Caring for the Commons: Using Psychological Ownership to Enhance Stewardship Behavior for Public Goods

Joann Peck, Colleen P. Kirk, Andrea W. Luangrath, and Suzanne B. Shu

Abstract
How can consumers be encouraged to take better care of public goods? Across four studies, including two experiments in the field and three documenting actual behaviors, the authors demonstrate that increasing consumers’ individual psychological ownership facilitates stewardship of public goods. This effect occurs because feelings of ownership increase consumers’ perceived responsibility, which then leads to active behavior to care for the good. Evidence from a variety of contexts, including a public lake with kayakers, a state park with skiers, and a public walking path, suggests that increasing psychological ownership enhances both effortful stewardship, such as picking up trash from a lake, and financial stewardship, such as donating money. This work further demonstrates that the relationship between psychological ownership and resulting stewardship behavior is attenuated when there are cues, such as an attendance sign, which diffuse responsibility among many people. This work offers implications for consumers, practitioners, and policy makers with simple interventions that can encourage consumers to be better stewards of public goods.

Keywords
diffusion of responsibility, environment, green marketing, perceived responsibility, psychological ownership, public goods, stewardship, tragedy of the commons

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Maintaining the natural environment is one of the most pressing issues facing our planet and its inhabitants. In a time when natural resources are dwindling, the active and intentional care of public goods is of utmost concern. Yet, “everybody’s property is nobody’s property” (Scott 1955). The neglect of common resources as compared with singularly owned resources is known in economics as the “tragedy of the commons” (Hardin 1968; Ostrom 1990). The key insight of the tragedy of the commons is that shared ownership leads to a diffusion of responsibility among community members, such that no one individual steps forward to provide stewardship (with either effort or money) for the resource. The most extreme solution to a tragedy of the commons problem is to convert common property into private property so that a single owner has responsibility for the care and maintenance. In this project, we wondered if it was possible to instead make people feel as if the property is one’s own without transferring legal ownership? Given that a feeling of ownership, or psychological ownership (Pierce, Kostova, and Dirks 2003), can be independent of legal ownership, in this research we examine whether making each user feel as if a public resource is privately owned can enhance stewardship behavior without actually changing legal ownership.

To improve social welfare and benefit marketers of public goods, we investigate techniques that influence stewardship behaviors, defined as actions in service of ensuring the welfare of a target. We propose and find that increasing an individual’s psychological ownership over a public good increases their propensity for stewardship behaviors and that this effect is explained by feelings of responsibility for the public good. Our studies use actionable interventions to induce individuals’ feelings of ownership. We then directly observe and measure actual stewardship behaviors in the lab and field. We uncover

Joann Peck is Associate Professor of Marketing, Wisconsin School of Business, University of Wisconsin–Madison, USA (email: jpeck@bus.wisc.edu). Colleen P. Kirk is Associate Professor of Marketing, New York Institute of Technology, USA (email: ckirk01@nyit.edu). Andrea W. Luangrath is Assistant Professor of Marketing, Tippie College of Business, University of Iowa, USA (email: andrea-luangrath@uiowa.edu). Suzanne B. Shu is John S. Dyson Professor of Marketing, Charles H. Dyson School of Applied Economics and Management, Cornell University, USA (email: suzanne.shu@cornell.edu).
promising interventions for alleviating the tragedy of the commons and answer the call to tackle a real-world marketing issue relevant to consumers and society at large to help create a better world (Moorman et al. 2019). We contribute to the field by mapping a real-world phenomenon to a construct to increase our understanding of both (MacInnis et al. 2020). Before introducing the studies, we detail our conceptual background, focusing on what constitutes a public good, sources of psychological ownership, and felt responsibility as a driver of stewardship.

Theoretical Background and Hypotheses

Stewardship Behavior for Public Goods

Public goods are typically defined as resources jointly owned and/or consumed by a large group of individuals, such as local public parks, national parks, and public roads and waterways, and are available to all of society’s members to use (Altman 1975; Brower 1965; Goffman 1961, 1971). In contrast to private goods, which provide incentives to the owner for care and maintenance behaviors because the owner can ultimately sell them, users of public goods are unlikely to directly benefit from the value that comes with maintenance and thus derive less financial benefit from investing in their upkeep. Public goods also differ from rented or temporarily shared goods (defined as either primary or secondary territories by Altman [1975]), for which a primary owner controls access and usage of the resource and thus still maintains the incentive for good stewardship. Consumers benefit from having access to public goods for either individual or simultaneous use. Unfortunately, there is a risk that users will put short-term self-interest from usage ahead of common long-term maintenance interest and fail to adequately care for these public resources. For example, public nature paths may become damaged by careless users, and parks and lakes may succumb to litter.

When searching for solutions to the problem of encouraging care for public goods, Hardin (1968) argued that the tragedy of the commons has no “technical” solution and could be resolved by communities developing a system of rules and punishments to change each individual’s incentives relative to the greater community needs. Later research demonstrated that communities can jointly care for shared resources as long as there are clear, publicly known laws even without punishment (Ostrom 1990; Poteete and Ostrom 2002). Social influences, driven through psychological factors such as reciprocity, conformity, and/or altruism, have also been explored (Akerlof 1982; Andreoni 1990; Sugden 1984). For example, finding out about other people’s large donations to public radio (Shang and Croson 2009) or others’ reuse of towels in a hotel room (Goldstein, Cialdini, and Griskevicius 2008) prompts explicit social norms that influence care of common resources. Explicit social labels (“you are a neat and tidy person”) have also been found to increase stewardship behaviors by changing individuals’ self-perceptions (Allen 1982; Miller, Brickman, and Bolen 1975). However, it is important to note that such systems are still primarily socially driven rather than individually motivated, with either explicit punishments or explicit norms that encourage community members to adhere to the rules. Cooperative behavior via social influence persists on the basis of assumptions of reciprocity, or the idea that community members can reward or punish each other’s behavior (Axelrod and Dion 1988; Axelrod and Hamilton 1981), rather than depending on the private motivations of the individuals within the community.

Ideas regarding public goods, and how and when individuals do or do not cooperate in their care, have also been tested in the lab. Ledyard (1995) provides a comprehensive review of experimental research on public goods (see also Croson 2010; Mitchell and Carson 1989). Normative theory suggests that contributions to the common good should be low or zero, and yet some level of cooperation often does occur in these experiments. Explanations for this behavior include either individual altruism or group norms of reciprocity and fairness (Dawes and Thaler 1988). Contributions increase when communication is allowed between players (Dawes, McTavish, and Shaklee 1977) and when players are allowed to build up a reputation for reciprocity through multiple rounds (Milinski, Semmann, and Krambeck 2002). Limited tests of these findings in field settings have found similar results, especially regarding the value of face-to-face communication for increasing cooperation. One key finding from the lab is that while groups may successfully generate their own internal rules, rules imposed by an external authority can actually harm socially oriented behavior and make the group worse off (Cardenas 2000).

In summary, the empirical evidence leans toward encouraging reciprocity via communication and explicit norms. Unfortunately, while developing strong reciprocity norms via communication can work in the lab, it may be especially difficult with large and diffuse groups, as is usually the case for many public goods. We propose that it is possible to make each shared owner or community member feel as if the resource is privately owned, despite possessing no legal ownership. If so, then an internally motivated behavioral solution, rather than either explicit social messages or penalties, may be available for the stewardship of shared resources.

