in the 18 actions (see Table 1) in the past 6 months on a five-point scale (0 = never, 4 = frequently). A pilot study (Mac Donald, forthcoming) showed that the items could be arranged in three clusters of behavior with good internal consistency, namely: awareness actions, political actions, and protest actions. Awareness actions reflect the involvement in creating awareness and educating others about environmental issues; political actions reflect actions within governmental or political spheres; and protest actions reflect engagement

in protests and rallies. These same clusters also demonstrated strong internal consistency in the current study, as can be seen by the high alphas presented in Table 1. The scores of each of the behavioral items were averaged per component to produce separate scores of the three categories of environmental actions.

Psychological Measures

Table 2 gives an overview of all psychological measures Five behavioral belief statements were included which reflect the belief that participants' engagement can improve their sense of belonging to the local community. These behavioral outcome statements served as a direct measure to test hypothesis-1 ($\alpha = .94$).

Participants' desire to belong to the community was measured using responses to four questions, based on the "group opinion concern" measure from Beersma and Van Kleef (2011) and the "three factor social identity" measure from Cameron (2004). Items were averaged to create a "desire to belong" score ($\alpha = .86$).

Two measures of sense of belonging to the community were used. A single item measure asked participants to rate the extent to which they considered themselves *local* within their place of residence. Because it is debatable if feeling local also reflects a sense of belonging, the Psychological Sense of Community (PSOC) scale (Jason, Stevens, and Ram 2015) was included. The PSOC scale consists of nine statements. The PSOC items were averaged to produce a single measure of the psychological sense of community ($\alpha =. 90$).

We included two items to determine a participant's reputational concern, derived from the 'group opinion concerns' measure developed by Beersma and Van Kleef (2011). The items were averaged to create a reputational concern-score ($\alpha = .76$).

Lastly, we included a single item normative belief measure to determine the extent to which participants believed their engagement in environmental actions would be approved of by the community. Again, measures using more than one item were averaged to produce a single score, and all produced good reliability scores.

To test for the moderating effect of one's current sense of belonging on the relation between one's desire to belong and efforts to protect the natural environment (hypothesis-2), two interaction terms were calculated by multiplying the scores of the desire to belong measure with each of the sense of belonging measures (i.e., desire to belongXself-consideration as local; desire to belongXPSOC). The interaction effects between desire to belong and reputational concern were calculated to test the moderating effect of reputational concern on desire to belong and the efforts to protect the natural environment (desire to belong X reputational concern) (Field 2013). The interaction terms were based on the mean-centered scores to increase the interpretability of the interactions.

Results

Socio-Demographic Background of the Participants

All participants (145 males, 254 females) currently resided in the UK. On average, participants lived in their current residence place for 16.21 years ($SD = 14.29$). Participants had a mean age of 40.87 years ($SD = 13.23$).

Table 2. Overview of psychological measures.

