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I'm Nice, Therefore I Go Green:
An Investigation of Pro-environmentalism in Communal Narcissists

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I'm Nice, Therefore I Go Green: An Investigation of Pro-environmentalism in Communal Narcissists

Abstract

This work investigates the role that communal narcissism plays in consumers' pro-environmental decisions. Five studies suggest that while communal narcissists claim that they are pro-environmental, their behaviors do not support such claims. The findings indicate that communal narcissists may see pro-environmental actions as communal means that could potentially serve their agentic, self-directed motives. However, when pro-environmental actions are expected to pose a threat to self-interest, the 'me first' aspect of narcissism plays a more dominant role, resulting in lack of inclinations to engage in pro-environmental actions. This work also provides evidence for two boundary conditions (product public visibility and perceived social benefits) under which communal narcissists may behave more pro-environmentally. Theoretical and practical implications, limitations, as well as directions for future research are also discussed.

Keywords

Narcissism, Communal narcissism, Pro-environmental behavior, Green consumption, Self-interest, Sustainability

1. Introduction

The planet's natural resources are being depleted at an alarming rate. In response, more and more people understand that we need to sustainably manage our planet's resources and ecosystems. Despite such a significant shift, people's consumption behaviors do not always synch with their beliefs and the presence of an 'attitude-behavior gap' has been widely acknowledged (Pickett-Baker & Ozaki, 2008). At the core of many environmental challenges is a conflict between personal and collective interests (e.g., van Vugt, 2009; van Vugt, Griskevicius, & Schultz, 2014). In this way, environmental challenges may resemble a *tragedy of the commons* social dilemma (Hardin, 1968): People learn that they can profit at the expense of others by drawing just a little bit extra from a common resource pool (e.g., a pond of fish or a forest of trees), thereby leading to the depletion and destruction of the natural resource. To the extent that humans are highly motivated to maximize self-related outcomes, even at the expense of others, one of the main barriers to sustainable consumption may be self-interest (e.g., Dietz, Ostrom, & Stern, 2003; Hawkes, 1992; van Vugt et al., 2014). Could self-interest, therefore, provide a reasonable explanation for why consumers' pro-environmental beliefs and attitudes do not always lead to pro-environmental actions?

In an attempt to answer this question, the present investigation focuses on a specific self-oriented characteristic of individuals called narcissism, which is formally defined as a persistent pattern of grandiosity, self-focus, and self-importance (American Psychiatric Association, 1994). While traditionally diagnosed as a personality disorder, narcissism is more recently regarded as a normal personality trait (e.g., Campbell, 2001; Paulhus, 2001; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004) that is associated with self-absorption, egocentrism, sense of entitlement, and disregard for others (Campbell & Foster, 2007; Emmons, 1984; Raskin & Hall, 1979). In the context of sustainability and green consumption, research shows that narcissists are generally reluctant to engage in pro-environmental behaviors (Naderi & Strutton, 2014, 2015). However, when eco-friendly products could function as a status symbol, consumers with higher narcissistic characteristics would be willing to 'go green' in order to signal their higher status (Naderi & Strutton, 2014, 2015). While these studies provide preliminary insights on the role that narcissism plays in an individual's tendency to engage in pro-environmental behavior, they are focused only on the agentic side of narcissism. This study, however, aims to investigate the communal side of narcissism as formulated in the agency-communion model (ACM; Gebauer,

Sedikides, Verplanken, & Maio, 2012). According to this model, both agentic and communal narcissists hold exaggerated, inflated, or unrealistically positive self-views. However, agentic narcissists possess such views in the agentic (self-focused) domain (e.g., competence and authority) whereas communal narcissists possess such views in the communal (other-focused) domain (e.g., helpfulness and trustworthiness). In other words, communal narcissists believe that they are better than others, but they cherish their status as *givers*, rather than *takers* (Malkin, 2015). In fact, a recent study (Nehrlich, Gebauer, Sedikides, & Schoel, *in press*) shows that communal narcissists self-enhance in the pro-social domain, and that communal narcissists, compared to their non-narcissistic counterparts, see themselves as more pro-social, but they do not behave any more pro-socially than their non-narcissistic counterparts.

Informed by the agency-communion model of narcissism, and in an attempt to extend the findings of Nehrlich et al.'s (*in press*) work, the present investigation aims to: (1) examine whether communal narcissists hold exaggerated self-views about their pro-environmentalism, (2) investigate whether and why communal narcissists' pro-environmental self-views are/are not reflected in actual pro-environmental behavior, and (3) explore certain conditions under which communal narcissists may behave more pro-environmentally. In this way, the current work uncovers a powerful but relatively understudied psychological barrier to sustainable consumption while also providing prescriptions for practitioners and policy makers about how to overturn the deleterious consequences of narcissism for sustainable consumption.

2. Communal narcissism and pro-environmentalism

In addition to holding unrealistically positive self-views (Campbell, Rudich, & Sedikides, 2002; Gabriel, Critelli, & Ee, 1994; John & Robins, 1994), narcissists spend a good deal of effort to be noticed, surpass others, and make themselves look and feel positive, special, successful, and important (Campbell & Foster, 2007; Campbell, Reeder, Sedikides, & Elliot, 2000). Various models have been proposed in order to distinguish different facets of this construct. Specifically, the two models that are more recently proposed are the narcissistic admiration-rivalry model (Back et al., 2013) and the agency-communion model of narcissism (Gebauer et al., 2012). The first model decomposes narcissism into two distinct, but related dimensions: admiration (agentic self-enhancement) and rivalry (antagonistic self-protection). While the admiration dimension of narcissism could have clear implications for environmental research (narcissists are motivated to make a good impression on their peers; Morf & Rhodewalt, 2001), conceptualizing direct

environmental implications for the rivalry dimension would be challenging, if at all possible. The second model distinguishes between two domains of narcissism: agentic narcissism and communal narcissism. According to this model, both agentic and communal narcissists possess similar core self-motives for grandiosity, esteem, entitlement, and power (agentic core motives). However, as briefly discussed, agentic narcissists self-enhance in the agentic domain whereas communal narcissists self-enhance in the communal domain. This model was used as the theoretical basis of this research for two main reasons. First, the communal domain of narcissism, as defined in the agency-communion model, directly deals with other-focused self-views, which could have clear implications for environmental research. Second, previous research examining pro-environmental behavior by agentic narcissists (e.g., Naderi & Strutton, 2014) has used a multidimensional measure (i.e., Narcissistic Personality Inventory; Raskin & Hall, 1979; Raskin & Terry, 1988), which is in line with the formulation proposed in the agency-communion model.

On the agentic side, narcissists tend to seek others' attention and constantly brag about their achievements (Campbell & Foster, 2007). In addition, displaying high-status material goods and associating with high-status individuals are two common tactics employed by this group (Campbell & Foster, 2007). Agentic narcissists, for instance, are more likely to wear expensive, flashy, and neatly kept clothing (Vazire, Naumann, Rentfrow, & Gosling, 2008), prefer to shop at higher-end retail stores (Naderi & Paswan, 2016), and are more interested in scarce, exclusive, customizable, and personalizable products (Lee & Seidle, 2012; Lee, Gregg, & Park, 2013). Communal narcissists, in contrast, are described as individuals who regard themselves as nurturing, understanding, and empathic (Malkin 2015). They are deeply motivated to elevate their social status above the rest of humanity based on their exceptional capacity for selflessness, generosity and altruism. Such individuals characterize themselves as 'the most helpful,' 'the most caring,' and 'amazing listeners' who can 'solve the world's problems,' 'bring freedom to the people,' 'make the world a much more beautiful place,' and 'increase people's well-being,' as operationalized in the Communal Narcissism Inventory (Gebauer et al., 2012). However, a recent study shows that while communal narcissists hold inflated self-views about their pro-sociality, such self-views are not reflected in their actual behavior (Nehrlich et al., *in press*). Similarly, another study reveals that although communal narcissism is related to self-reported pro-social behavior among adolescents, it is also associated with peer-reported aggression

(Barry, Lui, Lee-Rowland, & Moran, 2017). Yet another study by Giacomini and Jordan (2015) shows that communal narcissists behave less communally and display less communal self-enhancement when their agentic need for power is validated.

