

Identity and Sustainability: Localized Sense of Community Increases Environmental Engagement

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Drawing on social, community, and place identity theories, we predicted that individuals whose identities are based, at least in part, on the place where they reside would be more likely to engage in environmentally responsible behaviors, or ERBs. Study 1 tested this hypothesis by assessing residents' localized community identification and their willingness to take steps to protect and enhance local streams and waterways. Study 2 experimentally manipulated residents' sense of community. Both studies confirmed that (a) increases in one's sense of community were associated with increases in willingness to protect water resources and (b) pro-environment behavioral intentions were stronger when identity was

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more localized (neighborhood-based rather than regionally based). These findings support a nested conception of place-based community identity, which could inform strategies to encourage pro-environmental water conservation and resource management.

Many accept Thomas Hobbes' (1651/2008) premise that self-interest is the chief motivation of humanity. Rational choice theory, for example, assumes that self-interest, and the careful weighing of risks and benefits for oneself, is the primary motive for human behavior (Locke, 2011). Political systems are predicated on the assumption that individuals will often maximize personal gain rather than contribute to the common good. Complex societies require mechanisms for mitigating the problems that arise when collective interests are overwhelmed by individualistic pursuits.

Yet, individuals are capable of taking actions for the common good, whether that good is the family, community, city, state, or ecosystem (e.g., van Vugt, 2009). Many individuals take time from their individual pursuits to serve as volunteers in charitable and educational organizations (Snyder, 2011). Individuals with a collectivistic orientation tend to act in ways to promote the group's outcomes rather than striving only for personal goals (Marcus & Le, 2013). Social dilemma experiments confirm that some participants strive to maximize both their outcomes and their partner's outcome (Van Lange, Balliet, Parks, & van Vugt, 2013).

The current research examined this tension between an individualistic, self-centered orientation and a collective one in two studies of individuals' willingness to act to protect the rivers, streams, and other water resources where they reside. Drawing on studies of social, community, and place identity, we suggest that the tension between individual self-focus and collective good is reduced when individuals' community membership is salient—that individuals are more likely to act in ways that protect and sustain the environment when their sense of identity is based, at least in part, on the place where they reside. We present two field studies that tested this hypothesis using survey and experimental methods before drawing general conclusions about the current methods used to influence pro-environmental actions (Steg & Vlek, 2009; van Vugt & Griskevicius, 2012).

Environmental Engagement and Resource Dilemmas

Many environmentalists consider maintaining and enhancing the quality of the world's water resources—its streams, rivers, lakes, and oceans—to be the most pressing environmental objective of this century (Srinivasan, Lambin, Gorelick, Thompson, & Rozelle, 2012). Although increases in population and changes in agriculture practices continue to increase the demand for fresh water, the planet's supply of renewable water remains relatively constant. Fifteen percent of the

world's population lack access to safe water supplies, and competition for water is a source of continuing social and political conflict (Wolf, 2007). A number of public policies and programs are designed to protect water resources, but the demand for water is increasing, the level of groundwater in aquifers and rivers is dropping, and many traditional sources of water are now contaminated (Wolf, 2007).

Sustaining water resources is, in many respects, a commons dilemma (Hardin, 1968). During a hot and dry summer, residents may use as much water as is convenient, hoping that their neighbors will make an effort to conserve. However, if most people think this way, water reserves could be depleted rapidly, creating a possible water shortage. An individual may decide to dispose of debris in a nearby river, but if many individuals use the river in this way the water will soon be too polluted to use as a source of drinking water. If sufficient numbers of individuals misuse a water resource, it may become degraded and unusable, or even destroyed.

Fortunately, studies of the factors that influence people's behavior when they face a commons dilemma have identified several processes that work to promote environmentally responsible behaviors, or ERBs. Structural approaches, for example, regulate use of the resource, preventing individuals from using more than their designated share of the commons resource (van Vugt, 2001). Informational methods seek to educate individuals about the problems associated with resource mismanagement, often through the use of persuasive communications (Cialdini, 2003). Incentive-based methods reward individuals who act in ways that sustain the resource, but punish those who overuse it (van Vugt, 2009).