Measure		Items	Scale	α
Behavioral beliefs	1.	By actively protecting the natural environmental of [place], you get to interact with the community of [place].	1 = Strongly Disagree,	.94
	2.	Actively protecting the natural environment of [place] helps to build social relationships with others from [place].	5 = Strongly Agree	
	3.	Actively protecting the natural environment of [place] makes you feel included in the community of [place].		
	4.	Actively protecting the natural environment of [place] makes you feel more closely connected to the community of [place].		
	5.	Actively protecting the natural environment of [place] gives you the feeling you are part of [place].		
Desire to belong	1.	How much do you want to be a member of the local community of [place]?	1 = not at all,	.86
	2.	How important or unimportant is it to you that the local community of [place] accepts you?	5 = very much	
	3.	How important or unimportant is it to you that the local community of [place] has a positive evaluation about you?		
	4.	How often do you think about being (or becoming) a member of the local community of [place]?		
Sense of belonging (A)	1.	Do you consider yourself to be a local of [place]?	1 = not at all, 5 = very strongly	–
PSOC	1.	I think the local community of [place] is a good community.	1 = Strongly Disagree,	.90
	2.	I am not planning on leaving this local community of [place].	7 = Strongly Agree	
	3.	For me, the local community of [place] is a good fit.		
	4.	Residents of [place] can depend on each other in this local community.		
	5.	Residents of [place] can count on receiving help from other residents if they need it.		
	6.	Residents of [place] can safely share their opinions or ask for advice.		
	7.	The local community of [place] is important to me.		
	8.	I have friends in the local community of [place].		
	9.	I feel good helping the local community of [place] and the residents.		
Reputational concern	1.	How much or little do you think about what the local community might think about you when you are actively protecting the natural environment of [place]?	1 =, not at all, 5 = A great deal	.76
	2.	How much or little do you take into consideration what the local community of [place] might say about you when you are actively protecting the natural environment of [place]?		
Normative beliefs	1.	Does the local community generally approve or disapprove of efforts to actively protect the natural environment of [place]?	1 = Completely disapprove, 5 = Completely approve.	–

($N = 399$).

Testing Our Hypotheses

First, inter-correlations between the different types of environmental actions (awareness, political, and protest) were explored (Table 3). We elaborate on these correlations in the paragraphs below.

First, it is relevant to know if the respondents believe if environmental actions are indeed approved by their community. We checked for this using the normative belief item. The high mean for the normative belief item ($M = 4.01$) indicates that most people indeed believe engaging in conservation behavior is highly approved by other members of our respondents' community.

Then we looked at the outcomes of the direct behavioral belief measure (asking participants if they protect the environment to improve their sense of belonging within the community. The relatively high mean score ($M = 3.63$, $SD = .93$) indicates that participants generally believe that engagement in environmental actions is beneficial for one's sense of belonging in the community[1]. The behavioral belief measure also significantly and positively correlated with EAS Awareness ($r = .34$, $p < .001$) and EAS political ($r = .19$, $p < .001$). These correlations suggest that people who believe that their efforts contribute to becoming a community member perform environmental actions more frequently. Significant correlations were also found between the behavioral belief measure and desire to belong ($r = .51$, $p < .001$), suggesting that people with the desire to belong believe environmental actions can help fulfill their sense of belonging. Not surprisingly, all EAS subscales strongly correlate with each other. EAS Awareness positively and significantly correlated with EAS political ($r = .77$, $p < .001$) and EAS protest ($r = .54$, $p < .001$), and the correlation between EAS political and EAS protest was significant and positive as well ($r = .77$, $p < .001$).

The desire to belong measure significantly correlates with all behavior measures (rEAS Awareness = .40, $p < .001$; rEAS Political = .32, $p < .001$; rEAS Protest = .21, $p < .001$). These positive correlations imply that a stronger desire to belong is related to more engagement in environmental actions. This finding, combined with the significant positive correlation found between the desire to belong and the behavioral belief measure, suggests that people who want to belong to the community also engage in more environmental actions, in line with hypothesis-1.

Next, we looked at the correlations between the desire to belong, the two sense of community measures, and the reputational concern measure to explore our second and third hypotheses. We found that the desire to belong significantly and positively correlates with the two sense of belonging measures (rSelf Local = .44, $p < .001$; rPSOC = .69, $p < .001$), suggesting that people with a strong sense of community also have a greater desire to belong to their respective community. Lastly, we found a significant positive correlation between the desire to belong and reputational concern ($r = .52$, $p < .001$). This suggests that greater concern about one's reputation is related to a stronger desire to belong to the community and provides some preliminary evidence that indeed the effect of desire to belong on environmental actions is moderated by one's reputational concern (hypothesis-3).

A series of hierarchical regression analyses were conducted to test the direct relationship between desire to belong and engagement in environmental actions and the

Table 3. Means, standard deviations and correlations.