3. The present investigation

In the context of sustainability and pro-environmental consumptions, research shows that agentic narcissism is negatively associated with consumers' support of pro-environmental behavior and willingness to pay more to protect the environment (Naderi & Strutton, 2014, 2015). These findings are in line with the agency-communion model. Pro-environmental actions generally benefit the environment and society at large (communal), and agentic narcissists are expected to be indifferent about actions in the communal domain. In contrast, since pro-environmentalism could indicate that someone is kind, caring, or altruistic, communal narcissists are expected to self-enhance in this domain and possess unrealistically positive self-views about their superior pro-environmentalism. This proposition is tested in Study 1. Study 2 then examine whether communal narcissists' inflated self-views about pro-environmentalism are reflected in actual pro-environmental behavior. Study 3 replicates the findings of Study 1 in a more controlled setting (behavioral laboratory). Study 3 also investigate the proposition that communal narcissists hold their pro-environmental self-views only to the extent that no threat to their selfish core is expected. Study 4 and Study 5 then test two theoretically and practically relevant boundary conditions (visibility and social benefits of an eco-friendly products). In each study, the rules for terminating data collection (determined before data collection began), all data exclusions (if any), all manipulations, and all theoretically relevant measures are reported. All studies were run in a single wave; data were analyzed only after the required sample size target was met.

4. Study 1

Study 1 investigates whether communal narcissists hold excessively positive self-views about their pro-environmentalism. According to the agency-communion model, communal narcissists hold unrealistically positive self-views in the communal domain. Pro-environmental actions, whose long-term benefits are mostly directed toward the environment and society, are likely to be perceived as communal, thus motivating communal narcissists to self-enhance in this domain in an attempt to validate and enhance their inflated positive self-views. This proposition is tested across five different measures of self-reported pro-environmental behaviors.

4.1. Participants and procedure

Two hundred fifty-two participants (target sample size was 250) located in the United States were recruited from Amazon's Mechanical Turk (MTurk) and were compensated \$1 upon completion of the study. They ranged from 18 to 72 years old ($M_{age} = 34.84$, $SD = 10.63$) and were predominantly male (59.9%). Slightly over half of the participants (50.8%) reported annual household income of \$50,000 or less, followed by 36.9% of the participants who reported \$51,000-\$100,000 as their annual household income.

The online questionnaire included 37 items measuring the focal constructs of the study. The constructs as well as the statements measuring each construct were presented randomly in order to minimize any order effects. Communal narcissism was measured using the 16 items of the Communal Narcissism Inventory (CNI; Gebauer et al., 2012; $\alpha = .95$), rated on 7-point Likert scales (1 = *strongly disagree*; 7 = *strongly agree*). Sample items include: "I have a very positive influence on others" and "I'll make the world a much more beautiful place." Self-reported green buying behavior ($\alpha = .94$; Straughan & Roberts, 1999) was measured using 10 items rated on 7-point scales (1 = *never*; 7 = *always*). Sample items include: "When there is a choice, I choose the product that causes the least pollution" and "I make every effort to buy paper products made from recycled paper." Self-reported conservation behavior ($\alpha = .76$; Markle, 2013) was measured using six items rated on 7-point scales (1 = *never*; 7 = *always*). Sample items include: "How often do you turn off the lights when leaving a room?" and "How often do you cut down on heating or air conditioning to limit energy use?" Self-reported use of alternative transportations instead of driving ($\alpha = .82$; Markle, 2013) was also measured using three items (car-pool, public transportation, walking or cycling) on 7-point scales (1 = *never*; 7 = *always*). Self-reported recycling was measured using one item ("How often do you recycle materials such as plastic, aluminum, and paper?") rated on a 7-point scale (1 = *never*; 7 = *always*). Finally, participants' "willingness to pay higher prices for eco-friendly products to protect the environment" was measured on a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*).

4.2. Results

The items within each constructs were averaged to form composite scores. The results of separate bivariate correlations supported the predictions. Communal narcissism ($M = 4.01$, $SD = 1.31$) was significantly and positively correlated with self-reported green buying behavior ($M = 4.49$, $SD = 1.28$; $r = .51$, $p < .001$), self-reported conservation behavior ($M = 5.27$, $SD = .99$; $r =$

.34, $p < .001$), self-reported use of alternative transportations ($M = 3.44$, $SD = 1.74$; $r = .40$, $p < .001$), self-reported recycling ($M = 5.26$, $SD = 1.57$; $r = .15$, $p = .016$), and self-reported willingness to pay higher prices to buy eco-friendly products ($M = 4.14$, $SD = 1.62$; $r = .49$, $p < .001$). Further analysis also revealed that participants' age significantly and negatively correlated with communal narcissism ($r = -.26$, $p < .001$), self-reported green buying behavior ($r = -.13$, $p = .034$), use of alternative transportation ($r = -.27$, $p < .001$), and willingness to pay higher prices ($r = -.19$, $p = .003$). Therefore, and to control for the effects of age, separate multiple regression models with communal narcissism and age as predictors of the five pro-environmental behavior measures were run. In all the models, communal narcissism remained a significant predictor of self-reported pro-environmental behavior (green buying: $b = .50$, $t(249) = 9.12$, $p < .001$; conservation: $b = .27$, $t(249) = 5.81$, $p < .001$; alternative transportation: $b = .46$, $t(249) = 5.90$, $p < .001$; recycling: $b = .22$, $t(249) = 2.83$, $p = .005$; willingness to pay higher prices: $b = .59$, $t(249) = 8.37$, $p < .001$). The results supported the expectations.

4.3. Discussion

Study 1 overall supported the proposition that communal narcissists hold positive self-views in the context of pro-environmentalism; individuals higher in communal narcissism consistently reported higher scores across five measures of self-reported pro-environmental behavior. Communal narcissists may see pro-environmental actions as communal means that could potentially be utilized for self-enhancement (e.g., feeling special and influential), motivating them to identify themselves as pro-environmental. However, Nehrlich et al. (in press) showed that while communal narcissists claim to be more pro-social, they do not demonstrate pro-social actions more than their non-narcissistic counterparts. Study 2 investigates whether communal narcissists engage in actual pro-environmental behavior more than their non-narcissistic counterparts do.

5. Study 2

5.1. Participants and procedure

Participants in this study were college students at a private university in the United States who participated in exchange for extra course credit. The goal was to recruit as many participants as possible (sample size target: 100) and data collection was terminated at the end of the semester. The end of the recruitment period yielded a sample of 133 undergraduate students (82 females; 19 to 23 years old; $M_{age} = 20.76$, $SD = 1.17$).

The questionnaire included a battery of personality items among which the Communal Narcissism Inventory items were embedded ($\alpha = .88$; 1 = *strongly disagree*; 7 = *strongly agree*). After completing the questionnaire, participants were thanked and then told: ‘As a token of our appreciation, you will be entered into a drawing for a chance to win one of four \$25 prizes. If you win, you can receive a \$25 Amazon e-Gift Card or you can choose all or a portion of this money to be donated on your behalf to the Sierra Club, which is the nation’s largest and most influential grassroots environmental organization.’ A brief description of this organization’s pro-environmental activities and accomplishments (from their website homepage) was also provided. Participants then indicated the amount (\$1 to \$25 in one-dollar increments) to be donated on their behalf if they were among the winners. This amount served as the measure of pro-environmental behavior. At the end of the study, donations, as winners indicated, were actually made to the Sierra Club.

5.2. Results

The 16 items of the CNI were first averaged to form its composite scores. The effect of age, gender, and household annual income on indicated donation amount was then examined; none had a significant effect. A bivariate correlation analysis revealed no significant association between communal narcissism ($M = 4.85$, $SD = .75$) and the amount of donation indicated ($M = 8.87$, $SD = 10.20$; $r = -.02$, $p = .803$). Binary logistic regression analysis was also performed using communal narcissism as a predictor of whether or not participants made any donation at all (dummy coded, 0 = *donated nothing* and 1 = *donated some amount*). The results revealed no significant effect for communal narcissism ($b = -.147$, $Wald's \chi^2 = .365$, $p = .546$, *odds ratio* = .863).