Psychological Ownership

Early work on psychological ownership emerged from the realization that legal ownership of a corporation through employee stock options did not result in positive work behaviors; rather, what was crucial for positive worker outcomes was a feeling of ownership (Pierce and Peck 2018). Psychological ownership, or a feeling that something is “mine,” (Pierce, Kostova, and Dirks 2003) has garnered increased attention in marketing due to its role in driving key consumer outcomes. For example, a sense of ownership of a product, even without legal ownership, increases economic valuation (Fuchs, Prandelli, and Schreier 2010, Peck and Shu 2009) and purchase intentions (Spears and Yazdanparast 2014).
Psychological ownership has often been studied in the context of products that are possessed or consumed by a single consumer at a time, such as a sweater (Spears and Yazdanparast 2014), a mug (Peck and Shu 2009), or a blanket (Peck, Barger, and Webb 2013). Researchers have elicited psychological ownership by, for example, having consumers name (Stoner, Loken, and Blank 2018), vote for (Fuchs, Prandelli, and Scheier 2010), or design (Kirk, Peck, and Swain 2018) a product. These manipulations take root in antecedents to psychological ownership: investing the self into the target, controlling the target, and coming to intimately know the target (Pierce, Kostova, and Dirks 2003). Investing the self into the target refers to the investment of an individual’s energy into the target; we feel like we own what we produce or customize (Kirk, Peck and Swain 2018) because we invest our labor in the process (Locke 1690; Pierce, Kostova, and Dirks 2003). An individual who has physical control of a product (Atasoy and Morewedge 2018; Peck and Shu 2009), decides who else can use an object (Rudmin and Berry 1987), controls the design process (Baxter and Aurisicchio 2018) or controls the behaviors of a target (Kirk 2019) likely feels ownership. In addition, an intimate association with a target (e.g., brand secrets pertaining to new product offerings or product related expertise; Alba and Hutchinson 1987) enhances psychological ownership (Beggan and Brown 1994; Pierce, Kostova, and Dirks 2003; Rudmin and Berry 1987). Intimate knowledge of a target is built up by repeated positive experiences in and with a place or target, in what Pierce, Kostova, and Dirks (2003) refer to as a “living relationship.” It is likely that individual psychological ownership can emerge in the context of public goods, for example, such that a consumer may feel a local public park is “theirs” because they frequently visit it and know the trails intimately. We investigate whether, when, and how psychological ownership translates into stewardship for public resources, and in doing so, we explore a variety of actionable interventions that build on the antecedents to psychological ownership. We expand these findings into a larger analysis of practical interventions for increasing psychological ownership in the general discussion.

Psychological Ownership, Responsibility, and Stewardship Behaviors

Whereas stewardship is sometimes viewed as an attitude or feeling (Hernandez 2012), in this research we focus on actual or intended stewardship behaviors as an outcome of psychological ownership. Stewardship behaviors can include financial behaviors, such as donating money for the upkeep of the resource, as well as effortful behaviors, such as picking up litter or clearing debris. In essence, we argue that for consumers, psychological ownership of an entity facilitates alignment of the welfare interests of the target with consumers’ own interests. Therefore, protecting the best interests of the psychologically owned entity becomes the focus of the consumer’s behavior.

Tragedy of the commons research provides extensive documentation that goods that are not privately owned, such as cemeteries (Harnik and Meroli 2010), public housing (Forrest and Murie 2014), fishing areas (Mitchell, Graham, and Ringwood 2013), and beaches (Gunter, Ditton, and Olson 1987), are subject to abuse or neglect. In parallel, decades of research on the endowment effect finds that legal ownership can increase the perceived value of an object (Kahneman, Knetsch, and Thaler 1990; Thaler 1980). It has also been shown that the feeling of ownership, or psychological ownership, can have an effect similar to that of legal ownership on object valuation (Peck and Shu 2009; Shu and Peck 2011).

There is also evidence that individuals will value public goods more highly if they already feel ownership toward the shared resource, thus mirroring the endowment effect within a public goods context. For example, duck hunters asked about the value in protecting wetlands from development were willing to pay $247 per season, but required $1,044 to give up existing entitlements to the public space (Hammack and Brown 2016). Similar differences in willingness to pay and willingness to accept are reported for elk hunters, fishermen, and goose hunters when asked about valuation for public lands (e.g., Schulze, D’Arge, and Brookshire 1981) and also for community residents who were asked about changes in air visibility (Rowe, D’Arge, and Brookshire 1980). Such results prompt Korobkin (2003) to theorize that individuals feel entitled to public goods such as clean air the same as they do to legally owned items, “even if you have no well-defined property right in clean air that could plausibly be called ‘ownership’” (Korobkin 2003, p. 1229). In line with these findings, valuation arising from psychological ownership appears to exist for public goods just as it does for individually owned objects. The link between ownership and valuation suggests that stewardship behaviors to preserve the good may also be an outcome of higher levels of psychological ownership. Given that people tend to steward that which they value, we conjecture that psychological ownership can elicit stewardship behaviors of public goods. Formally,

\[ H_1: \] Increased psychological ownership of a public good increases the likelihood of engaging in stewardship behavior for that good.

When considering the mechanisms behind these valuation disparities for public goods, some have argued that higher value can emerge from feeling a moral duty to preserve the good. Boyce et al. (1992) contend that valuation disparities are explained by an inability for individuals to replace the public goods with private goods (see also Hanemann 1991). Irwin (1994) expands the investigation into mechanisms even further by showing that a strong sense of moral responsibility toward the item (especially if that item may be destroyed) drives differences in buying and selling valuation for environmental goods.

Because valuation and ownership are imbued with a sense of responsibility to protect and care for a product (Pierce,
Kostova, and Dirks 2003), we predict that the effect of consumers’ psychological ownership on their stewardship behaviors is explained by feelings of responsibility toward the resource. Perceived responsibility refers to a sense of accountability, obligation or duty (Feather 1996) and reflects “the need to take care that bad does not happen and to feel negative emotions if bad does happen” (Irwin 1994, p. 437). In environmental contexts, personal feelings of responsibility have been found to be a strong predictor of changing environmentally destructive behavior (Fransson and Gärling 1999). Other authors have also suggested that a lack of perceived responsibility and/or a lack of psychological ownership may underlie failures to care for the environment (Felix and Almaguer 2019; Lee et al. 2013; Shu and Peck 2018; Sussenbach and Kamleitner 2018), but they do not offer empirical evidence to support these suppositions. We propose that higher levels of psychological ownership toward a public resource can lead to increased feelings of responsibility, and that this responsibility is then enacted through actual stewardship behaviors.

**H2:** The positive effect of psychological ownership on stewardship behaviors for public goods is mediated by perceived responsibility.