	N	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Behavioral belief: protect nature to belong	400	3.63	.93	1													
2. EAS Awareness	400	2.00	.68	.34**	1												
3. EAS Political	400	1.40	.57	.19**	.77**	1											
4. EAS Protests	400	1.20	.52	.08	.54**	.77**	1										
5. Age	400	40.87	13.23	−.02	−.09	−.14**	−.09*	1									
6. Gender	400	1.64	.49	.07	.11*	.06	−.03	−.11*	1								
7. Education	399	4.29	1.26	.12*	.12*	.09	−.04	.09	−.11*	1							
8. Income	369	3.10	1.41	−.03	.08	.05	−.02	.06	−.03	.10	1						
9. Years of Residence	400	16.21	14.29	−.06	−.06	−.03	.01	.23**	−.05	−.06	.08	1					
10. Desire to belong	400	2.62	.94	.51**	.40**	.32**	.21**	.07	.06	.06	.09	.03	1				
11. Self consideration as local	400	3.33	1.27	.19**	.13**	.12*	.11*	−.03	−.06	−.11*	.13*	.45**	.44**	1			
12. PSOC	400	3.62	.79	.52**	.29**	.18**	.08	.10*	.02	−.00	.13*	.10*	.68**	.49**	1		
13. Reputational concern	400	2.00	.95	.27**	.31**	.32**	.25**	−.23**	.07	−.02	.07	−.06	.52**	.21**	.34**	1	
14. Normative Belief	400	4.01	.74	.34*	.13*	.01	−.05	.08	.08	−.03	.05	−.00	.35**	.21**	.47**	.11*	1

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

moderating effects of belonging (hypothesis-2) and reputational concern (hypothesis-3) on this relationship. We also entered age, gender, education, and years of residence at stage one of the regressions to control for possible demographic differences in environmental actions. Table 4 presents the full details of each regression model. The regressions' outcome is discussed separately for each behavioral outcome (EAS Awareness, EAS Protest, EAS Political).

EAS awareness In the first step of the equation only gender ($\beta = 0.12$, $p = .017$) and education ($\beta = 0.14$, $p = .004$) contributed significantly to the regression model (F (4,394) = 4.30, $p = .002$) and accounted for 4.2% of the variation for EAS awareness. In step 2, desire to belong ($\beta = .30$, $p < .01$) and reputational concern ($\beta = .11$, $p = .042$) were found to be significantly associated with EAS Awareness. The additional proportion of variance explained by these variables in engagement in EAS Awareness actions was 17%. This change in R2 was significant, F (4,390) = 21.07, $p < .001$. Lastly, in the third step, the three interaction effects were added to the model. Only the interaction between desire to belong*reputational concern significantly affected EAS Awareness ($\beta = .22$, $p < .001$). Reputational concern no longer remained a significant predictor for EAS Awareness, but desire to belong did ($\beta = .33$, $p < .001$). The interaction terms' addition significantly improved the proportion explained variance by 4.3% in EAS Awareness, F (3, 387) = 7.50, $p < .001$.

EAS political In the first step Age ($\beta = -.14$, $p = .008$) and Education ($\beta = .11$, $p = .037$) contributed significantly to the regression model (F (4, 394) = 3.13, $p = .015$) and accounted for 3.1% of the variation for EAS Political. The addition of desire to belong, the two sense of belonging variables, and the reputational concern variable explained a significant additional 12.6% of variation in EAS Political, F (4, 390) = 14.52, $p < .001$. Again, both desire to belong ($\beta = .27$, $p < .001$) and reputational concern ($\beta = .17$, $p = .003$) were significantly associated with EAS Political. Lastly, the three interaction effects were added to the model. Similar to the regression performed for EAS Awareness, only the interaction between desire to belong*reputational concern had a positive, significant effect on EAS Political ($\beta = .23$, $p < .001$). Desire to belong ($\beta = .31$, $p < .001$) remained a significant predictor for EAS Political, but reputational concern alone did not. The interaction terms' addition explained a significant additional 4.3% of variation in EAS Political F (3, 387) = 6.97, $p < .001$.