5.3. Discussion

Study 2 provided preliminary evidence for the proposition that communal narcissists possess exaggerated pro-environmental self-views that are not necessarily supported by their behavior. This is in line with findings of Nehrlich et al.’s (*in press*) work that showed communal narcissists self-enhance on the pro-social domain but their actual behavior is not more pro-social, as claimed. Such inconsistencies between pro-environmental claims and actual behavior are particularly expected when the behavior explicitly requires communal narcissists to sacrifice their self-benefit. Such circumstances may activate self-oriented core motives in communal

narcissists, leading them to demonstrate a lack inclination to engage in pro-environmental actions. This proposition is tested in Study 3.

6. Study 3

Study 3 replicates the findings of Study 1 in a more controlled setting (behavioral laboratory) and using three different variables: (1) environmental responsibility in daily life and decisions, (2) self-reported donation intention and (3) volunteer work for a non-profit organization focused on pro-environmental issues. Additionally, the role of perceived self-sacrifice associated with pro-environmental behaviors is investigated in this study. More precisely, perceived self-sacrifice is expected to diminish the effect of communal narcissism on pro-environmental behavior such that when perceived self-sacrifice is low, communal narcissists are expected to engage in pro-environmental behavior whereas at higher levels of perceived self-sacrifice, they are reluctant to act pro-environmentally.

6.1. Participants and procedure

The experiment was run for three weeks at a public university in the United States to recruit as many participants as possible, provided that at least 76 participants completed the study (minimum Cohen's $f^2 = .15$, minimum power = .8, number of predictors = 3). The end of the recruitment period yielded a sample of 107 undergraduate students (45 females; 19 to 33 years old; $M_{\text{age}} = 23.58$, $SD = 3.12$) who participated in exchange for extra course credit. Upon arrival to the laboratory, participants were told that they would be participating in two ostensibly unrelated studies: first was a decision-making task while the second was a personality test.

The first part of the study measured pro-environmental behaviors using four different measures. In this part, participants first read the description of a real student organization at their university whose activities and goals were shaped around environmental sustainability. After reading this description, participants were asked to report if they were a member of this student organization to ensure that their responses were not impacted by membership. No one identified themselves as a member. Participants were then indicated their intentions to (1) donate money to this organization and (2) voluntarily work for this organization. Clearly, time and money are two scarce resources for students. In order to minimize the level of self-sacrifice imposed on participants, they read: 'Assuming money (time) was not an issue, your donation to (volunteer work for) this organization would be...' Behavioral intentions were rated on nine bipolar, 7-point scales (Fishbein & Ajzen, 2010; donation intention: $\alpha = .96$; volunteer work: $\alpha = .97$).

After completing the first decision making task, participants were given the second decision making task which was adapted from previous research (Griskevicius, Tybur, & Van den Bergh, 2010) study. Participants were asked to consider a scenario in which the car manufacturer XYZ (anonymized) was ready to launch two new similarly designed cars. Although the cars featured the same price, one car provided superior performance benefits while the second car provided relatively improved environmental features (see Appendix A for specific attributes of each car). This scenario was specifically used to simulate circumstances under which choosing a relatively pro-environmental product over a less pro-environmental alternative requires self-sacrifice to some degree. A pilot test with 27 students (14 females) from the same university ensured the cars portrayed the intended benefits. In the pilot test, participants rated the cars on the dimensions of environmental friendliness and perceived performance (1 = *definitely product A is superior*; 7 = *definitely product B is superior*). One-sided t-tests against the value of 4 (i.e., no difference between the two cars) indicated that the car with better environmental attributes was perceived relatively more environmentally friendly ($M = 5.81, SD = 1.00; t(26) = 9.42, p < .001$) and lower on performance ($M = 2.41, SD = .97; t(26) = 8.52, p < .001$). Hence, the stimuli correctly conveyed one car as being superior on performance while the other car was relatively better on environmental dimensions. In the main experiment, participants were told that the company wanted to assess consumers' preferences before launching the product because they were the target group. Participants were asked to imagine they were going to buy a car and their product preferences were measured with three items (which one is most appealing to you, attractive to you, would you be more likely to buy). The three items were rated on 7-point scales (1 = *definitely product A* to 7 = *definitely product B*). These measures were highly related ($\alpha = .92$) so they were averaged to form an index of car preference. To ensure that participants properly recognized the anticipated trade-off between these two choices (i.e., choosing product B over product A requires self-sacrifice to some extent for the sake of the environment), their perceptions of environmental friendliness and performance were assessed. More precisely, participants answered two questions: 'Which model is more environmentally friendly?' and 'Which model should yield higher performance?' on 7-points scales (1 = *definitely product A*; 7 = *definitely product B*). At the end of the first task, participants' green (pro-environmental) consumption values (their tendencies to express the value of environmental protection through their purchases and consumption behaviors) were measured on the GREEN scale ($\alpha = .91$; Haws,

Winterich, & Naylor, 2014). Sample items include, “I consider the potential environmental impact of my actions when making decisions” and “I am concerned about wasting the resources of our planet.”

After completing the decision making task, participants completed a battery of personality items in which the 16 items of the CNI ($\alpha = .90$) were embedded (1 = *strongly disagree*; 7 = *strongly agree*). Finally, participants provided demographic information and were then probed for suspicion. No one correctly guessed the connection between the tasks. Then they were thanked and fully debriefed.

6.2. Results

The items within each scale were averaged to form their composite scores. Self-reported donation intention, self-reported volunteering, and GREEN were used as measures of pro-environmental behavior, and the results overall replicated the findings of Study 1 obtained from a general sample. Three bivariate correlation analyses showed that communal narcissism ($M = 4.74$, $SD = .89$) positively and significantly correlated with self-reported donation intention ($M = 4.42$, $SD = 1.55$; $r = .27$, $p = .005$), self-reported volunteering intention ($M = 4.13$, $SD = 1.70$; $r = .25$, $p = .009$), as well as GREEN ($M = 4.51$, $SD = 1.27$; $r = .21$, $p = .032$).

Next, the role of perceived self-sacrifice was investigated using the final measure of pro-environmental behavior (car preference). But before that, perceived environmental friendliness and perceived performance of each car were checked using two one-sample t-tests with test values of 4 (i.e., no difference between the two cars). Similar to the results of the pilot test, participants in the main study rated the car presented with relatively improved environmental features as being higher in environmental benefits ($M = 6.79$, $SD = .90$; $t(106) = 32.19$, $p < .001$) but lower in performance ($M = 2.17$, $SD = 1.81$; $t(106) = 10.47$, $p < .001$). Therefore, all participants correctly perceived the benefits of each car regardless of their experimental condition.

The moderated relationship was tested using the bootstrapping procedure (Hayes & Preacher, 2014). In the analysis, perceived performance of the green car was used as an indicator of perceived self-sacrifice; lower levels of performance from the green car (as compared to its non-green alternative) could realistically indicate higher levels of self-sacrifice associated with choosing the green option. Consequently, the relative performance was reversed and used as a measure of perceived self-sacrifice in the model. Predicting green car preference ($R^2 = .21$), bias-

corrected bootstrapping with 10,000 bootstrap samples revealed a significant positive effect for communal narcissism ($b = 1.68$, $t(103) = 2.34$, $p = .021$) as well as a negative, significant interaction effect ($b = -.30$, $t(103) = -2.64$, $p = .010$). Further analyses of conditional effects of communal narcissism on green product preference at various levels of self-sacrifice showed that, as hypothesized, this effect gradually decreased from positive and significant at lower levels of the self-sacrifice (self-sacrifice = 1: $b = 1.38$, $t(103) = 2.26$, $p = .026$) to negative and marginally significant at higher levels of the self-sacrifice (self-sacrifice = 7: $b = -.44$, $t(103) = -1.89$, $p = .062$). In other words, when self-sacrifice associated with the eco-friendly purchase was perceived to be minimal, communal narcissists reported higher willingness to engage in pro-environmental behavior by choosing the car with relatively better eco-friendly features. In contrast, communal narcissists were less inclined to purchase the relatively green option when such a purchase was perceived to require higher levels of self-sacrifice. Floodlight analysis (Spiller, Fitzsimons, Lynch, & McClelland, 2013) finally revealed that perceived self-sacrifice played a significant, negative role only for individuals who scored higher than 4.07 in communal narcissism (79.44% of participants). The results are shown in Table 1 and Figure 1.