Social identity theory also suggests that individuals are also more likely to act in ways that promote and sustain a group's shared resources when their sense of self derives from their membership in the group (Tajfel & Turner, 1986). Although individuals facing a resource dilemma may be motivated to act selfishly, if their social identity is based on their membership in the collective, and that identification is both salient and psychologically significant, they will also be motivated to act in ways that benefit the collective (e.g., Brewer & Kramer, 1986; De Cremer & van Vugt, 1999; Kramer & Goldman, 1995). For example, Ostrom's (1990) analysis of self-organizing collectives that successfully regulated the use of a limited resource over a long duration were strong communities with clearly identifiable boundaries and norms, sanctions, and rules against free riders. De Cremer and van Vugt's (1999) studies of contributions in traditional and step-level public goods games found that students were more prosocial when they were reminded of their membership in a group. Van Vugt (2001), in a study of residents' use of water in their households, found that a stronger sense of community-based social identity was associated with reduced water consumption. These findings suggest the tragedy of the commons can be avoided if those who share a commons area also share a common identity.

Sense of Community and Place Identity

Social identity theory's prediction that a collective orientation is associated with environmentally responsible behavior is consistent with two other closely related lines of research: studies of community identity and place identity. Just as social identity theory suggests an augmented social identity will foster a pro-group orientation, community-level approaches suggest that members of cohesive communities are more likely to respond in positive ways to the "common concerns of life in the local society" (Theodori & Kyle, 2013, p. 59). This perspective, applied to environmental engagement, predicts residents will act to protect and sustain environmental resources when their sense of community is strong rather than weak (e.g., Agrawal & Gibson, 1999; Theodori & Kyle, 2013). For example, de Rijke (2012) examined a very diverse group of residents protesting the Traveston Crossing Dam in Queensland, Australia. The anti-dam alliance included individuals who belonged to different social categories: retirees, farmers, environmentalists, local Aboriginal peoples, and so on. These individuals, despite their disparate social identities, nonetheless shared a sense of community identity, and this identity may have been the source of their commitment to pro-environmental lobbying efforts. Similarly, Anguelovski (2013), after interviewing activists working to promote extensive environmental restorations in urban areas of Barcelona, Boston, and Havana, noted many respondents spontaneously mentioned their shared sense of community: "In all neighborhoods, deeply rooted attachment and community belonging are also strongly connected to active residents feeling responsible for improving their place" (Anguelovski, 2013, p. 225).

Theoretical and empirical analyses of place attachment and identity also suggest that people's psychological connection to the places where they live may predict their willingness to engage in environmentally responsible actions. As Gifford (2014) notes, place attachment generally denotes an emotional connection to a place that develops over time as individuals interact with others in a specific location. Place identity, in contrast, describes the extent to which an individual's sense of self includes references to a physical place, such as a region, city, or neighborhood (Hernández, Martín, Ruiz, & del Carmen Hidalgo, 2010). Gifford (2014) theorizes that place attachment may develop before and serve as a foundation for place identity, for individuals may develop positive emotions about a place before their self-definition changes to include elements of that place.

In general, increases in place attachment and place identity are associated with increases in environmentally responsible actions. Scannell and Gifford (2013), for example, found that citizen's engagement in climate change issues was related to their level of place attachment, as measured by their endorsement of such items as "I feel happiest when I'm in this place" and "I feel that this city is my home" (p. 68). Likewise, Uzzell, Pol, and Badenas (2002) found that residents' place identification predicted their social identity, which in turn predicted their

attitudes toward positive environmental actions such as water conservation, waste management, and “sense of responsibility and involvement for the state and care of the common environment” (p. 32). Hernández et al. (2010), however, found that place identity directly predicted environmental attitudes and the perceived wrongness of behaviors harmful to the environment (e.g., dumping sewage, noise pollution) but not self-report likelihood of refraining from such behaviors. Scannell and Gifford (2010) found that attachment to the community was related to ERB, but the link was not significant when other factors were controlled (i.e., attachment to natural features). Gifford (2014), in his review of this work, concludes that place attachment and place identity predict civic engagement, but that different forms of place-based associations may have different effects on ERB. He notes, for example, that individuals who are attached to the natural environment may engage in more positive environmental actions than do individuals who are emotionally involved with the civic community itself.

The Current Investigation: Hypotheses

Theoretical perspectives on social, community, place attachment, and place identity all converge on one basic premise: that individuals who feel a psychological connection to the place where they reside will be more likely to engage in environmentally responsible behavior. All these perspectives suggest individuals who feel as though they are part of a local community will be motivated to act in ways that benefit the group and its resources, and so will be less likely to act in selfish, less environmentally responsible ways. In contrast, those with weaker community identification will be less concerned with acting in environmentally sustaining ways (Kyle, Jun, & Absher, 2014).