**Diffusion of Responsibility**

“That which is common to the greatest number has the least care bestowed upon it” (Aristotle 1905). Because a public good, by definition, grants free and open access to all, considerations of perceived responsibility in the presence of others are particularly relevant. While an individual may appreciate that a public good can be used by others, questions remain whether cues of other visitors would diffuse responsibility felt for the public good, thereby affecting an individual’s stewardship behaviors. Research has consistently demonstrated that diffusion of responsibility is one process in which the presence of others inhibits helping behavior (Latané and Darley 1968, 1970; Levy et al. 1972). As the number of people present in a situation increases, each of whom also share some of the responsibility, any one individual feels less compelled or responsible to take action (Darley and Latané 1968; Fischer et al. 2011).

The presence of others may diffuse environmental responsibility analogous to the presence of bystanders in emergency situations. Logically, any manner in which a feeling of diminished responsibility is induced should lead to similar behavior—inaction. Managers of public goods may inadvertently diffuse responsibility by using cues of other visitors. For example, a cue such as a park attendance sign (e.g., you are visitor #1,452) may, in effect, diffuse responsibility across many visitors with respect to caring for the public good. When other potential contributors are large in number, an individual’s own felt responsibility for a target may therefore decrease. Diffused responsibility is not necessarily a calculated effort but rather can be brought about by the mere suggestion of the presence of groups; that is, it has been shown that simply imagining others may induce a mental state of diffused responsibility (Garcia et al. 2002). Thus, we argue that individuals who feel a sense of ownership, and would otherwise perceive individual responsibility for a public good, may be driven to inaction with the suggestion or cue that others are, or will be, present and responsible for the care of the good. This is likely a boundary condition for the main effect of psychological ownership on stewardship behaviors; we conjecture that perceived responsibility for a target and subsequent stewardship behaviors will be detrimentally affected by a diffusion of responsibility cue.

**H3:** The effect of psychological ownership on stewardship through perceived responsibility diminishes in the presence of a diffusion of responsibility cue.

**Overview of Studies**

In this article, we present the results of four studies (see Table 1). We design field and laboratory experiments using three different public contexts (i.e., a public lake with kayakers, a state park with skiers, and a public park with hikers) and actionable interventions to increase psychological ownership, and we investigate a variety of effortful and financial stewardship behaviors. Five additional Web Appendix studies highlight novel interventions to increase psychological ownership in a public goods context. In the field, we document that enhancing patrons’ psychological ownership of a public lake (Study 1) or park (Study 3) increases the amount of trash they pick up (Study 1) and their actual donations (Study 3). An actionable manipulation of psychological ownership (a “welcome to YOUR park” sign) increases stewardship intentions (Study 2) and actual behaviors (Study 4) and perceived responsibility is the process through which ownership affects stewardship (Studies 2, 3, and 4). Finally, we identify a relevant moderator of the process, an attendance sign (Study 4), which results in a diffusion of responsibility, thus undermining the effect of psychological ownership on stewardship behaviors.

**Study 1: The Effect of Psychological Ownership on Stewardship Behavior**

The objective of this initial experiment in the field was to examine our main contention that increasing individual psychological ownership of a public resource, in this case a lake, will increase behavioral stewardship of a public good (H1). Consistent with a view of stewardship as actions in service of ensuring the welfare of a target, in this study, we measure stewardship via actual behavior by observing whether lake users pick up trash that was planted in the lake by experimenters.

**Method**

Participants and design. This study employed a single-factor (psychological ownership [PO] vs. control) between-subjects design with 135 patrons of an outdoor equipment rental service
### Table 1. Overview of Studies and Findings.

<table>
<thead>
<tr>
<th>Manuscript and Appendix Studies</th>
<th>Public Good Context</th>
<th>Study Type</th>
<th>Design</th>
<th>Stewardship Behaviors</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>Public lake</td>
<td>Field experiment</td>
<td>Single-factor PO vs. control</td>
<td>- Attempting to remove trash (actual behavior)</td>
<td>Enhancing the psychological ownership of a public lake increases actual stewardship behavior.</td>
</tr>
<tr>
<td>Study 2</td>
<td>Public park</td>
<td>Scenario-based experiment</td>
<td>Single-factor PO vs. control</td>
<td>- Intention to pick up trash</td>
<td>Perceived responsibility mediates the effect of psychological ownership on stewardship behaviors. Elaboration, public self-consciousness, conscientiousness, and perceived costs of engaging in stewardship do not explain this effect.</td>
</tr>
<tr>
<td>Study 3</td>
<td>Public cross-country ski park</td>
<td>Field experiment</td>
<td>Single-factor PO vs. control</td>
<td>- Donating money (actual behavior) - Volunteering intentions - Intention to like the park’s Facebook page - Intention to post on Instagram using park’s hashtag</td>
<td>Perceived responsibility mediates the effect of psychological ownership on stewardship behaviors, including actual donations.</td>
</tr>
<tr>
<td>Study 4</td>
<td>Public park</td>
<td>Incentive-compatible lab experiment</td>
<td>$2 \times 2$ PO vs. control</td>
<td>- Intention to pick up trash - Intention to repair damage - Volunteering intentions - Donating money (actual behavior)</td>
<td>Customers reduce their perceived responsibility and stewardship behaviors, including actual donations, when they perceive that others will take responsibility. Place attachment and involvement do not explain this effect.</td>
</tr>
<tr>
<td>Appendix W6 Study 1</td>
<td>Digital public good (e.g., Wikipedia-like website)</td>
<td>Scenario-based Web experiment</td>
<td>Single-factor PO vs. control</td>
<td>- Verbal defending - Editing website errors - Post positive comments on webpage - Donating money (actual behavior)</td>
<td>Increasing psychological ownership increases engagement in defensive word-of-mouth for the webpage and likelihood of identifying errors in service to the webpage. No significant effects were found for positive posting or donation behavior.</td>
</tr>
<tr>
<td>Appendix W6 Study 2</td>
<td>Nature path</td>
<td>Scenario-based experiment</td>
<td>Single-factor PO vs. control</td>
<td>- Intention to pick up trash - Intention to repair damage - Intended donation amount</td>
<td>Enhancing psychological ownership increases intention to pick up trash, repair damage, and marginally significantly increases intended donation behavior.</td>
</tr>
<tr>
<td>Appendix W6 Study 3</td>
<td>Public park</td>
<td>Scenario-based experiment</td>
<td>Single-factor PO vs. control</td>
<td>- Intention to repair damage</td>
<td>Perceived responsibility mediates the effect of psychological ownership on stewardship behavior.</td>
</tr>
<tr>
<td>Appendix W6 Study 4</td>
<td>Nature preserve</td>
<td>Incentive-compatible scenario-based experiment</td>
<td>Single-factor PO vs. control</td>
<td>- Intention to pick up trash - Intention to repair damage - Intention to avoid damage - Volunteering intentions - Donation amount (actual behavior)</td>
<td>Perceived responsibility mediates the effect of psychological ownership on intention to pick up trash, repair damage, avoid damage, volunteer, and actual donation behavior.</td>
</tr>
<tr>
<td>Appendix W6 Study 5</td>
<td>360° beach video</td>
<td>Lab experiment</td>
<td>Single-factor PO vs. control</td>
<td>- Intention to pick up trash - Intended donation amount</td>
<td>Enhancing psychological ownership increases intention to pick up trash and donate to the beach. Involvement is ruled out as an alternative explanation.</td>
</tr>
</tbody>
</table>

Note: PO = psychological ownership.
on a lake. For our study, kayak renters were chosen for several reasons. First, according to the rental service, most kayak renters have minimal prior boating experience on this lake, reducing the likelihood that participants would feel an existing sense of ownership due to frequent experience with the lake. Second, kayaks are rented more frequently than other types of boats (e.g., canoes), thus providing a larger potential participant pool. Third, most kayaks are rented by one person, making it easier to observe individual behavior. Finally, unlike standup paddle boards, which are also popular for rentals, kayaks have the capacity to carry trash.