6.3. Discussion

Study 3 overall replicated the results of Study 1 in a more controlled setting and using different measures of pro-environmental behavior. Across four measures of pro-environmental behavior, the findings indicate that communal narcissists hold positive self-views about their pro-environmentalism. However, this group of consumers possess excessively strong self-oriented motivations, which could be triggered when pro-environmental actions are expected to harm their personal comfort, thus posing a direct threat to narcissistic self-interests. In such cases, the ‘me first’ aspect of narcissism plays a more dominant role, resulting in lack of inclinations to engage in pro-environmental actions. In addition to perceived self-sacrifice, other boundary conditions could also influence pro-environmentalism in communal narcissists. As noted, this work aimed to unveil the boundary conditions that provide practitioners with some actionable guidelines to successfully target this group of consumers. Therefore, the roles of green product visibility (Study 4) as well as the nature of green product benefits (self vs. social benefits; Study 5) were investigated as detailed in the following experiments.

7. Study 4

As noted, communal narcissists tend to self-enhance in the communal domain; their ultimate purpose is to validate and enhance their excessive self-views. The results of Studies 1 and 3 showed that pro-environmental behaviors could potentially function as communal means, signaling communal narcissists' care for the environment and thus enhancing social status (i.e., modern, knowledgeable, educated, influential, or even 'cool'). Such signaling behavior, however, would be expected to occur only for eco-friendly products that can be used in *public* (e.g., a laptop). For such products, communal narcissists may interpret a green purchase as an opportunity to publicly display their communal nature and consequently earn societal admiration from others (self-enhancement opportunity). In contrast, eco-friendly products that are typically used in *private* (e.g., a desktop computer) are less likely to serve as a signaling tool (hence, lower chance of self-enhancement). In this case, communal narcissists are less motivated to purchase the eco-friendly product.

This proposition was tested in the following experiment, in which two comparable, but different product categories (i.e., laptop vs. desktop computer) were used for public visibility manipulation. The laptop and desktop computers were selected because they both satisfy comparable needs and are relevant to the sample of college students. The Green Electronic Council's EPEAT program (Electronic Product Environmental Assessment Tool) evaluates laptops and desktop computers based on their environmental attributes such as energy efficiency, the materials used in manufacturing, packaging, and recyclability. These criteria were therefore used in the manipulation to indicate eco-friendliness of the products.

7.1. Participants and procedure

Similar to the previous experiment, this experiment was scheduled to run for three weeks to recruit as many participants as possible with a minimum target of 76 (minimum Cohen's $f^2 = .15$, minimum statistical power = .8, number of predictors = 3). However, it was decided to extend the recruitment period for one week due to insufficient number of participants (the initial sample size was 69). The end of this recruitment period, 98 undergraduate students (52 females; 19 to 33 years old; $M_{\text{age}} = 22.37$, $SD = 2.36$) participated in exchange for extra course credit. The study employed a between-subjects design in which communal narcissism was measured on an interval scale and product visibility was manipulated in two experimental conditions (low vs.

high). Upon arrival at the behavioral laboratory, participants were told they would be participating in two ostensibly unrelated studies.

First, participants completed a consumer decision-making task. Participants were randomly assigned to view and rate one of two products: a green laptop (high public visibility) or a green desktop computer (low public visibility). Both products included the same product features, four of which were pro-environmental benefits (see Appendix B for full details). The products were pre-tested with 39 participants (21 females) drawn from the same population as the main experiment. In the pilot test, participants were randomly assigned to the laptop condition ($n = 19$) or desktop condition ($n = 20$) and were asked to rate the product on the following dimensions: the public visibility of the product, the environmental friendliness of the product, and whether their friends would appreciate the product's pro-environmental status, all on 7-point scales (1 = *not at all* to 7 = *very much so*).

Analyses confirmed that the laptop ($M = 5.42$, $SD = .82$) was perceived as more publicly visible than the desktop computer ($M = 4.05$, $SD = 1.07$; $t(37) = 4.46$, $p < .001$). Most important for the purposes of the present investigation, participants indicated that their friends would recognize and appreciate their pro-environmental actions more in the laptop condition ($M = 4.84$, $SD = .90$) than the desktop computer condition ($M = 3.30$, $SD = .87$; $t(1, 37) = 5.46$, $p < .001$). Hence, the environmental purchase was perceived to be a stronger communal signal in the laptop condition than the desktop condition. As intended, both products were seen as equally environmentally friendly ($t(1, 37) = .33$, $p = .747$). Additionally, both products were perceived as environmentally friendly as indicated by two one-sample t-tests (with test values of 4; laptop: $M = 6.05$, $SD = .91$; $t(18) = 9.82$, $p < .001$; desktop computer: $M = 5.95$, $SD = 1.05$; $t(19) = 8.31$, $p < .001$). Hence, even though the social utility of the products differed, both products were perceived to be equally green.

In the main experiment, all participants were told that XYZ Company (anonymized), a well-known manufacturer of computers and electronic products, wanted to assess college students' preferences for a new product before bringing it to market. Participants imagined that they had saved enough money to purchase a new computer with their desired technical specifications. Those in the desktop condition imagined they were selecting the product for personal use at home whereas participants assigned to the laptop condition imagined using the laptop primarily at school for their coursework and group projects with classmates. Participants'

intention to purchase the green product was the key dependent variable which was measured using three items rated on 7-point scales (1 = *strongly disagree* to 7 = *strongly agree*; $M = 4.43$, $SD = 1.63$; $\alpha = .94$; Sweeney, Soutar, & Johnson, 1999).

As manipulation checks, participants in the main study rated the visibility of the products using two items (1 = *not at all visible* to 7 = *highly visible*; $\alpha = .85$). Two additional questions assessed perceived eco-friendliness of the products: ‘How would you rate environmental friendliness of this desktop (laptop) computer’ (1 = *not at all environmentally friendly* to 7 = *very environmentally friendly*) and ‘If you bought this desktop (laptop) computer, how likely would be your friends to recognize your pro-environmental action’ (1 = *very unlikely* to 7 = *very likely*).

In the second part of the study, which was ostensibly unrelated, communal narcissism was measured using the CNI ($\alpha = .90$; 1 = *strongly disagree* to 7 = *strongly agree*). The study concluded with demographic questions. Participants were then probed for suspicion. No one correctly guessed the real purpose of the experiment. Participants were then carefully and thoroughly debriefed, thanked, and dismissed.

7.2. Results

Public visibility manipulation of the green products was examined first. An independent samples t-test on perceived visibility revealed a significant difference ($t(96) = 3.93$, $p < .001$); the laptop ($M = 5.38$, $SD = 1.46$) was perceived to be more publicly visible than the desktop computer ($M = 4.10$, $SD = 1.74$). Another independent samples t-test on social recognition revealed similar results; participants indicated that their friends would be more likely to recognize and appreciate their pro-environmental actions in the laptop condition ($M = 4.84$, $SD = 1.93$) than the desktop condition ($M = 3.49$, $SD = 1.94$; $t(96) = 3.45$, $p = .001$). Therefore, public visibility was manipulated successfully. Environmental friendliness of the products was also examined. Two one-sample t-tests (with test values of 4) were run, which revealed that both desktop ($M = 6.04$, $SD = .94$; $t(48) = 15.29$, $p < .001$) and laptop ($M = 6.31$, $SD = .94$; $t(48) = 17.17$, $p < .001$) were perceived as environmentally friendly products. Similar to the findings of the pilot test, t-test revealed no significant difference in perceived environmental friendliness of these products ($t(96) = 1.40$, $p = .164$). These results indicated that all manipulations were successful.