EAS protest The demographic variables entered in the first step of the equation appeared unrelated to EAS Protest behavior (F (4, 394) = 1.26, $p = .286$). The addition of desire to belong, the two sense of belonging variables, and the reputational concern variable explained an additional significantly improved model (F (8, 390) = 4.54, $p < .001$) and explained 8,5% proportion of variance in EAS Protest. Again, both desire to belong ($\beta = .19$, $p = .011$) and reputational concern ($\beta = .17$, $p = .005$) were significantly associated with EAS Protest. Of the three interaction variables entered in step 3 of the question, only the interaction between a desire to belong*reputational concern had a positive, significant effect on EAS Protest ($\beta = .13$, $p = .018$). The interaction terms explained an additional 1.7% of EAS Protest variation, but this change in R^2 was not significant, F (3, 387) = 2.42, $p = .066$.

Table 4. Hierarchical multiple regression analyses predicting conservation actions.

		Awareness					Political					Protest				
Step	Predictor variable	R^2	ΔR^2	Model 1β	Model 2β	Model 3β	R^2	ΔR^2	Model 1β	Model 2β	Model 3β	R^2	ΔR^2	Model 1β	Model 2β	Model 3β
1	Age	.04**		−09	−.10	−10	.03*		−.14**	−.12*	−.11*	.01		−.11*	−.07	−.06
	Gender			.12*	.09	.11*			.06	.03	.04			−.04	−.06	−.06
	Education			.14**	.12**	.13**			.11*	.09	.09			−.03	−.04	−.04
	Years of Residence			−.03	−.02	−.03			.00	.01	−.01			.03	.02	−00
2	Desire to belong	.21**	.17**		.30**	.33**	.16**	.13**		.27**	.31**	.09**	.07**		.19*	.23**
	PSOC				.08	.09				−.05	−.06				−.12	−.15*
	Self-consideration as local				−.04	−.04				−.02	.00				.03	.05
	Reputational concern scale				.11*	.03				.17**	.08				.17**	.12
3	PSOC*Desire to belong	.26**	.04**			.01	.20**	.04**			−.08	.10**	.017			−.11
	Self-local*Desire to belong					−.02					.03					.05
	Reputational concern scale*Desire to belong					.22**					.23**					.11*

$N = 399$; **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

Table 5. PCA factor loadings for items of PSOC and Desire to Belong measure.

Item	Factor 1	Factor 2
PSOC 1	**.75**	.35
PSOC 2	**.66**	.11
PSOC 3	**.80**	.29
PSOC 4	**.78**	.30
PSOC 5	**.79**	.29
PSOC 6	**.64**	.28
PSOC 7	**.64**	.58
PSOC 8	**.58**	.19
PSOC 9	**.57**	.49
Desire to belong 1	.43	**.76**
Desire to belong 2	.24	**.87**
Desire to belong 3	.26	**.80**
Desire to belong 4	.21	**.84**

The bold values simply indicates that indeed P SOC and desire to belong variables load of different factors.

Discussion

We found that there is a direct effect of desire to belong on people's engagement in environmental actions (hypothesis-1). The significant, positive correlations and Betas for the desire to belong found in the second step of the hierarchical regressions imply that a stronger desire to belong relates to more engagement in environmental actions. Moreover, this effect remained after adding the interaction effects into the regression (step 3) for the EAS Awareness and EAS Political Behavior scales. We also found that the effect of desire to belong on participation in environmental actions is moderated by a person's reputational concerns, confirming hypothesis-3. Specifically, the results show that stronger reputational concerns in combination with a strong desire to belong relates to even more engagement in all three types of environmental actions. Finally, no evidence was found that the effect of desire to belong on participation in environmental actions is stronger for those who have a lower current sense of belonging (hypothesis-2).