We tested this hypothesis in Study 1 by measuring residents’ degree of identification with their neighborhood and region, their environmental attitudes, and their willingness to act in ways that protect the local environment. We controlled for factors that may have influenced the results of previous investigations (e.g., oversampling of individuals with positive attitudes toward the environment or stronger community identities) by using a stratified random sampling procedure to select a representative sample of over 1,000 men and women living in an intact urban community. These procedures allowed us to control for a number of factors that may influence both identity and environmental orientation, such as location and length of residence, sex, and income.

This sampling procedure also yielded the data needed to examine a theoretically intriguing issue implicit in a multilevel conception of identity. This perspective recognizes that an individual may belong to dozens of social groups and categories, yet only some will provide the basis for the individual’s social self (Ellemers & Haslam, 2012). Some individuals, for example, may identify strongly with their neighborhood, whereas others may be more likely to base their

self-definition on their city of residence, region, or even nation. However, which level of identification will better predict environmental engagement: a localized, neighborhood-based identity or a broader, regional identity (Lewicka, 2010)?

Drawing on social identity and place identity theory, we predicted that environmental engagement would be stronger when identity is based on smaller rather than broader geographic regions. Social identity suggests that identification becomes more likely under certain conditions—when the ingroup is homogenous, its borders are well defined, and an outgroup can be identified—and these conditions are more likely to exist for neighborhoods than for regions (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Studies of the foci of attachment in organizations further support this prediction: Ricketta and Van Dick's (2005) meta-analysis confirmed that individuals are more firmly attached to their localized work groups rather than the organization in which these groups are embedded. Investigations of entitativity—the extent to which a group is perceived to be a unified, cohesive whole—find that people are more likely to identify with groups that are higher in entitativity, and that smaller groups are viewed as more group-like than larger ones (Lickel et al., 2000). Proshansky, Fabian, and Kaminoff's (1983) place identity theory similarly suggests that people are likely to identify more strongly with “physical settings that define the day-to-day existence” (Proshansky et al., 1983, p. 57), rather than more psychologically distant locations (cf. Podeschi & Howington, 2011). These converging theoretical perspectives suggest that residents should endorse more pro-environmental values and intentions with regards to their neighborhood rather than region.

Study 1 was designed to yield evidence of the association between identity and intentions to act in ways that would protect and sustain the environment, but its correlational design could not confirm the strength of the causal relationship between those two variables. We therefore conducted a second study in which we experimentally manipulated residents' identification and then measured their reported level of environmental engagement. In Study 1, we predicted identity and environmental engagement would be correlated, but in Study 2 we predicted that increases in identity would *cause* increases in environmental engagement.

Study 1

We measured the extent to which individuals applied the label *community* to the neighborhood, city, or county where they resided, as well as their intention to act in pro-environment ways. All participants were residents of the Richmond metropolitan area of the Commonwealth of Virginia in the United States, with some living in the city of Richmond itself and others residing in one of the three surrounding counties. Our questions were part of a larger survey and portions of the survey results were previously reported in Forsyth, Garcia, Zyzniewski, Story, and Kerr (2004).

Participants

The 1,131 respondents (479 men and 652 women) ranged in age from 18 to 99, with an average age of 44.4. The majority (58.8%) reported their race as White, 33.6% as African American, 1.4% as Asian, and the remainder indicated “other.” Most (95.6%) indicated they were not of Hispanic origin. Nearly half (47.12%) of the respondents reported being married, with 18.4% divorced, widowed or separated, and 34.5% single. They were primarily employed full time (66.2%) with 8.2% employed part time, and 11.8% retired.

Method

We used a random digit dial procedure to contact residents with both listed and unlisted telephone numbers. The interviewers asked individuals who answered the phone if they would be willing to participate in a study “with citizens of the Richmond area concerning some issues that might affect them.” To avoid oversampling women (calls were more likely to be answered by a woman than a man), the interviewer asked to speak to the oldest male who was 18 or older. If none was available, the interviewer asked to speak to the oldest female, 18 or older. Numbers that did not answer were contacted 10 to 15 times before the number was dropped from the sample, resulting in a response rate of 53%.

The interviewers recorded background information about each respondent before administering the survey questions. Respondents were asked to select the response that best matched their opinion, but they could also skip a question or answer with “I don’t know.” Because we administered the survey orally to a diverse sample, we extensively pretested the questions with both students and residents of the community. Draft items were evaluated both by a panel of researchers with experience in studying environmental issues and experts in public opinion polling. After pretesting the items with a telephone sample we revised the items further to minimize ambiguity. We also chose to reduce the number of items to minimize survey fatigue, but in consequence, we measured variables with single items rather than multiple converging items.