The dependent measure (purchase intentions) was examined next. Predicting participants' purchase intentions ($R^2 = .23$), bias-corrected bootstrapping with 10,000 bootstrap samples revealed marginally significant effects for product visibility ($b = -2.84$, $t(94) = -1.88$, $p = .063$) and communal narcissism ($b = -.92$, $t(94) = -1.83$, $p = .071$). However, these simple effects were qualified by the predicted interaction between communal narcissism and product visibility ($b = .90$, $t(94) = 2.77$, $p = .007$). Analyses of conditional effects of communal narcissism on purchase intentions supported predictions; the effect of communal narcissism on purchase intentions was positive and significant for a product used in public—a laptop computer ($b = .87$, $t(94) = 3.73$, $p < .001$). As predicted, that effect was eliminated in the desktop condition ($b = -.03$, $t(94) = -.12$, $p = .909$). Finally, floodlight analysis (Spiller et al., 2013) showed that differences between high and low public visibility turn significant when communal narcissism scores were above 3.96, indicating that product public visibility was a significant factor only for individuals who scored higher than 3.96 in communal narcissism (72.45% of participants). These results are shown in Table 2 and Figure 2.

7.3. Discussion

Communal narcissists indicated higher willingness to purchase an eco-friendly laptop, a product that could deliver social utility and serve as a communal signal. However, when participants were considering the purchase of an eco-friendly desktop computer, a product that is usually used in private, the previously documented relationship between communal narcissism and pro-environmental purchase intentions was eliminated. In this way, Study 4 provides evidence for a boundary condition suggesting that under certain conditions (here, visibility of pro-environmental behavior), communal narcissists may behave more pro-environmentally. The following experiment tested another important boundary condition—namely, the framing of the benefits of the product.

8. Study 5

Study 5 sought to uncover another boundary condition which could curb pro-environmental purchases among consumers with communal narcissistic characteristics. As shown in Study 3, communal narcissists mainly capitalize on communal means for goal attainment but this drive is bounded by the degree to which the action could threaten their personal comfort. However, if other- vs. self-directed benefits of a pro-environmental action are emphasized and conspicuously presented, one can reasonably expect communal narcissists to

engage in such an action and *seemingly* forgo their self-benefit in an effort to validate or further enhance their grandiose self-views (hence serving their core self-oriented motives). In other words, such circumstances may provide communal narcissists with a great opportunity to prove themselves as ‘the most caring person’ in their social surrounding who can truly ‘make the world a much more beautiful place’ (as rated in the CNI scale). In line with this reasoning, and given that being praised as someone nice and caring is valued by communal narcissists, framing an ecologically-friendly product as a signal of such desirable characteristics should further stimulate demand among communal narcissists. To test this proposition, the benefits associated with eco-friendly products were manipulated in an experiment; a fuel-efficient car was framed as providing self-benefits (i.e., financial) or social benefits (i.e., the car would signal niceness). The experiment is explained in details next.

8.1. Participants and procedure

The experiment was scheduled to run for three weeks and the goal was to recruit as many participants as possible with a minimum sample size of 76 (Cohen’s $f^2 = .15$, statistical power = .8, number of predictors = 3). At the end of this recruitment period, 95 undergraduate students participated in exchange for extra course credit. Two participants failed the attention check question and two participants recognized the print advertisement used in this experiment. These participants were therefore excluded from analyses, resulting in a final sample of 91 participants (48 females; 18 to 31 years; $M_{age} = 23.26$, $SD = 2.84$). Similar to the previous experiments, participants arrived at the laboratory to complete several ostensibly unrelated studies. Participants first completed a battery of personality items in which the CNI ($\alpha = .87$) items were embedded.

After completing the first task, participants were instructed to complete the second task measuring pro-environmental purchase intentions. Participants were told the study was conducted with a market-research firm which ostensibly represented a car manufacturer XYZ Company (anonymized). The car manufacturer was preparing to launch a new car. Participants were presented with a fabricated screenshot, which included an advertisement for the car (developed by altering a Toyota Prius advertisement) as well as a fabricated market-research report. Two versions of the screenshot were developed to manipulate the benefits of the car (i.e., fuel-efficient versus low-emission) as well as their corresponding interpersonal implications—namely, how their peers perceived the owners of the car (i.e., pro-self vs. pro-social). Participants

who were randomly assigned to the self-benefit condition were told that the car is fuel-efficient; additionally, their peers perceive owners of the car as economical and money-wise. In the social-benefit condition, the car was highlighted as being low in emissions; their peers perceived that owners of the car are nice, caring, and altruistic because they pay more for a car to care for the environment.

Participants were asked to imagine they were going to buy a new car and that the new car fit within their budget. Although self- vs. social-benefits were manipulated, participants' expectations of self- vs. social-benefits of the cars were measured as an alternative approach to test the hypothesis of this experiment. The boundary condition tested here was in fact perceptions of benefits by participants, and the manipulation only served as a tool to generate the desired variations in the sample. Therefore, the following question was asked to measure perceived benefits: 'How do you evaluate the benefits of this model?', rated on a 7-point scale (1 = *definitely self-benefits* to 7 = *definitely social-benefits*). Intention to purchase the car was the key dependent variable (Sweeny et al., 1999) and was measured using three items on 7-point scales (1 = *strongly disagree* to 7 = *strongly agree*; $M = 4.03$, $SD = 1.51$; $\alpha = .93$). Demographic information was also collected. The study concluded with a hypothesis-guessing question. No one expressed suspicion about the true purpose of the experiment. Participants were then thoroughly debriefed, thanked, and dismissed.

8.2. Results

The manipulation of benefits was successful as participants reported higher social benefits for the car in the social-benefit condition ($M = 5.79$, $SD = 1.25$) than the one in the self-benefit condition ($M = 4.65$, $SD = 1.89$; $t(89) = 3.35$, $p = .001$). The items' scores within each scale were averaged next and served as composite scores. In order to test the hypothesis, the bias-corrected, bootstrapping procedure (10,000 bootstrap samples; Hayes & Preacher, 2014) was used with communal narcissism, car benefits (social vs. self), and their interaction as the focal variables. The regression model ($R^2 = .09$) revealed no significant interaction effect ($b = .40$, $t(87) = .94$, $p = .351$). This finding was further scrutinized by analyzing conditional effects of communal narcissism on purchase intentions. Surprisingly, communal narcissism was positively correlated with purchase intentions in the self-benefit condition ($b = .79$, $t(87) = 2.49$, $p = .015$) whereas this same effect was not significant in the social-benefit condition ($b = .39$, $t(87) = 1.33$, $p = .186$). The results are shown in Table 3 and Figure 3.

As an alternative test of the hypothesis, a similar procedure was followed using continuous *perceived benefits*. Predicting purchase intentions ($R^2 = .14$), the bootstrapping procedure revealed a marginally significant interaction effect ($b = .27$, $t(87) = 1.82$, $p = .072$). Conditional effect analyses showed that at lower levels of perceived social-benefits (perceived social-benefits = 1), communal narcissism was not correlated with green car purchase intentions ($b = -.69$, $t(87) = -.99$, $p = .324$). However, this effect gradually increased and turned positive and significant at higher levels of perceived social-benefits (perceived social-benefits = 7; $b = .95$, $t(87) = 3.01$, $p = .003$), when the car was more likely to serve as a communal means. Floodlight analysis also indicated that perceived social-benefits was a significant factor only for individuals with communal narcissism scores above 4.90 (47.25% of participants). These results are shown in Table 4 and Figure 4. Plausible explanations for these seemingly contradictory findings are provided in the discussion section.