Given that the need to belong is an important motivator of behavior (Baumeister and Leary 1995), we set out to investigate if engagement in conservation behavior is considered a motivator to integrate within a community. As the intensity of this need can vary among people, we looked at people's desire to belong which acknowledges that not everyone has an equally strong need to belong.

We found evidence for the *direct* relationship between people's desire to belong and the extent to which they engage in environmental actions. While we cannot determine the causality of this relationship with our study and analysis, this finding does suggest that a stronger desire to belong might lead to more engagement in environmental actions, especially when people are concerned about their reputation. The reverse, performing environmental actions leading to a stronger desire to belong seems conceptually implausible. Apart from the findings in correlational analyses it was encouraging to see that participants generally agreed with the statement that directly reflected our central research question, namely the idea that engaging in environmental actions can lead to a stronger sense of belonging in a community.

These findings strongly suggest that the effect of desire to belong on people's engagement in environmental actions is especially imminent when the need to belong is salient –because they are concerned about their reputation. This finding supports the body of

work, arguing that reputational concerns are essential indicators of social norms' impact on people's behavior (e.g., Farrow, Grolleau, and Ibanez 2017). In addition, we found evidence for the direct relationship between people's desire to belong and their engagement in environmental actions, suggesting that people who want to belong to the community also engage in more environmental actions.

Finally, it should be noted that we focused on publicly visible actions, and for good reasons: Behavior displayed in public should be a more effective lever to create social bonds. However, even within the category of publicly visible actions, relationships appear to be different. The EAS Awareness actions' effects were more substantial than the effects for EAS Political and Protest actions. This finding could mean that EAS Awareness actions are generally more accepted and supported by the community and thus believed to be better able to fulfill a person's need to belong. This idea could be expanded to include other conservation behavior focused on the household but may have more or less visibility. For example, installing solar panels has high visibility compared to indoor actions, like reducing shower time. It would be interesting to see whether these kinds of actions are also considered helpful to create bonds in a community and performed for that reason. Sloot, Jans, and Steg (2019) indeed concluded in an extensive study that compared to financial motives, communal (i.e., social) and environmental motives were more important drivers for participation in communal energy initiatives, which are a type of public environmental action.

These are questions for the future, just as perfecting this research further by using other measures than self-reports of behavior, like observations or statistics on organizational memberships. Therefore, a truly valuable next step would be to conduct (field)-experiments to assess the causal direction of the relationship between the desire to belong and conservation behavior with more certainty than is possible with correlational findings.

Despite these limitations, the current study provides directions for mobilizing people to protect the natural environment in small communities. This research can inform planners, immigrant associations, and other community organizations that aim to integrate people within a community. In conclusion, the current study complements existing knowledge that people do not only engage in environmental actions out of concern for other people, species, or ecosystems (e.g., Bamberg and Möser 2007) and illustrates that one's desire to belong can be a motive for environmental actions.

Note

1. As the items of the desire to belong and PSOC measure shared some similarities and were strongly correlated ($r = .68$, $p < .01$), we conducted a principal component analysis (PCA) with varimax rotation to see whether the two measures address the same or different concepts. The PCA identified two clearly distinct factors, including the items of the desire to belong scale, the other the items of the PSOC scale (see Table 5). Hence, we can conclude that the two measures indeed each address a unique concept.

Funding

This work was supported by the Netherlands Organization for Scientific Research (NWO), under Grant 858.14.013.

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author, S. Mac Donald, upon reasonable request.

References

Alisat, S., and M. Riemer. 2015. The environmental action scale: Development and psychometric evaluation. *Journal of Environmental Psychology* 43 :13–23. doi: 10.1016/j.jenvp.2015.05.006.

Bamberg, S., and G. Möser. 2007. Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behavior. *Journal of Environmental Psychology* 27 (1):14–25. doi: 10.1016/j.jenvp.2006.12.002.