**Materials and procedure.** The lake where we conducted this study is 217 square miles with a maximum depth of 83 feet. We manipulated psychological ownership of the lake by asking (vs. not asking) kayak renters to think of and write down a nickname for the lake (Stoner, Loken, and Blank 2018). A pretest with 99 Amazon Mechanical Turk (MTurk) participants confirmed that kayakers who give a lake a nickname feel greater ownership than those who do not name a lake (Mname = 4.44 vs. Mno name = 3.68; F(1, 97) = 4.29, p = .041; for details, see Web Appendix W1).

The study was conducted over two weeks. Each morning, unbeknownst to the kayakers, we had a research assistant on a paddleboard plant four pieces of floating trash in the lake, anchored to ensure that the trash could not actually be removed and for consistent placement and visibility for the experimenters. The trash objects were two flip-flop sandals of different colors and two water bottles, placed far enough apart so as not to arouse suspicion. We wanted to ensure that each kayak would be forced to pass within six feet of a piece of planted trash regardless of the route of the kayak. We also wanted to be within watching range of the trash so that we could observe attempts at trash pickups with binoculars from the shore.

As patrons arrived, an office employee of the outdoor organization determined if they intended to rent a kayak and, if so, invited them to participate in the study. Kayak renters were told that researchers at the university were studying recreational usage of the lake. The experimental condition was alternated by hour, with start order reversed on alternating days. Participants in the psychological ownership condition were given a sheet of paper that asked them to think of, and write down, their own nickname for the lake and to bring it to the boat area. The instructions encouraged participants to say the nickname both to themselves and out loud as they were out kayaking. Participants in the control condition received a blank sheet of paper with a number to bring to the boat area.

All kayakers were given identical safety and instructional procedures and were told that “it is common practice to pick up any objects or trash you find floating in the lake.” The kayaks were then launched by employees of the rental company in an identical manner from the pier. At least two experimenters, one with a pair of binoculars, viewed the participants as they exited and entered the kayak launch area and recorded any attempts to pick up the floating objects. After the kayak was returned, participants completed a short survey (for study photos, see the Appendix).

**Measures.** Stewardship of the lake was assessed with an actual behavioral measure by recording the number of observed attempts to pick up planted trash items, as well as with a self-reported measure, “Did you pick up any trash or floating objects in the lake?” (“Yes/No”). Using a single seven-point Likert-type item, we also measured perceived cleanliness of the lake and prior and intended future usage of the lake as control variables. Psychological ownership (e.g., “I feel personal ownership toward the lake”; Peck and Shu 2009) and whether the participant thought of and repeated a nickname for the lake were measured as manipulation checks (for all measures and reliabilities for all studies, see Web Appendix W2).

**Results and Discussion**

**Results.** Of the kayak renters, 54 were in the psychological ownership (naming) condition and 81 in the control condition. Given the disparate group sizes, we tested for structural differences between the groups to ensure that participants were similar in their prior experiences and history with the lake. Levene’s test for equality of variances confirmed homogeneity of variances between groups for all scores (p > .23). The two groups perceived the lake as equally clean (MPO = 5.48 vs. Mcontrol = 5.42; F(1, 133) = .05, p = .82), had similar prior experience in using the lake (MPO = 1.07 vs. Mcontrol = 1.00; F(1, 133) = .39, p = .54), and had equal plans for using the lake again in the future (MPO = 6.39 vs. Mcontrol = 6.40; F(1, 133) = .001, p = .98).

More renters in the nickname condition than in the control condition indicated they had thought of a nickname (98% vs. 2%, respectively). Of those who thought of a nickname, 49% indicated that they said the nickname out loud at least once and 79% reported saying the name to themselves. Confirming that the manipulation was successful, kayakers who were asked to give the lake a nickname reported significantly greater psychological ownership of the lake than those in the control condition (MPO = 4.64 vs. Mcontrol = 2.78; F(1, 133) = 44.53, p < .001).

In support of H1, psychological ownership significantly affected stewardship of the lake. Of the 54 individuals in the psychological ownership condition, we observed 22 (41%) attempting to pick up the piece of anchored floating trash, compared with only 6 (7%) of the 81 individuals in the control condition (χ²(1, 135) = 22.06, p < .001). Furthermore, more participants in the psychological ownership condition than in the control condition self-reported actually picking up trash (28% vs. 7%; χ²(1, 135) = 10.11, p = .001).1 Binary logistic regressions find that including the measures of perceived cleanliness and prior and future intended usage of the lake in the model do not change the effect of psychological ownership on

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1 Because the trash was tied down, not everyone who tried to pick it up was actually able to do so.
stewardship behaviors (odds ratio [observed] = 8.23, p < .001; odds ratio [self-reported] = 4.70, p = .013).

Discussion. Confirming our predictions, results of Study 1 revealed that enhancing customers’ psychological ownership of a public good, in this case a lake, increased their stewardship behaviors. Customers who named the lake (vs. a control) actually picked up more trash and were more likely to report that they did so.

The results of Study 1 demonstrate an actual behavioral outcome of psychological ownership of a public good: picking up trash. In Study 2, we test perceived responsibility as the proposed process by which psychological ownership affects stewardship behaviors (H2) while examining an additional stewardship behavior, donating to care for the public good. We test alternative explanations as well. Because conscientiousness is known to be associated with moral behavior (Cohen et al. 2014), conscientiousness could explain the effects we are finding. It may also be that our psychological ownership manipulations are heightening participants’ public self-consciousness (Fenigstein, Scheier, and Buss 1975), leading to increased socially desirable behavior, or are decreasing perceived costs of stewardship behaviors. At the same time, we want to ensure that our manipulations are not causing discrepant elaborative processing (Nenkov, Inman, and Hulland 2007) across conditions. In Study 2, we test these proposed and alternate process accounts of our findings using another novel, actionable intervention to increase psychological ownership.

Study 2: Perceived Responsibility Mediates the Effect of Psychological Ownership on Stewardship

Method

Design and participants. Study 2 employed a single-factor (psychological ownership vs. control) between-subjects design with 249 participants from MTurk.

Materials and procedure. Participants were asked to imagine they were taking a walk in a park. To manipulate psychological ownership, we showed participants a park sign that read “Stoneview Park” and either “Welcome to the park” (control condition) or “Welcome to YOUR park” (psychological ownership condition; for stimuli, see the Appendix). A pretest with 104 MTurk participants using the same procedure as the main study confirmed that a “Welcome to YOUR (vs. the) park” sign elicited greater psychological ownership of the park (MPO = 3.76 vs. Mcontrol = 2.48; F(1, 102) = 16.07, p < .001, η2 = .136).