Localized sense of community. We measured the extent to which residents’ sense of community was localized at the level of their neighborhood and city or county with two questions. To measure localization at the neighborhood level we asked “When you think about your community, how often do you think in terms of your neighborhood?” with responses including *very often*, *often*, *not often*, and *never*. Later in the survey we asked respondents a second question, pertaining to the larger region where they resided: “When you think about your community how often do you think in terms of the city of Richmond [county of Chesterfield, Henrico, or Hanover]?”

Environmental engagement. We measured residents' environmental values pertaining to the protection of water resources where they lived with a single question: "Do you personally think it's important to keep the streams, ditches, and waterways in your area clean and unpolluted?" (very important, somewhat important, not important). Their behavioral intentions with respect to watershed cleanup activities were measured with the question "Would you be willing to get involved in helping clean up the creeks and streams where you live?" (definitely willing, probably willing, maybe willing, probably not willing, definitely not willing). This measure of behavioral intentions, when used in related research (Story & Forsyth, 2008), correlated positively with other indicants of pro-environmental behavioral intentions (e.g., "I would donate time and money to organizations that promote pro-environmental action") and negatively with reports of inaction (e.g., "I don't plan to do anything to protect the watershed").

Results

In preliminary analyses, we examined the relationship between demographic factors and environmental values and engagement. A 2 (sex) X 4 (location of residence: city or one of the three counties) X 2 (race: White or African American/other) ANOVA revealed only a marginal sex main effect, with men reporting slightly more willingness to engage in ERB than women; $F(1, 1082) = 3.59, p = .06$. The means were 3.6 and 3.4, respectively. Multiple regression analyses using income, age, employment status, home ownership, educational levels, and length of time in residence yielded only two significant effects. First, individuals with less education were more likely to express more positive environment values; $r(1108) = -0.08, p = .06$. Second, younger individuals were more likely to express a willingness to engage in ERB compared to older respondents; $r(1073) = -0.18, p < .05$.

Community and environmental engagement. Because we measured participant's sense of community at both the neighborhood and regional level, we were able to use these two variables as predictors in a 4 (sense of neighborhood identification: very often, often, not often, never) X 4 (sense of regional identification: very often, often, not often, never) multivariate analysis of variance with the two environmental engagement variables (environmental attitude and behavioral intentions) serving as the dependent variables. This analysis yielded a significant main effect of neighborhood-level sense of community; Pillai's approximation to $F(6, 2044) = 3.07, p < .01, \eta^2 = .06$. The univariate effect did not reach significance for rated importance of protecting the watershed—primarily due to the low variance in responses (91.3% of the respondents felt keeping the rivers, streams and waterways clean and unpolluted was very important)—but did for behavioral

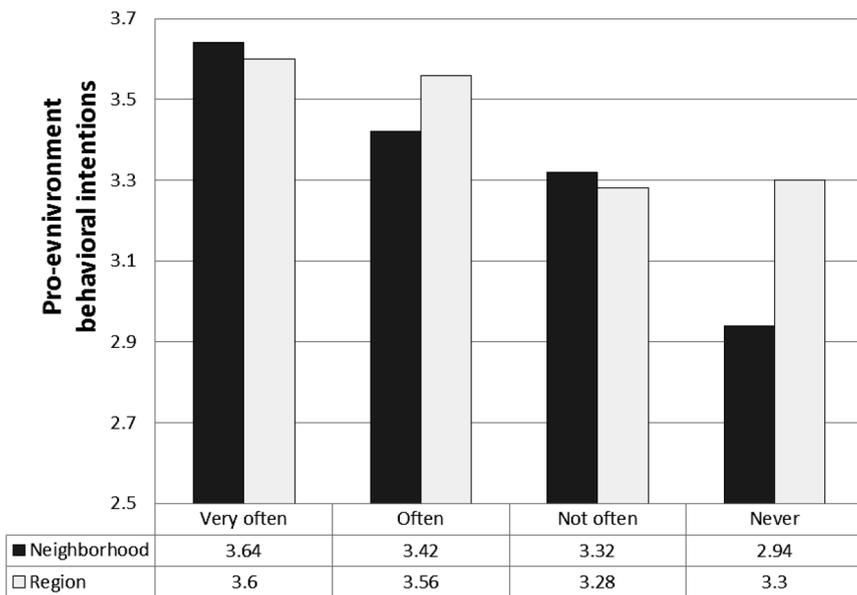


Fig. 1. Mean pro-environmental behavioral intentions for residents who differ in how frequently they think of their neighborhood or their region (either city or county) as a community. Higher scores indicate greater willingness to maintain the creeks and streams in the area.

intentions; $F(3, 1022) = 5.93, p < .001, \eta^2 = .017$.¹ The means presented in Figure 1 indicate that pro-environment intentions increased as respondents reported considering their neighborhood to be a community. Those who reported never thinking of their neighborhood in terms of community reported significantly less engagement than residents in the other three groups ($p < .05$).