Batson, C. D. 1998. Altruism and prosocial behavior. In *Handbook of social psychology*, ed. D. T. Gilbert, and S. T. Fiske, 282–316. Boston: McGraw-Hill.

Baumeister, R. F., and M. R. Leary. 1995. The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin* 117 (3):497–529. doi: 10.1037/0033-2909.117.3.497.

Beersma, B., and G. A. Van Kleef. 2011. How the grapevine keeps you in line: Gossip increases contributions to the group. *Social Psychological and Personality Science* 2 (6):642–9. doi: 10.1177/1948550611405073.

Bénabou, R., and J. Tirole. 2006. Incentives and prosocial behavior. *American Economic Review* 96 (5):1652–78. doi: 10.1257/aer.96.5.1652.

Burn, S. M., and S. Oskamp. 1986. Increasing community recycling with persuasive communication and public commitment. *Journal of Applied Social Psychology* 16 (1):29–41. doi: 10.1111/j.1559-1816.1986.tb02276.x.

Byrka, K., F. G. Kaiser, and J. Olko. 2017. Understanding the acceptance of nature-preservation-related restrictions as the result of the compensatory effects of environmental attitude and behavioral costs. *Environment and Behavior* 49 (5):487–508. doi: 10.1177/0013916516653638.

Cameron, J. E. 2004. A three-factor model of social identity. *Self and Identity* 3 (3):239–62. doi: 10.1080/13576500444000047.

Cavazza, N., S. Pagliaro, and M. Guidetti. 2014. Antecedents of concern for personal reputation: The role of group entitativity and fear of social exclusion. *Basic and Applied Social Psychology* 36 (4):365–76. doi: 10.1080/01973533.2014.925453.

Cialdini, R. B., R. R. Reno, and C. A. Kallgren. 1990. A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology* 58 (6):1015–26. doi: 10.1037/0022-3514.58.6.1015.

Clayton, S., P. Devine-Wright, J. Swim, M. Bonnes, L. Steg, L. Whitmarsh, and A. Carrico. 2016. Expanding the role for psychology in addressing environmental challenges. *American Psychologist* 71 (3):199–215. doi: 10.1037/a0039482.

Cuadrado, E., C. Tabernero, and W. Steinel. 2015. Determinants of prosocial behavior in included versus excluded contexts. *Frontiers in Psychology* 6: 2001.

Culiberg, B., and L. Elgaaied-Gambier. 2016. Going green to fit in–understanding the impact of social norms on pro-environmental behavior, a cross-cultural approach. *International Journal of Consumer Studies* 40 (2):179–85. doi: 10.1111/ijcs.12241.

De Cremer, D. 2002. Respect and cooperation in social dilemmas: The importance of feeling included. *Personality and Social Psychology Bulletin* 28 (10):1335–41. doi: 10.1177/014616702236830.

Cremer, D. D., and T. R. Tyler. 2005. Am I respected or not?: Inclusion and reputation as issues in group membership. *Social Justice Research* 18 (2):121–53. doi: 10.1007/s11211-005-7366-3.

Delmas, M. A., and N. Lessem. 2014. Saving power to conserve your reputation? The effectiveness of private versus public information. *Journal of Environmental Economics and Management* 67 (3):353–70. doi: 10.1016/j.jeem.2013.12.009.

Emler, N. 1990. A social psychology of reputation. *European Review of Social Psychology* 1 (1): 171–93. doi: 10.1080/14792779108401861.

Farrow, K., G. Grolleau, and L. Ibanez. 2017. Social norms and pro-environmental behavior: A review of the evidence. *Ecological Economics* 140:1–13. doi: 10.1016/j.ecolecon.2017.04.017.

Festinger, L. 1954. A theory of social comparison processes. *Human Relations* 7 (2):117–40. doi: 10.1177/001872675400700202.