Measures. We measured perceived responsibility with four items (1 = “disagree strongly,” and 7 = “agree strongly”) which were generated for the purposes of this study based on prior research (Botti and McGill 2006; Feather 1996): “I feel a sense of responsibility for the park,” “I feel a sense of obligation to the park,” “I feel responsible for what happens to the park,” and “I feel accountable for the park.” We measured intention to pick up trash with two items: “While at this park, if I saw some plastic garbage, I would pick it up” and “I would make an effort to clear the park of debris.” We measured intended donation amount using a single slider-response question (S0–$100): “The park is soliciting donations for maintenance. If you had exactly $100 to donate to a nonprofit, what is the most you would donate to caring for this park?” Conscientiousness (Gosling, Rentfrow, and Swann 2003) was measured with seven items (e.g., “I usually worry about making a good impression”). Perceived costs of engaging in stewardship behavior was measured with five seven-point bipolar responses to the prompt, “To me, the act of cleaning up the park seems . . .” (e.g., I = “like it costs me a lot,” and 7 = “like it doesn’t cost me too much”), developed for the purposes of this study. We measured elaboration (Nenkov, Inman, and Hulland 2007) with five items (e.g., “I tried to anticipate as many consequences of my actions as I could”) in response to the prompt, “When thinking about your actions in the scenario in this study, how much did each of the following statements apply to your decisions?”

Results and Discussion

Results. In support of H1, an analysis of variance (ANOVA) revealed a significant effect of psychological ownership on stewardship behaviors of intention to pick up trash (MPO = 5.35 vs. Mcontrol = 4.91; F(1, 247) = 4.74, p = .030, η2 = .019) and intended donation amount to help park management with maintenance (MPO = $32.35 vs. Mcontrol = $24.08; F(1, 247) = 5.08, p = .025, η2 = .02). An ANOVA revealed a significant main effect of psychological ownership on perceived responsibility for the park (MPO = 4.58 vs. Mcontrol = 3.55; F(1, 247) = 20.48, p < .001; η2 = .077).

We conducted all mediation analyses presented in this article using PROCESS (Hayes 2018) with 10,000 bootstrap samples. We ran mediation analysis (PROCESS Model 4) with psychological ownership as the independent variable and stewardship behaviors (i.e., intention to pick up trash and donation amount) as dependent variables, along with perceived responsibility as a mediator. In support of H2, results revealed significant indirect effects of psychological ownership on intentions to pick up trash (95% confidence interval [CI95%] = [.21, .66]) and on donation amount (CI95% = [3.08, 9.84]), all mediated through perceived responsibility (for details, see Appendix W3).

Alternative process accounts. Psychological ownership did not affect conscientiousness (F(1, 247) = 2.77, p = .10), public self-consciousness (F(1, 247) = 1.13, p = .29), perceived costs (F(1, 247) = 1.21, p = .27), or elaboration (F(1, 247) = 1.02,
Financial stewardship. Furthermore, bootstrapping analysis (PROCESS Model 4; Hayes 2018) with responsibility and each variable as parallel mediators revealed indirect effects through responsibility but not through each alternate account (details in Appendix W3). Thus, these explanations do not adequately account for our findings.

Discussion. Using a novel and actionable manipulation of psychological ownership, we replicated the results of Study 1, demonstrating again that enhancing psychological ownership of a public good increases stewardship behaviors. We further demonstrated that perceived responsibility is the underlying mechanism explaining the effect of psychological ownership on stewardship behaviors, including intention to pick up trash and donate to the public good. We rule out that this effect is driven by elaboration, public self-consciousness, conscientiousness, and perceived costs of engaging in stewardship behaviors.

The results of Study 2, while illuminating, were based on a hypothetical scenario. In Study 3, we return to the field with a third novel, actionable intervention to increase psychological ownership to investigate whether these relationships hold for another impactful measure of stewardship: actual donation behaviors. We also test additional stewardship behaviors, including intention to volunteer, and willingness to promote the public good using social media.

Study 3: Psychological Ownership of a Public Park Affects Actual Financial Stewardship

Psychological ownership theory suggests that when consumers invest themselves in a target, such as when they customize (Moreau 2011) or cocreate it (Wang et al. 2019), their sense of ownership will increase (Pierce, Kostova, and Dirks 2003). This investment of time and/or labor to increase feelings of ownership corresponds to an assertion by Locke (1690) that a person is likely to feel ownership over what they create because a person owns their own labor. Having park visitors plan a route on a map (vs. not plan) is a greater investment of their time and energy that will likely lead to greater feelings of ownership for the park. Therefore, in Study 3, we design a psychological ownership manipulation in which park visitors invest themselves by planning (vs. not planning) their route using a park map.

Method

Participants and design. Study 3 employed a single-factor (psychological ownership vs. control) between-subjects design with 161 renters of cross-country skis and snowshoes in a state park. In partnership with the park, we worked alongside the equipment rentals in soliciting donations to the park. The equipment rental staff programmed their PayPal application to enable patrons to add an additional dollar to the rental fee for donation to the park. This served as our key behavioral measure of financial stewardship.

Materials and procedure. The state park covers more than 1,000 acres, with 11 miles of groomed and 2.5 miles of lighted cross-country ski trails. While all renters were offered a park map, we manipulated psychological ownership of the park by either asking or not asking participants to plan their route on the map. A pretest with 100 MTurk participants confirmed that those who planned (vs. did not plan) a route on a map prior to skiing/snowshoeing felt greater ownership of a park (M_Po = 3.34 vs. M_control = 2.53; F(1, 98) = 6.33, p = .013, η² = .06; for details, see Appendix W4).

We conducted the study over four weeks in February. We collected data on two Wednesday evenings, two Saturdays, and two Sundays, alternating conditions and counterbalancing by day of the week. As renters arrived, a rental employee greeted the participants and asked if they were renting skis or snowshoes. Following renters’ completion of the park’s standard liability waiver, the employee offered them a map, asked for their shoe size, and, in the control (i.e., no planning) condition, retrieved the equipment. However, in the psychological ownership (i.e., planning) condition, before retrieving the equipment, the employee asked them to plan a route they might take on the map. All renters were then charged for their rental equipment and the employee asked whether they would like to add a dollar to the rental fee to help the park. After they returned their rental equipment, participants completed a short survey (for study photos, see the Appendix).

Results and Discussion

Results. A total of 161 renters participated, with 82 in the psychological ownership condition and 79 in the control condition (79 men, 79 women, 3 other). Gender (p > .44) and number of people in their group (M = 2.14 vs. M = 2.04; p > .37) did not vary by experimental condition. Participants who planned their route reported greater psychological ownership (M = 4.74) than those who did not (M = 3.83; F(1, 159) = 18.88, p < .001, η² = .106); therefore, the manipulation was successful.

Our key behavioral dependent measure was whether renters added a dollar to their total rental bill as a park donation. While all participants completed a survey and were exposed (not exposed) to the psychological ownership manipulation, in some cases, one individual paid for multiple participants’ rental fees. This was expected in a field setting given that individuals may naturally arrive in pairs or groups. Therefore, not every participant was asked for a donation. Specifically, 43 of 82 renters in the psychological ownership condition and
49 of 79 in the control condition paid for the rentals and were asked to donate.