The means for the effect of a regional sense of community are also shown in Figure 1. This effect, although not significant at the multivariate level, was significant for behavioral intentions; $F(3, 1022) = 4.18, p < .025, \eta^2 = .009$. As Figure 1 indicates, residents who reported they very often or often thought of their city or county as their community reported more positive intentions to get involved in protecting the water resources, compared to those residents who never or not often thought of their city or county in terms of community ($p < .05$).

The interaction of neighborhood and regional identity was not significant at either the multivariate or univariate level ($ps = .28, .29, \& .17$), suggesting that

¹ Because of the restriction in range of responses to the environmental values item, we conducted exploratory binary logistic regression analyses using environmental values as the dependent variable and community identity as predictor variables. The logistic regression model did not reach statistical significance, $\chi^2(2) = 4.45, p = .11$.

individuals who identified strongly with both the region and their neighborhood were no more likely to express pro-environmental values and intentions than individuals who identified with either their neighborhood or the region.

Localized sense of community. The majority of the respondents considered both their neighborhood (82.5%) and the region where they lived (73.5%) to be a community, but significantly more individuals reported experiencing a sense of community when they thought about their neighborhood than the region (city or county); $\chi^2(9, N = 1,079) = 286.32, p < .001$. Furthermore, multiple regression analysis indicated that regional community was a significant predictor of behavioral intentions, $b = .14, t(1,054) = 3.20, p < .001$, when neighborhood community was excluded, but when neighborhood community was added to the model the relationship between behavioral intentions and regional community was not significant; $b = .07, t(1054) = 1.58, p = .15$. Sense of community at the neighborhood level significantly predicted behavioral intentions even after the variance explained by regional level community was accounted for; $b = .17, t(1053) = 3.59, p < .001$.

Discussion

A localized sense of community was associated with greater willingness to engage in pro-environmental behaviors, supporting our prediction that the natural resources of an area could be viewed as a common resource and those individuals with a localized sense of community will be more concerned about the sustainability of that resource. We found some evidence that a more narrowly defined geographic unit, the neighborhood, served as a more potent source of both community identification and commitment to pro-environmental action, but even a more general, regional focus based on city or country residency was associated, to a degree, with pro-environmental action.

The correlational design of the study, however, does not permit us to eliminate a number of very plausible rival alternative explanations of this relationship between sense of community and environmental engagement. For example, individuals who already engage in ERB may develop a stronger sense of community, or some third variable—such as one's satisfaction with one's city or town—may prompt individuals to be both collective in their orientation and pro-environment in their attitude. Therefore, we conducted a second study in which we manipulated the salience of residents' sense of community, and then measured their reported level of environmental engagement. We predicted that making salient individuals' membership in their community would cause them to express more positive environmental attitudes and behavioral intentions.

Study 2

In Study 2, we tested the impact of sense of community on pro-environment behavioral intentions experimentally. We conducted a door-to-door survey of environmental engagement, but we primed some residents' sense of community prior to the interview.

Participants

The participants were a convenience sample of residents who lived within the same region as those who participated in Study 1 (Richmond, Virginia). Of the 57 participants surveyed 57.9% were women and 42.1% were men. The participants included both White (91.2%) and African-Americans (8.8%) residents, and 15.8% of the respondents were of Hispanic origin. Participants ranged in estimated age from 25 to 80. All participants voluntarily consented to take part in the research study.

Procedure

All interviews were conducted by a White, 20-year-old male college student who went door-to-door to recruit participants. Prior to approaching each dwelling, the experimenter randomly assigned the residence to one of three conditions: neighborhood, regional, or control. The experimenter, after introducing himself by name and showing his university identification card, explained that he was conducting a brief survey. In the *neighborhood condition*, he stated:

I am talking to people who are members of this neighborhood, [*name of neighborhood*], people whom live, work, and play in this neighborhood. In this survey, you represent your neighborhood. You are an individual, but you are also a part of this neighborhood. We will take your ideas and comments and from them learn about the whole neighborhood.