Field, A. 2013. *Discovering statistics using IBM SPSS statistics*. London, UK: SAGE Publications.

Gabriel, S. 2021. Reflections on the 25th anniversary of Baumeister and Leary's seminal paper on the need to belong. *Self and Identity* 20 (1):1–5. doi: 10.1080/15298868.2020.1850518.

Gifford, R., and A. Nilsson. 2014. Personal and social factors that influence pro-environmental concern and behavior: A review. *International Journal of Psychology: Journal international de psychologie* 49 (3):141–57.

Hernández, B., A. M. Martín, C. Ruiz, and M. D. C. Hidalgo. 2010. The role of place identity and place attachment in breaking environmental protection laws. *Journal of Environmental Psychology* 30 (3):281–8. doi: 10.1016/j.jenvp.2010.01.009.

Jason, L. A., E. Stevens, and D. Ram. 2015. Development of a three-factor psychological sense of community scale. *Journal of Community Psychology* 43 (8):973–85. doi: 10.1002/jcop.21726.

Kollmuss, A., and J. Agyeman. 2002. Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research* 8 (3): 239–60. doi: 10.1080/13504620220145401.

Kramer, R. M., and M. B. Brewer. 1984. Effects of group identity on resource use in a simulated commons dilemma. *Journal of Personality and Social Psychology* 46 (5):1044–57. doi: 10.1037/0022-3514.46.5.1044.

Mac Donald, S. Forthcoming. "Life in Paradise"? A social-psychological and anthropological study of nature conservation in the Caribbean Netherlands. Unpublished doctoral diss. Leiden: Leiden University.

Nolan, J. M., and P. W. Schultz. 2013. Prosocial behavior and environmental action. In *The Oxford handbook of prosocial behavior*, ed. D. A Schroeder and W. G. Graziano. Oxford, UK: Oxford University Press.

Obst, P., S. G. Smith, and L. Zinkiewicz. 2002. An exploration of sense of community, Part 3: Dimensions and predictors of psychological sense of community in geographical communities. *Journal of Community Psychology* 30 (1):119–33. doi: 10.1002/jcop.1054.

Pagliaro, S., N. Cavazza, M. Guidetti, F. R. Alparone, and V. A. Giannella. 2016. Concern for personal reputation within groups: The effect of accountability and fear of social exclusion. *Ricerche Di Psicologia* 1:9–19.

Prezza, M., and S. Costantini. 1998. Sense of community and life satisfaction: Investigation in three different contexts. *Journal of Community & Applied Social Psychology* 8 (3):181–94. doi: 10.1002/(SICI)1099-1298(199805/06)8:3<181::AID-CASP436>3.0.CO;2-4.

Schultz, P. W., J. M. Nolan, R. B. Cialdini, N. J. Goldstein, and V. Griskevicius. 2007. The constructive, destructive, and reconstructive power of social norms. *Psychological Science* 18 (5): 429–34. doi: 10.1111/j.1467-9280.2007.01917.x.

Sloot, D., L. Jans, and L. Steg. 2019. In it for the money, the environment, or the community? Motives for being involved in community energy initiatives. *Global Environmental Change* 57: 101936. https://www.sciencedirect.com/science/article/pii/S0959378018314134?via%3Dihub

Sparks, A. C., G. L. Henderson, S. K. Sriram, and E. R. A. N. Smith. 2021. Measuring environmental values and identity. *Society & Natural Resources* 34 (3):291–310. doi: 10.1080/08941920.2020.1817644.

Steinel, W., G. A. Van Kleef, D. Van Knippenberg, M. A. Hogg, A. C. Homan, and G. Moffit. 2010. How intragroup dynamics affect behavior in intergroup conflict: The role of group norms, prototypicality, and need to belong. *Group Processes & Intergroup Relations* 13 (6): 779–994. doi: 10.1177/1368430210375702.