In support of H1, among the paying participants (N = 92), more participants donated when they planned their route (86%) than when they did not (32.7%; χ²(1) = 26.74; p < .001). The remaining analyses were conducted on the full set of study participants (N = 161; for replication analyses on the paying participants subgroup [N = 92] with similar results, see Web Appendix W4). Participants who planned (vs. did not plan) their route were more likely to volunteer to help the park (MPO participants subgroup [N = 92] with similar results, see Web Appendix W4). Participants who planned (vs. did not plan) their route were more likely to volunteer to help the park (MPO = 4.43 vs. M_control = 3.49; F(1, 158) = 15.22, p < .001, η² = .09), donate in the future (MPO = 4.86 vs. M_control = 3.90; F(1, 158) = 15.08, p < .001, η² = .09), like the park on Facebook (MPO = 4.99 vs. M_control = 3.84; F(1, 158) = 14.60, p < .001, η² = .08), and post on Instagram using the park’s hashtag (MPO = 4.12 vs. M_control = 3.06; F(1, 158) = 10.71, p = .001, η² = .06).

In support of H2, mediation analysis (Hayes 2018; PROCESS Model 4) revealed significant indirect effects of psychological ownership on actual donations (CI95% = [.47, 2.66]) and intentions to volunteer (CI95% = [.16, .67]), donate in the future (CI95% = [.27, .92]), like the park on Facebook (CI95% = [.20, .84]), and post on Instagram in the park’s hashtag (CI95% = [.08, .60]), all mediated through perceived responsibility (Web Appendix W4, Tables W4–2 and 3).

**Discussion.** The objective of Study 3 was to examine the effect of a third actionable manipulation of psychological ownership in the field (planning vs. not planning a route) on a consequential stewardship measure, actual donation behavior. Investing time and/or energy in a target leads to a greater feeling of ownership (Pierce, Kostova, and Dirks 2003). Thus, we expected that the effort to plan a route prior to skiing/snowshoeing would result in more psychological ownership of the park and thus increase stewardship behaviors. Replicating the results of Studies 1 and 2 and in support of H1, participants who felt higher ownership (vs. the control group) donated more to the park and were more likely to volunteer, donate in the future, and promote the park to others using social media. In support of H2, these effects were mediated by perceived responsibility.

In our final study, we test our proposed moderator, diffusion of responsibility. We also measure place attachment as an alternative account for our findings. Place attachment has been used, mostly in environmental psychology, to describe the bond between a person and a place (Halpenny 2010) and often includes being attached to a place for social facilitation of interpersonal relationships (Scannell and Gifford 2010). In contrast to psychological ownership, place attachment often has a subdimension called place dependence, which is the relative quality of a place compared with similar other places (Ramkisson, Weiler, and Smith 2012). While this dependence is not necessary for a feeling of ownership, another dimension is often referred to as place identity (Halpenny 2010), which relates a place to an aspect of the self. This dimension of place attachment has some overlap with psychological ownership, as an owned (Belk 1988) or a psychologically owned (Pierce, Kostova, and Dirks 2003) target has been noted as an extension of the self in the ownership literature. Because of this, we measure place attachment in Study 4 as a potential alternative explanation.

**Study 4: A Diffusion of Responsibility Cue Dampens the Effect of Psychological Ownership on Stewardship Ownership on Stewardship**

**Method**

**Participants and design.** Study 4 employed a 2 (psychological ownership vs. control) × 2 (diffusion of responsibility cue: attendance sign vs. no attendance sign) between-subjects design. Undergraduate students (N = 588) completed this study for course credit.

**Materials and procedure.** To identify an appropriately large number of visitors for the attendance sign, we reviewed attendance data at U.S. national and state parks. Hundreds of national and state parks (National Park Service 2020), including one approximately an hour from the campus where this study was conducted, had more than one million recreational visitors in 2018 (i.e., more than 19,230 visitors per week on average). Therefore, we chose a weekly attendance number that might reasonably be expected to appear on an attendance sign during seasonal visitation periods: 22,452 visitors.

When students entered the lab, a researcher randomly assigned them to condition and gave them a paper survey about an “Outdoor Activity Study” (for stimuli, see the Appendix). The researcher also provided them with an envelope containing seven quarters and said, “These quarters are being provided to you as an additional thank you for participating in this research study.” To ensure that they felt ownership of the quarters, the researcher said, “You might find them useful for the washing machines or dryers on campus.” Under the survey was an empty envelope labeled “Park Donation” coded with the survey ID.

In the survey, students read the following scenario:

Stoneview Park is a public park about 1 hour from [name of college town]. They have a nonprofit conservancy that maintains the park, and they are asking a variety of people to provide their opinions regarding various aspects of the park. Below is the sign at the entrance to the park.

Students then saw the same Stoneview Park sign psychological ownership manipulation as in Study 2. Instructions continued:

[Diffusion of Responsibility]: The park has installed an attendance sign. Please imagine that you are walking through the park, and you see this attendance sign: “This week, you are visitor #22,452.”

[Control]: Please imagine that you are walking through the park.

**Measures.** We measured perceived responsibility as in Studies 2 and 3 and intention to pick up trash as in Study 2. We measured...
intention to volunteer with three item responses (1 = “unlikely/improbable/impossible,” and 7 = “likely/probable/possible”) to “Imagine that you saw a sign-up sheet for volunteers to help care for the park. How likely would you be to sign up as a volunteer?” We measured intention to repair damage to the park with a single item (1 = “disagree strongly,” and 7 = “agree strongly”): “If there were storm damage, I would volunteer my time to clean up the park.” To capture donation behavior, at the end of the survey, we reminded students of the quarters they were given at the start of the study.

If you wish to make a donation to the park, you may take any or none of the quarters and place them into the empty envelope marked Park Donation. Please seal the envelope when you are finished and place it in the drop box on your way out, even if it is empty. How much you choose to donate, or whether you donate anything at all, is completely up to you. No one will know if you made a donation, or how much you donated.

We also measured the dependence and identity factors of place attachment (Williams and Vaske 2003) with six items (1 = “disagree strongly,” and 7 = “agree strongly”), including “No other park can compare to this park” and “I am very attached to the park.” To test for other possible confounds related to an attendance sign, we also included three additional measures: perceived cleanliness of the park (e.g., “I think this park is dirty/clean”), perceived similarity to other park attendees (e.g., “The people in the park are unlike/like me”), and involvement (Zaichkowsky 1994; for measures, see Web Appendix W2).

Results

Manipulation check. A two-way ANOVA revealed that participants who viewed the “your” park (vs. “the” park) sign reported significantly higher psychological ownership ($M_{PO} = 3.13$ vs. $M_{control} = 2.26$; $F(1, 584) = 71.56, p < .001, \eta^2 = .109$; for details, see Web Appendix W5). Thus, the psychological ownership manipulation was successful.

Direct effects. We first tested the direct effect of psychological ownership on stewardship behaviors. A two-way ANOVA revealed significant positive main effects of psychological ownership on intentions to (1) pick up trash ($M_{PO} = 4.89$ vs. $M_{control} = 4.55$; $F(1, 584) = 11.02, p = .001, \eta^2 = .019$), (2) volunteer ($M_{PO} = 4.03$ vs. $M_{control} = 3.73$; $F(1, 584) = 6.45, p = .011, \eta^2 = .011$), and (3) repair storm damage ($M_{PO} = 4.39$ vs. $M_{control} = 4.02$; $F(1, 584) = 7.52, p = .006, \eta^2 = .013$), as well as on (4) the actual donation to the park ($M_{PO} = $1.27 vs. $M_{control} = $.61; $F(1, 584) = 145.74, p < .001, \eta^2 = .20$; for details, see Web Appendix W5).