Participants in the *regional condition* heard the same message, but the experimenter replaced the word *neighborhood* with the phrase *Richmond region*. The experimenter asked the same survey questions of residents in the control condition, but he did not introduce the primes in that condition.

The experimenter also increased the salience of localized sense of community using a variation of the self-group concept measure developed by Tropp and Wright (2001). The experimenter showed the respondent a chart of intersecting circles labeled with the word *individual* in one circle and *neighborhood* (or region, depending on the condition) in the other before asking "Thinking about you and this neighborhood [region] how would you describe your connection? If one circle represents you and the other represents your neighborhood [region] how much do they overlap?" All five circles were the same size, and went down the

page in ascending amount of overlap to the neighborhood or region with number cues (1–5). Participants indicated that their identification with their neighborhood or region was: (1) 0% connected, (2) 25% connected, (3) 50% connected, (4) 75% connected, and (5) 100% connected. We did not administer this item to the participants in the control condition.

Localized sense of community. We measured respondents' sense of community as we did in Study 1, by asking, "When you think about your community how often do you think in terms of your neighborhood (region)?"

Environmental engagement. We measured residents' environmental values pertaining to the water resources in the region with the same question used in Study 1: "Do you personally think it's important to keep the streams, ditches, and waterways in your area clean and unpolluted?" (very important, somewhat important, not important). We measured behavioral intentions regarding watershed cleanup activities with four items related to water resource restoration (e.g., "Would you be willing to get involved in helping clean up the creeks and streams where you live?"; "Would you be willing to take part in a community-based watershed clean-up program?"). The response scale for these items was definitely willing, probably willing, maybe willing, probably not willing, definitely not willing. These four items were averaged to yield a reliable behavioral intentions scale with a Cronbach's alpha of .89.

Ancillary items. The experimenter also asked respondents to indicate their degree of agreement with a series of statements pertaining to environmental engagement, including appraisal of the quality of the local water ("I am satisfied with the quality of the water in the watershed"), sense of responsibility for maintaining the watershed ("It isn't my responsibility to protect the watershed"), and perceptions of community cooperation ("I think people in this area are working well together to improve the watershed"). Respondents indicated their agreement on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). At the conclusion of the survey, all residents were given contact information and a pamphlet regarding the health of the Chesapeake Bay provided by the Chesapeake Bay Foundation.

Results

Participants' responses were examined in a series of one-way ANOVAs, with Duncan's and Dunnett's tests used for post hoc comparisons, if appropriate. These analyses are summarized in Table 1, which includes the means for the dependent measures by condition, *F*-ratios, and significance levels.

Table 1. Effects of Neighborhood and Regional Identity on Environmental Engagement

Measure	Condition			ANOVA results			
	Neighborhood	Regional	Control	F-ratio	dfs	p-value	η^2
Regional sense of community	3.70 _b	4.43 _a	2.83 _c	14.70	2, 46	< .001	.40
Neighborhood sense of community	4.00 _a	3.81 _a	3.50 _a	1.08	2, 44	< .347	.05
Importance of watershed	2.94 _a	2.86 _a	2.50 _b	6.45	2, 52	< .01	.20
Pro-watershed behavioral intentions	3.71 _a	3.18 _{ab}	2.56 _b	6.48	2, 52	< .01	.20
Not my responsibility	1.56 _b	1.95 _b	3.37 _a	16.97	2, 52	< .001	.40
Outgroup blame	3.06 _b	2.57 _b	4.19 _a	19.40	2, 52	< .001	.43

Note. Means that do not share a subscript differ at the $p < .05$ level by Duncan's New Multiple Range test.

Localized sense of community. Participants' responses to the item, "When you think of your community how often do you think in terms of the Greater Richmond Region," supported the effectiveness of the manipulation. As the means in Table 1 indicate, the control, neighborhood, and region conditions all differed significantly from each other ($p < .05$). The means for the second item, pertaining to sense of community and neighborhoods, were in the predict direction, but they did not differ from each other ($p > .23$). Both of these items were related to the responses of the participants in the experimental conditions to the overlapping circles self-group identity measure; r_s ($n = 41$) = .22 and .37, $p_s = .14$ and .02, respectively.

Environmental values. Respondents differed, by condition, in their response to the question asking them to rate the importance of keeping "the watershed streams and ditches in your area clean and unpolluted." As the means in Table 1 indicate, individuals in the two localized community conditions—neighborhood and region—felt that maintaining water quality was more important than did individuals in the control condition.