8.3. Discussion

This study revealed some interesting, and to some extent contradictory, findings when the role of product benefits (self vs. social) was examined using both categorical (manipulated) and continuous measures. Although no interaction effect was found in the case of categorical variable, further scrutiny revealed that participants high in communal narcissism reported higher willingness to purchase the car only when self-benefits were highlighted in the advertisement and the report (i.e., saving money on gas). These consumers, however, were reluctant to purchase the car when social benefits were emphasized. Although these findings did not support the expectations, a plausible explanation could be that communal narcissism is self-focused at the trait level (higher order). Therefore, when the car was positioned as self-benefiting, communal narcissists were inclined to purchase it. In the social-benefits condition, in contrast, communal narcissists were reluctant to purchase the car perhaps because of the relatively low reward-to-risk ratio expected. On the risk side, purchasing a car may be considered a significant purchase especially for college students whose financial resources are limited (financial risk). Besides, self-sacrifice is likely to play a role here because eco-friendly cars typically deliver lower performance (as shown in Study 3). Therefore, just being perceived as someone nice and caring (expected reward) was perhaps not worth risking financial resources and/or personal comfort.

In comparison, when *perceptions* of benefits were used, communal narcissists reported higher purchase intentions as perceived social benefits increased. Although these findings were

in line with the predictions, they contradicted the results found from the manipulation. A potential explanation could be that even when self-oriented benefits of the fuel-efficient car were highlighted, participants could reasonably infer that the car had relatively better environmental attributes as well (less fuel consumption → less carbon dioxide). In other words, the fuel-efficient car could still be perceived as relatively more environmentally friendly, and thus serving as a communal means. It is worth noting that perceptions of benefits were measured prior to purchase intentions in the experiment; therefore, it is safe to assume that participants' perceptions of benefits guided their decisions for the most part, which could explain why the findings for perceived benefits were perfectly in line with the theorization of this research.

9. General discussion

9.1. Discussion of findings

Current unsustainable consumption patterns are one of the main threats to the earth's natural resources. To ensure resources for future generations, consumers around the globe must engage in relatively more sustainable behavior. As it stands, scientists worry that people are simply not doing enough (e.g., Solomon et al., 2007; Stocker, 2013). Environmental researchers are therefore in a unique position to offer meaningful insights for improving environmental outcomes (see also Kotler, 2011). Indeed, in the past decades the field has witnessed increased attention and resources towards understanding the psychological barriers and facilitators of pro-environmental behavior (e.g., Cialdini, 2003; Griskevicius et al., 2010; Griskevicius, Cantú, & van Vugt, 2012; van Vugt 2009; van Vugt et al., 2014). The present work contributes to the growing literature by systematically examining how communal narcissistic characteristics of consumers affect their willingness to engage in sustainable behavior. This is a critical endeavor given the urgency of increasing sustainable behavior.

Overall, the findings suggest that communal narcissists tend to *claim* that they are pro-environmental (Study 1 and Study 3); however, their behaviors do not always support such claims (Study 2). In fact, communal narcissists tend to self-enhance in the pro-environmental domain only when pro-environmental behaviors are not perceived to entail high degrees of self-sacrifice. In other words, this group of consumers seems relatively unwilling to incur personal sacrifices for the sake of society and the environment. The keyword here is *perception*, as the same product/behavior could be perceived differently by different people. Hence, Study 3

provides a viable explanation for why communal narcissists claim to be ‘green’ while their actions are not.

In addition, the findings suggests that communal narcissists capitalize on pro-environmental actions in the hope of impressing their audience and eventually validating or further enhancing their grandiose self-views. Therefore, when this group of consumers anticipates that environmentally friendly consumption will generate positive social feedback, they are cautiously willing to incur the sacrifice that can be associated with sustainable consumption. For instance, communal narcissists may be willing to buy an eco-friendly laptop (publicly visible) but reluctant to purchase an eco-friendly desktop with similar features due to its lack of social visibility. In this way, Study 4 provides another explanation for why communal narcissists’ assertions of being environmentally conscious are not reflected in actions.

Perhaps the most interesting findings of this research were those of Study 5, in which communal narcissists reported higher intentions to purchase the car which was positioned on self-benefits (fuel efficient meaning less fuel cost). In comparison, when only social benefits were highlighted (low emission meaning less carbon dioxide and other polluting gases), these consumers were not interested in purchasing the car. After all, other-oriented actions of communal narcissists are agentic and self-directed at their core. Here, communal narcissists probably value their *definite, instant* financial profit more than any *potential, future* social benefits.

When perceptions of benefits came into play, however, the results supported the prediction that communal narcissists are likely to engage in pro-environmental actions only if such actions are perceived as communal signals. This study, again, highlights the role of perceptions associated with eco-friendly products. In other words, to curb relatively unsustainable consumption, communal narcissists may need to correctly perceive and anticipate the consequences of their behavior for others. In this case, although self-benefits are the main drivers of behaviors in communal narcissists, they still perceive their action as pro-environmental. Overall, Study 5 provides another plausible explanation for why communal narcissists’ environmental beliefs and attitudes do not necessarily lead to eco-friendly actions.

9.2. Theoretical and practical implications

This research contributes to environmental psychology research in several ways. While a substantial amount of research has examined the effect of agentic narcissism on pro-

environmental behavior, the effect of communal narcissism has been neglected entirely in the literature, and this research was an initial attempt fill this gap. In addition, this work extends previous research by conceptually proposing and empirically testing certain boundary conditions under which communal narcissists may indeed behave in a pro-environmentally manner. Finally, this study contributes to a growing body of empirical research suggesting that socially-oriented motives could direct pro-environmental decisions (Goldstein, Cialdini, & Griskevicius, 2008; Griskevicius et al., 2010; Naderi & Strutton, 2014). More precisely, a growing body of research in psychology examines how social identity may influence environmental attitudes and behaviors (Fielding & Hornsey, 2016), for example in the context of large-scale environmental crises (Fritsche, Barth, Jugert, Masson, & Reese, 2018). Extending the foundations of this research stream, the present investigation showed that some individuals may assimilate their attitudes, beliefs, and behavior to the norms of a relevant outgroup (non-narcissists) and polarize them away from the salient in-group norms (other narcissists).

In addition to its contributions to environmental and social psychological research, this work has practical implications for environmental advocates, policy makers, and green marketers. While environmental consciousness has tremendously increased over the past two decades, the actual preservation of the planet has not. This work aims to address this issue by exploring the factors that could motivate communal narcissistic consumers to engage in pro-environmental behaviors. First, green products' self-benefits should be clearly spelled out and perceptions of risk and self-sacrifice that are usually associated with purchase and use of such products should be minimized in promotional campaigns. For example, improving the quality of green products means consumers do not need to sacrifice their personal comfort in order to 'go green.' Tesla ® provides a good example for a company that has been closely following this strategy. While Tesla only manufactures fully-electric cars (environmentally friendly), their cars are top rated in design, safety, and performance. Tesla also offers the longest-range for an electric car. Consequently, it is reasonable to assume that purchasing a Tesla as an eco-friendly car does not require high levels of self-sacrifice, which explains why Tesla is one of the most popular brands in the automobile industry.

Second, as communal narcissistic consumers look for tangible green benefits, financial cost is still a significant player in this field, particularly after the Great Recession hit consumers in the United States and across the globe. While some consumers may be willing to pay more for

green products, the self-oriented nature of communal narcissists could pose a challenge. Therefore, green brands will have to reconcile this problem by offering products with self-directed incentives at competitive prices. Tesla ® can be used again as a practical example for implementing such a change. While the company started with manufacturing expensive, luxury electric cars (Tesla Roadster, Model S, and Model X), their latest product (Model 3) is a luxury car with substantial financial benefits (tax incentives, almost no maintenance cost, and zero or minimum charging cost) offered at a competitive price, which probably explains why nearly half a million customers had pre-ordered Model 3 months before the production began.

Finally, when green products are positioned properly, communal narcissists tend to capitalize on the social acceptability of their behavior to help them satisfy their agentic core motives. Therefore, environmental practitioners should attempt to customize their promotional strategies accordingly and direct the communal narcissists' attention to this potential benefit of green products. This can be achieved by emphasizing the symbolic status of green products and by positioning green consumption as a socially desirable behavior that is greatly praised and admired by mainstream society. Apparently, such strategies are more effective for publicly visible products and a consequential obstacle for marketers is to promote green products that are mainly used and consumed in private settings.