Interaction effects. We then tested whether the direct effect of psychological ownership on stewardship would be attenuated in the presence of a diffusion of responsibility cue (the attendance sign). We found a significant interaction between psychological ownership and diffusion of responsibility on volunteering intention ($F(1, 584) = 6.54, p = .011, \eta^2 = .011$) and actual donation amount ($F(1, 584) = 8.00, p = .005, \eta^2 = .014$). The positive effect of psychological ownership on intention to volunteer ($M_{PO} = 4.23$ vs. $M_{control} = 3.62$; $F(1, 584) = 13.17, p < .001, \eta^2 = .022$) was attenuated in the presence of a diffusion of responsibility cue (the attendance sign; $M_{PO} = 3.83$ vs. $M_{control} = 3.83$; $F(1, 584) = .00, p = .989, \eta^2 = .00$; see Figure 1). Similarly, the positive effect of psychological ownership on donation amount ($M_{PO} = $1.41 vs. $M_{control} = $.59; $F(1, 584) = 112.55, p < .001, \eta^2 = .162$) was also attenuated in the presence of the attendance sign ($M_{PO} = $1.13 vs. $M_{control} = $.62; $F(1, 584) = 42.15, p < .001, \eta^2 = .067$). The interactions on picking up trash and repairing storm damage were not significant ($p > .12$).

We also conducted a two-way ANOVA with psychological ownership and diffusion of responsibility as the independent variables, and perceived responsibility as the dependent variable. Results revealed a main effect of psychological ownership on responsibility ($M_{PO} = 4.10$ vs. $M_{control} = 3.25$; $F(1, 584) = 61.63, p < .001, \eta^2 = .095$; see Figure 1) along with a significant interaction ($F(1, 584) = 9.82, p = .002, \eta^2 = .017$). As we predicted, the positive effect of psychological ownership on responsibility ($M_{PO} = 4.30$ vs. $M_{control} = 3.10$; $F(1, 584) = 61.16, p < .001, \eta^2 = .095$) was attenuated in the presence of the attendance sign ($M_{PO} = 3.91$ vs. $M_{control} = 3.39$; $F(1, 584) = 10.98, p = .001, \eta^2 = .018$).

Moderated mediation. To test $H_3$, we conducted moderated mediation analyses using bootstrapping (Hayes 2018, PROCESS Model 8), with psychological ownership as the independent variable, stewardship as the dependent variable, perceived responsibility as the mediator, and diffusion of responsibility as the moderator. We repeated the analysis for each of the four stewardship dependent measures (Hayes 2018). In support of $H_3$, significant indices of moderated mediation revealed that the conditional indirect effects of psychological ownership on the four measures of stewardship through responsibility were lower when participants saw the attendance sign than when they did not (pick up trash: CI95% = [−.42, −.09]; volunteer: CI95% = [−.51, −.11]; repair storm damage: CI95% = [−.49, −.11]; donation: CI95% = [−.21, −.05]; for details, see Web Appendix W5). Thus, the effect of psychological ownership on stewardship behaviors through perceived responsibility diminishes in the presence of a diffusion of responsibility cue.

Alternate accounts. A multivariate ANOVA with psychological ownership and diffusion of responsibility cue as fixed factors and the two place attachment factors as dependent variables revealed main effects of psychological ownership on each attachment factor, but no significant interaction ($p > .35$). Furthermore, results of moderated mediation analyses (Hayes 2018, PROCESS Model 8) with psychological ownership as the predictor, stewardship behaviors as dependent variables, and perceived responsibility and both place attachment factors as parallel mediators revealed that only perceived responsibility remains significant as a conditional mediator. We tested
involvement, cleanliness of the park, and similarity to other visitors in the same manner, and again, only perceived responsibility remained significant as a conditional mediator (for details, see Web Appendix W5). Therefore, these alternatives do not adequately account for our findings.

Discussion

Replicating results of our prior studies, Study 4 once again demonstrates that use of a simple, actionable intervention to enhance psychological ownership of a park (a “Welcome to YOUR park” sign) leads to increased stewardship behaviors, including actual donations and intentions to pick up trash, volunteer time, and repair storm damage. However, we also demonstrate that a commonly used device, an attendance sign, can diffuse responsibility, thereby dampening the effect of psychological ownership on stewardship. We replicate the results of Studies 2 and 3 to show that these results are explained by customers’ feelings of responsibility for the public good. Place attachment, involvement, perceived cleanliness of the park, or similarity to other park visitors do not adequately explain these findings.

General Discussion

Theoretical Implications

Researchers have issued calls to use marketing knowledge to address issues of sustainability for public resources (Griskevicius, Cantú, and Van Vugt 2012; Shultz and Holbrook 1999). The tragedy of the commons is a well-known problem for public goods, and marketers and policy makers have struggled to develop solutions that can encourage community members to better care for those public resources. Whereas most proposed solutions focus on restructuring incentives or invoking social pressure, we proposed and have demonstrated that an individual-level behavioral intervention of increasing psychological ownership is able to affect nonowners’ behavior toward these resources. In our studies, we show that manipulations designed to increase psychological ownership, such as giving a nickname to a lake (Study 1), seeing a “welcome to YOUR park” sign (Studies 2 and 4), or planning a route with a map (Study 3), can inspire effortful and financial stewardship behaviors via stronger feelings of responsibility. We also demonstrate that cues of others’ use can cause a diffusion of responsibility, such that the effects of psychological ownership do not always carry through to increase stewardship behaviors. Although prior work has shown that an ownership mentality can lead to higher financial valuation of environmental improvements via moral responsibility (Irwin 1994), we believe that this work is the first to use psychological ownership to change actual stewardship behaviors for the benefit of public goods.

Beyond our contributions to the psychological ownership literature by expanding its application to public goods rather than private goods, and to the public goods literature by suggesting a novel solution to the tragedy of the commons, this research provides some insights to work on different types of stewardship behaviors, on perceived responsibility, and on diffusion of responsibility. Stewardship has previously been defined as an attitude or feeling (Hernandez 2012), but in our studies we measure stewardship through effortful care behaviors (e.g., picking up trash) or financial contributions. Work on perceived responsibility (Feather 1996; Irwin 1994) has

Figure 1. The effect of psychological ownership on stewardship as a function of diffusion of responsibility cue (Study 4).
found that positive levels lead to positive environmental and charitable behaviors, and we add to that work by showing that increased psychological ownership can increase these feelings of responsibility. Finally, we contribute to the research on diffusion of responsibility (e.g., Darley and Latané 1968; Fischer et al. 2011) by using a numerical sign as a cue of presence of others rather than actual presence.