Behavioral intentions. Analysis of the behavioral intentions scale supported the prediction that an increased sense of community would increase environmental engagement. Residents' pro-environmental intentions were more positive in the neighborhood condition than in the control ($p < .05$) condition, with the regional condition falling intermediate and not differing from the other two conditions (see Table 1).

Perceptions and attitudes. In an exploratory analysis we submitted the 11 general questions pertaining to quality of the local water, sense of responsibility for maintaining the water resources, and perceptions of community cooperation to a MANOVA, which yielded a significant effect for condition; Pillai's

approximation to $F(22, 86) = 2.46, p < .001, \eta^2 = .386$. The means, F -ratios, and effect sizes for the two items where differences held at the univariate level are shown in Table 1. Both pertained to responsibility, and the results suggest that activating a sense of community also increased feelings of responsibility. Individuals in the control condition not only tended to blame its current conditions on others but also felt less responsibility for protecting it, as indicated by their agreement with the following statements: "It isn't my responsibility to protect the watershed" and "Much of the pollution in the watershed is being done by people who live in communities other than mine." These two items were significantly correlated; $r(55) = .52, p < .001$.

Discussion

Study 2 replicated Study 1 by finding that individuals with a localized sense of community were more likely to express a willingness to engage in environmentally responsible behavior (ERB). Study 2, however, by manipulating residents' sense of community directly, suggests that a sense of community is not just a correlate of ERB but a cause of it. When individuals were reminded that they were members of a neighborhood, they (a) more strongly endorsed the importance of maintaining the quality of the area's water resources, (b) expressed more positive behavioral intentions with regards to ERB, and (c) took more personal responsibility for protecting their watershed. To our knowledge, this is the first study to examine the effect of manipulated identities on ERB. Study 2's findings also provide indirect support for an Awareness-Appraisal-Responsibility (AAR) model of environmental engagement (Forsyth et al., 2004; Story & Forsyth, 2008). That model predicts that individuals who recognize environmental threats are more likely engage in ERB, but that responsibility mediates the relationship between perceptions of threat and action. In Study 2, community identification not only increased willingness to engage in ERB, but also residents' feelings of responsibility for protecting the environment.

General Discussion

Inspired by studies of social identity, sense of community, and place identity, we conducted two studies to examine three sets of interrelated questions concerning engagement in actions that sustain and protect the environment. First, does a localized sense of community predict a heightened concern for the quality of the environment where members of the collective reside and a willingness to act in ways to sustain the environment? Both studies confirmed the hypothesized relationship between place identity and environmental engagement: Individuals who

said they more frequently think of their place of residence to be a community were more likely to express a concern for the quality of water in their area and a willingness to get involved in sustaining their water supplies. This finding is consistent with other studies on water conservation (Van Vugt, 2001) but other ERBs as well (e.g., Oishi et al., 2007; Vaske & Kobrin, 2001). The relationship was stronger for behavioral intentions than for environmental attitudes in Study 1, but both aspects of environmental engagement were linked to sense of community in Study 2.

Second, is the relationship between sense of community and environmental attitudes and intentions greater when the collective is smaller and more localized (neighborhood level) rather than larger and less localized (regional level)? Social identity suggests that all social groups are not created equal in terms of their impact on identity. Each individual belongs to dozens of nested, overlapping, and exclusive groups, but not all of these memberships define the member's identity. The current research suggests the smaller the size of the geographically based social group, the more substantial its influence on the member's sense of community. Others, however, have found that neighborhood attachment is not as strong as a city attachment (Hidalgo & Hernández, 2001), so further research is needed to determine the features of the environment that influence identification with one's community (Uzzell et al., 2002).

Third, given the inconsistent effects of place identification on ERB, will an increased sense of community cause individuals to express more positive environmental intentions? Study 1 established the relationship between sense of community and environmental engagement, but Study 2—by experimentally activating residents' sense of community—indicated that a shift in identification can increase environmental engagement. This effect is consistent with other work that suggests that place, or community, identification is linked to more positive environmental intentions (Oishi et al., 2007; Vaske & Kobrin, 2001). The results suggest that a sense of community may not influence values and intentions if not activated by some aspect of the situation. In Study 2, we did not remind residents in the control condition of their tie to their community, and consequently they were less likely to respond in ways that suggested they were concerned with their communities' outcomes.