9.3. Limitations and directions for future research

Despite the theoretical contributions and practical implications, this study is subject to certain limitations. First, relatively small samples of college students were recruited for the experiments due to logistical and financial constraints, which could limit the statistical power as well as the generalizability of the results. Future research could replicate the findings across larger and more representative samples. Second, lack of external validity is an inherent limitation of every laboratory experiment including the ones in this work, although the situations described in the experiments were not far from reality. Third, narcissism is a latent construct that cannot be directly observed. Therefore, it would be more appropriate to use latent variable structural equation modeling in future research with larger samples. Fourth, participants were asked in two experiments to decide to buy one of the two cars, and one could argue that buying a fuel-efficient car with fewer emissions is not a pro-environmental choice but rather a less environmentally-damaging choice. Future studies therefore could address this issue by examining other product categories that truly deliver environmental benefits. Finally, pro-environmentalism measures

were self-report rather than actual behavior (except for Study 2), and research (Gebauer et al., 2012; Nehrlich et al., *in press*) show that communal narcissists' communal self-reports are heavily biased. Hence, despite the careful use of cover stories to conceal the real purpose of the experiments, participants' self-report bias could have influenced their responses. Future research could therefore replicate the findings by measuring actual behaviors rather than self-reports.

Future studies could extend the findings by investigating other boundary conditions of the findings here. For instance, potential boundary conditions for the findings could be related to product (e.g., utilitarian vs. hedonic), price (relative price of green vs. non-green), place (e.g., online vs. physical store), and promotion (e.g., emotional vs. rational appeals). In addition, other individual characteristics such as self-monitoring (Snyder & Gangestad, 1986), emotional empathy, altruism, and price/value consciousness could also be tested as boundary conditions to extend the findings of this work. Finally, communal narcissism was investigated as a unidimensional trait in this study. An interesting avenue for future research could be to examine how its various dimensions could influence consumers' engagement in eco-friendly behaviors and green consumption.

We are living in a society where self-oriented motives and behaviors are rather prevalent. Therefore, understanding how self-oriented characteristics of consumers may influence their inclinations, or lack thereof, to engage in pro-environmental actions is a topic worthy of exploration. The present study was an initial attempt to address this issue and future research could examine other selfish motivations for green consumption.

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Table 1: Regression Results in Study 3

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
<i>Constant</i>	- 2.43	3.43	- 0.71	0.480	- 9.24	4.37
<i>Communal Narcissism</i>	1.68	0.72	2.34	0.021	0.26	3.11
<i>Perceived Self-Sacrifice</i>	0.99	0.55	1.79	0.077	- 0.11	2.08
<i>Interaction</i>	- 0.30	0.11	- 2.64	0.010	- 0.53	- 0.08

$R^2 = .21$

$F(3, 103) = 9.32, p < .001$

Table 2: Regression Results in Study 4

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
<i>Constant</i>	6.85	2.43	2.82	0.006	2.03	11.67
<i>Communal Narcissism</i>	- 0.92	0.50	- 1.83	0.071	- 1.93	0.08
<i>Product Visibility</i>	- 2.84	1.51	- 1.88	0.063	- 5.84	0.16
<i>Interaction</i>	0.90	0.32	2.77	0.007	0.26	1.54

$R^2 = .23$

$F(3, 94) = 9.21, p < .001$

Table 3: Regression Results in Study 5 (Categorical Moderator)

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
<i>Constant</i>	3.90	3.27	1.19	0.236	- 2.59	10.39
<i>Communal Narcissism</i>	- 0.02	0.66	- 0.02	0.981	- 1.33	1.29
<i>Perceived Benefits</i>	- 1.81	2.11	- 0.86	0.394	- 6.01	2.39
<i>Interaction</i>	0.40	0.43	0.94	0.351	- 0.45	1.25

$R^2 = .09$

$F(3, 87) = 2.07, p = .051$

Table 4: Regression Results in Study 5 (Continuous Moderator)

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
<i>Constant</i>	7.76	4.03	1.93	0.057	- 0.25	15.76
<i>Communal Narcissism</i>	- 0.96	0.84	- 1.15	0.255	- 2.63	0.71
<i>Perceived Benefits</i>	- 1.16	0.72	- 1.60	0.114	- 2.60	0.28
<i>Interaction</i>	0.27	0.15	1.82	0.072	- 0.02	0.57