**Managerial Implications**

A significant focus of this article is its use of actionable interventions for increasing psychological ownership in public goods settings. As noted in the introduction, these interventions build on the psychological ownership antecedents of investing the self in the target, controlling the target, and intimately knowing the target. Table 2 summarizes the interventions in our studies, including additional studies reported in Web Appendix W6, and organizes them according to the relevant antecedent. The studies presented herein primarily use interventions built around investment of the self (naming, planning a route, or a “YOUR park” sign), but we have also been able to successfully affect psychological ownership via interventions built around perceived control (reserving a section of the park) or intimate knowledge (prior experience or developing consumers’ expertise about the space). Similarly, some private good interventions built around perceived control can be difficult to mimic for public goods because many previously used interventions (e.g., physical control, restricted access, actual legal ownership) are naturally limited for targets that are community owned. Instead, interventions that allow temporary control, such as allowing consumers a voice in resource allocation decisions (Lamberton 2013), reserving a picnic area within a park, or allowing for customization during use of a public good, offer new opportunities for devising interventions suitable in both private and public goods settings.

In this article, we focus exclusively on cases of public goods, but these findings may also have implications for goods with other types of collective ownership arrangements. The sharing economy, in which consumers temporarily use resources that belong to other community members, has become prevalent, and marketing researchers’ interest in it is growing (Belk 2013; Eckhardt et al. 2019; Lamberton and Rose 2012). Taking care of these shared resources is an important concern for managers of these systems. Our findings can inform ways to increase care not only for shared objects (e.g., bicycle sharing, car sharing) and space sharing (e.g., office spaces, apartments) but also for social issues such as reducing energy consumption. Additional ideas for increasing psychological ownership in shared or communal contexts may come from research on collective psychological ownership in work environments (Pierce and Jussila 2010).

**Future Research**

Several of our study results raise additional questions about how feelings of ownership are affected by the individual’s place in a larger social network. Our studies intentionally focus
on individual psychological processes, but we acknowledge that our effects are likely multiply determined. Consideration of social influences on behavior can incorporate a wider set of interventions and possible processes than what we test. For example, the social links to a place that define a target as collectively “ours” are a central theme in the research on place attachment. Halpenny (2010) has called for more research exploring the formation and effects of place attachment; we believe that collective psychological ownership (Pierce and Jussila 2010) may have a role in the development of place attachment, both via place identity and dependence. Social influences on behavior also raise questions about how individuals collaborate to solve stewardship problems. More individualistic feelings, such as altruism and psychological ownership, may operate alongside collective ones, such as fairness, social norms, and cooperation. Some interventions could even put these feelings in conflict with each other. The number of visitors sign used in Study 4 dampens the effects of individual psychological ownership, but signs that highlight positive behaviors by other visitors could be used to encourage social norms about not littering (Goldstein, Cialdini, and Griskevicius 2008). Thus, reminders of others who may also feel responsible reduce individually motivated behaviors but also offer potential for increasing collective behaviors, suggesting that managers should take care in how they craft the message. These social aspects of stewardship and shared ownership are distinctly different from the individual-level psychological ownership investigated in our studies but are a ripe area for future research. Diffusion of responsibility may also be affected by such factors as the size of the public good, the number of others present at one time, or perceived similarity to others, also providing subjects for future research.

The number of others present, used as part of our diffusion of responsibility manipulation in Study 4, is an important topic for additional research. We found that an attendance sign diffuses responsibility and compromises care behaviors. We chose to use a sign with more than 20,000 other people, and although we did not directly test this in that study, the specific number of other people could have a significant effect on behavioral actions. As reported in Web Appendix W5, a posttest run for Study 4 explored how diffusion of responsibility changes for attendance signs with numbers 2, 5, 82, 152, 352, 1,452, and 22,452. While we found an overall positive linear effect of the sign manipulation on diffusion of responsibility, such that increasing numbers on the sign resulted in increased perception that others felt responsibility for the park, we also note that the pattern is not perfectly monotonic, suggesting that some numbers may affect stewardship more than others. Future research could work to better understand this interesting pattern of results.

Whether diffusion of responsibility differentially affects various stewardship behaviors would be an interesting subject for future research. In Study 4, while we did find moderated mediation effects through perceived responsibility on all four stewardship measures, the effect of psychological ownership on picking up trash and repairing storm damage was not directly dampened by the presence of the attendance sign. Donating and volunteering are focused on maintaining and improving the target of ownership, whereas picking up trash and repairing storm damage are focused on restoring the target to its original (“owned”) state. It is possible that a sense of loss due to a storm or someone leaving trash inhibits the dampening of stewardship responses that might otherwise result from a diffusion of responsibility cue. This notion is not inconsistent with prior research, which has found that people who feel ownership of an idea are more inclined to accept others’ suggestions that add to the idea but less accepting of suggestions that detract from it (Baer and Brown 2012).

Several of our studies use financial contribution as a measure of stewardship and find that increases in psychological ownership increase contributions. While we focus on public goods, it is reasonable to wonder whether similar interventions could work for increasing feelings of ownership toward charitable targets and thus be used to increase other types of prosocial giving (for a review of prosocial consumer behavior, see Small and Cryder [2016]). Research on prosocial behavior often focuses on either the motivations of the giver (e.g., reputational benefits) or the deservedness of the recipient (e.g., neediness). For example, identifying a victim (even independent of personal information) can increase caring behaviors by providing a specific target for the donation (Small and Loewenstein 2003; Small, Loewenstein, and Slovic 2007). Our findings suggest that increases in psychological ownership may affect not only the motivation of the giver to protect what "mine" but also the feelings of responsibility toward the target itself. Future research could directly explore the role of psychological ownership in prosocial behavior, either before or after a charitable donation takes place.

**Conclusion**

Marketeters often use techniques implicitly designed to enhance consumers’ psychological ownership and stewardship behaviors for public resources. For example, many municipalities in the United States invite consumers and businesses to “adopt a highway,” and wildlife refuges issue certificates to donors who choose animals for their personal protection. Voting can increase psychological ownership (Fuchs, Prandelli, and Schreier 2010), and the National Park Service livestreams salmon-feasting bears at Katmai National Park in Alaska, inviting viewers to vote on their favorite hefty bear. Examples abound of nonowners who make the effort to care for shared resources, whose behavior seems to imply a high psychological ownership for those items. For example, large numbers of dedicated football fans willingly volunteer to clear snow from their favorite team’s stadium for minimal pay (e.g., Clayton 2012), and thousands of individuals build and maintain Little Free Libraries in their communities (Guarino 2015). Our studies offer some evidence of the psychology of ownership that may underlie such generous behaviors. We hope that these ideas inspire other researchers to also get involved in these efforts.
Appendix: Study Photos and Stimuli

![Figure A1. Kayaks Waiting to be Rented (Study 1)](image1)
![Figure A2. Trash on Anchors (Study 1)](image2)
![Figure A3. Research Assistant Paddleboarding to Plant Trash (Study 1)](image3)

![Figure A4. Stoneview Park Stimuli, Low PO (Studies 2 and 4)](image4)
![Figure A5. Stoneview Park Stimuli, High PO (Studies 2 and 4)](image5)

![Figure A6. Cross-Country Ski Rental Counter (Study 3)](image6)
![Figure A7. Planning a Route in High PO Condition (Study 3)](image7)

![Figure A8. Attendance Sign (Study 4)](image8)

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References