Although we believe that the increase in behavioral intentions was due to the increased salience of place identities, alternative explanations can account for our findings. By making residents' place identities salient, we may have inadvertently pressured them to portray their community, and themselves, positively. On the one hand, the priming manipulation did not influence their general evaluation of the cleanliness of their water resources. On the other hand, their motivation to present themselves in a positive light may have been narrowly focused on their personal rather than place identity. Additionally, the primes in Study 2 may have caused residents to feel less anonymous than those in the control condition. While we

cannot rule out this interpretation, it is unlikely that any of the residents would feel anonymous given we approached them at their place of residence. However, additional research is needed to rule out these possibilities.²

Limitations of the studies should be noted. Study 1, because it was conducted by telephone, required the use of items that were easily understood and answered by respondents. In consequence, the questions pertaining to sense of community were indirect ones—asking how frequently respondents considered their neighborhood or region to be a community. Study 2 also used these items to assess sense of community, but added a second measure developed by Tropp and Wright (2001). These two methods converged to some extent, thus providing support for the validity of the thought-frequency item. The measures, however, were simplified indexes of respondents' sense of community, and this concept includes multiple elements that our measures did not assess (Theodori & Kyle, 2013). Nor did we assess psychological factors that are closely related to place identity, including place attachment (Lewicka, 2011). In consequence, additional research will be needed to examine the extent to which the current findings are congruent with related conceptualizations of geographically centered environmental identities (Raymond, Brown, & Weber, 2010).

We also did not measure behavior directly. Although prior studies of the close relationship between intentions and behavior reported by Ajzen and Fishbein (1980) suggest that our findings pertaining to intentions would generalize to behavior, given the social desirability of pro-environmental action participants may have been overstating their claims of intended restorative action. Social desirability demands are robust in this context, as indicated by the results of Study 1: Nearly all participants in that study strongly endorsed the importance of clean water. In consequence, their willingness to take action to protect the environment may have been based on their desire to project a positive image to the interviewer rather than a sincere concern for the environment.

These limitations aside, the findings are both theoretically and practically significant. The findings supported social identity theory's basic premises. Individuals who more strongly identified with a collective—in this case, a neighborhood, city, or geographical region—considered the group's resources to be more important to them; they also reported a willingness to undertake personally costly actions to sustain these resources. This finding supports the social identity theory prediction that individuals whose sense of self includes a group-level component will act in ways that are more prosocial. The studies also suggest a group's boundaries may be both physical—set in a particular location—as well as psychological—defining who is in the group and who is outside of it. More research is needed, however, to determine if the relationship between sense of community and environmental engagement holds when the geographic area is

² Thanks are extended to an anonymous reviewer for suggesting these possible alternatives.

poorly defined or when two communities are competing for the same resource. In these situations, activating a collective-level identification may have negative effects on resource conservation (Brewer & Kramer, 1986; Uzzell et al., 2002).

The current research adds yet another means of increasing ERB: Individuals can be induced to act in ways that sustain the environment by reminding them that they are members of a social group. Approaches that focus on fostering a sense of community may be more effective at increasing positive environmental actions than individual-level approaches. This suggestion is consistent with Abrahamse and Steg's (2013) meta-analysis of environmental interventions, for they report that social approaches tend to be effective in increasing ERB. Such methods may be particularly effective when incorporated with other approaches. For example, researchers and practitioners may consider using the block leader approach where a member of the community, who already engages in ERB, is selected to go door to door and encourage others to engage in similar behavior. The approach may be especially useful if it involves block leaders who strongly identify with the community approaching similarly identified community members (e.g., Burn, 1991; Hopper & Nielsen, 1991).

The two studies also have implications for enacting and enhancing environmentally focused public programs and policies. For example, the U.S. Environmental Protection Agency (EPA) adopted a watershed approach to clean water in the early 1990s. This approach's major policy components include (a) identifying threats to human and ecosystem health in watersheds, (b) increasing involvement of citizens and other stakeholders in programs designed to protect and enhance watershed quality, and (c) developing, implementing, and evaluating watershed focused interventions. Stakeholder involvement is a critical part of the success of these programs, but our findings suggest a more localized approach may generate a higher level of citizen engagement. Watersheds are geographically specific, but they cut across more psychologically meaningful spaces, such as neighborhoods, towns, counties, cities, regions, and states, industrial and suburban areas, and rural and urban areas. In consequence, the watershed-level approach, by seeking to protect large geographic regions, may find less public support than one that focuses on more localized environmental resources, such as rivers and streams that run through a specific neighborhood. Policy makers may hope that citizens are willing to "think globally," but our findings suggest that they are more likely to "think locally."

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