$R^2 = .14$

$F(3, 87) = 4.53, p = .005$

Figure 1: Moderating Effect of Perceived Self-Sacrifice in Study 3

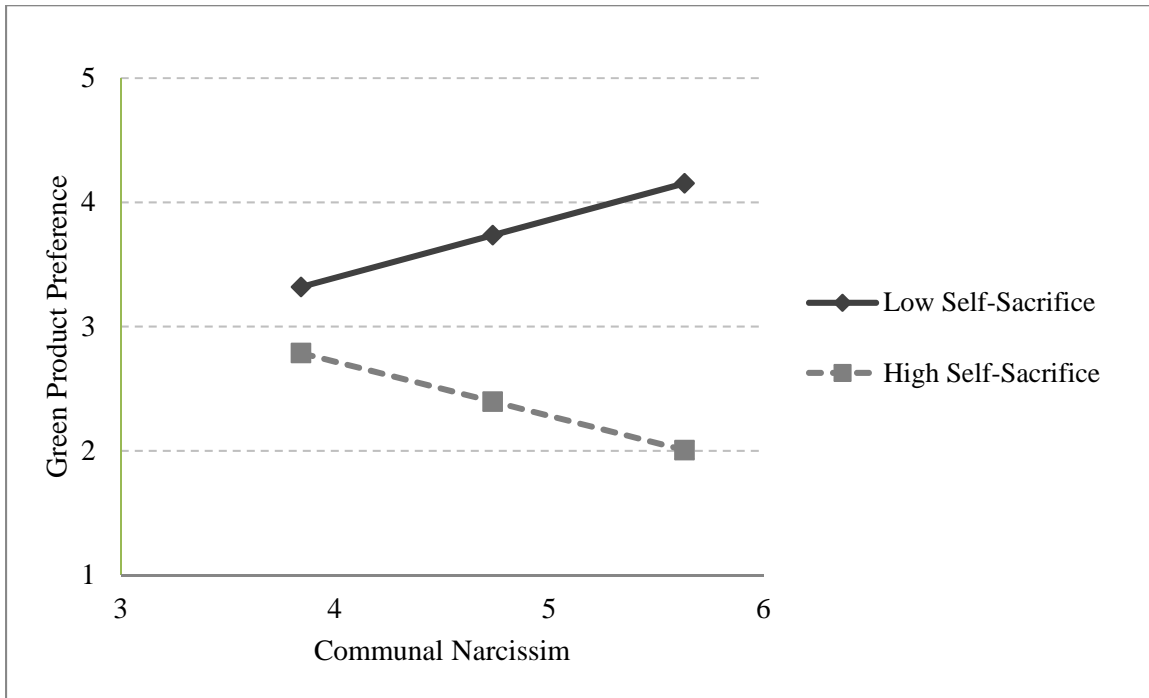


Figure 2: Moderating Effect of Product Public Visibility in Study 4

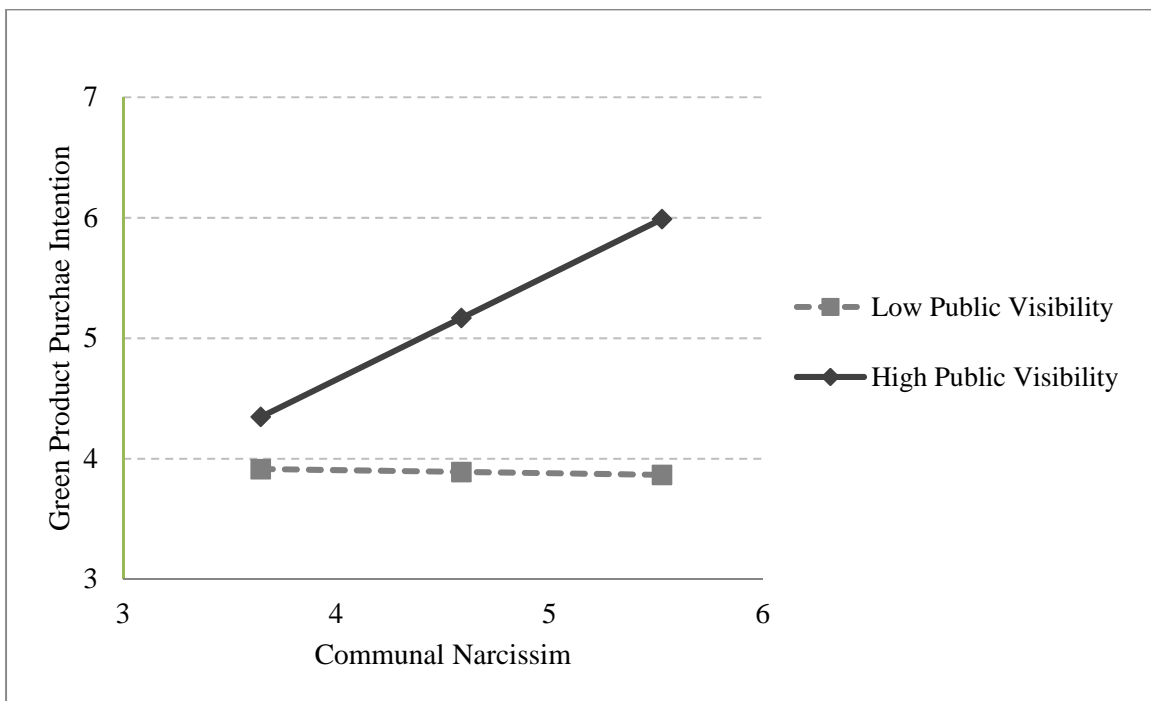


Figure 3: Moderating Effect of Product Benefits (Manipulated) in Study 5

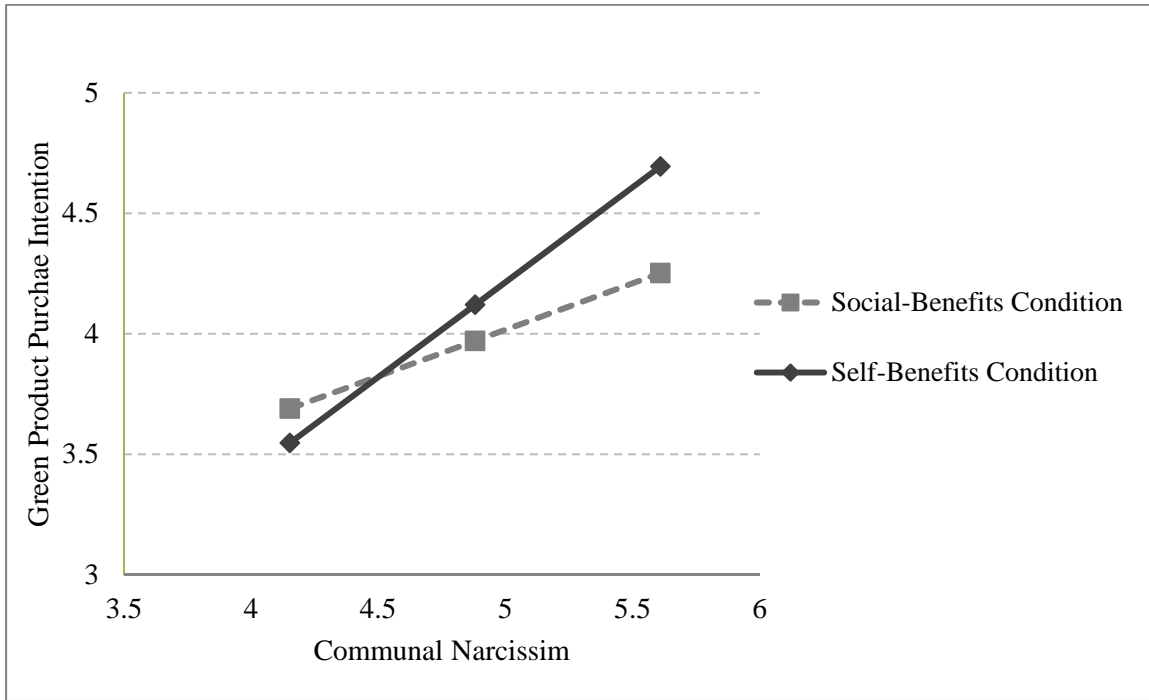
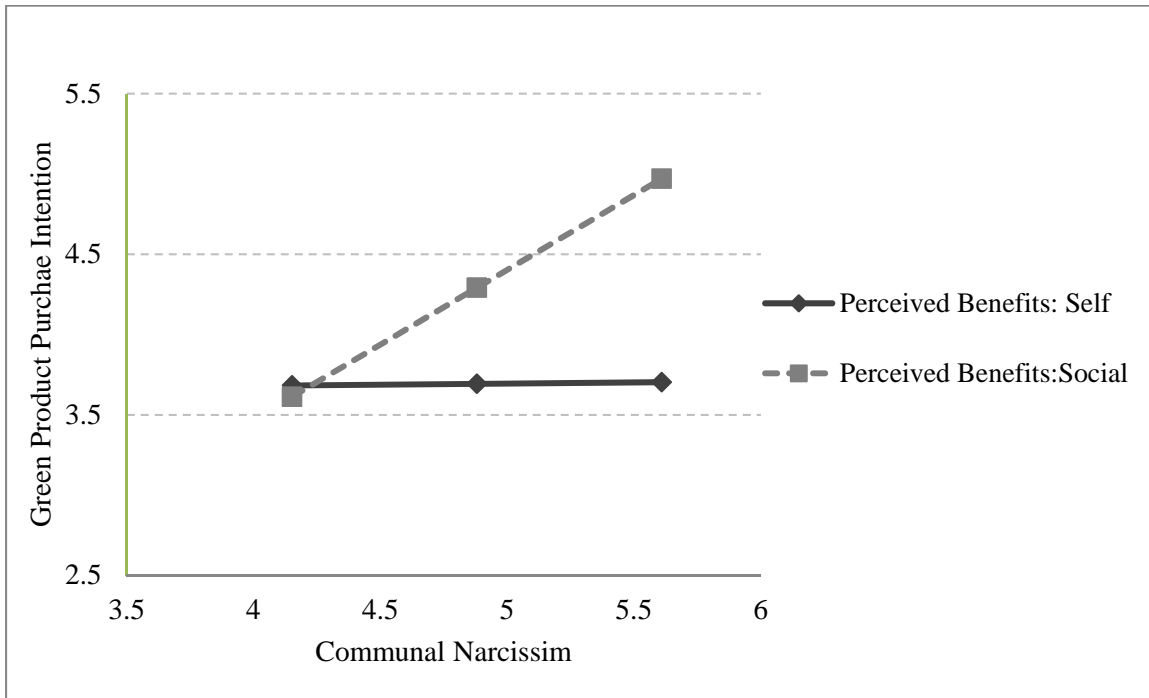


Figure 4: Moderating Effect of Perceived Product Benefits (Measured) in Study 5



Appendix A

Product Descriptions in Study 3

Product A

- Powerful engine (240 horsepower)
- Advanced TSL-4 technology integrated in a V-6 engine that makes lower noise and less vibration in the cabin
- Equipped with powered, automatically adjustable seats that are very comfortable and covered with durable high quality leather

Product B

- High-performing engine (140 horsepower)
- Ultra Low Emission Vehicle (ULEV) that produces less carbon dioxide (CO₂) and other polluting gases
- Eco-friendly seating fabric made from 85% post-industrial materials – polyester fibers that would otherwise have ended up in landfills

Appendix B

Desktop/Laptop Computer Features in Study 4

ECO Series – G1555



- Thin and lightweight design
- Free of harmful toxins like lead, mercury, arsenic, BFRs, and PVC
- Anti-fingerprint coated screen
- Reduced packaging
- Ultra-efficient use of recyclable materials
- TCO'07 Certified for environmental requirements