Conflicting Norms Highlight the Need for Action

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Abstract

Previous research has not addressed the possibility that people may face conflicting norms of pro-environmental behavior from their multiple in-groups. Across two studies, the authors test competing hypotheses: People may be demotivated by norm conflict, or conversely, norm conflict may motivate people to action. The results of both studies suggest a clearly motivating effect of conflict. Norm conflict was associated with decreased water usage (i.e., increased water conservation) in Study 1, and increased pro-environmental behavior intentions in Study 2. The effects of conflict were partially mediated by perceived effectiveness in Study 2. Although these initial findings indicate that conflict motivates rather than hinders behavioral engagement, future research should investigate whether the nature of the influence of norm conflict depends on factors such as issue importance.

Keywords

social norms, norm conflict, pro-environmental behavior, pro-social behavior

If we are wavering over the decision to invest extra time, effort, or money in making a pro-environmental choice, how will our decision be affected by the knowledge that our friends are installing solar panels and riding bikes, while

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our colleagues take unnecessary flights for long weekends away and drive to the local store in a 4 × 4? Research has consistently shown that what others do affects our own behavior in a range of domains, especially pro-environmental behaviors (e.g., Bratt, 1999; Cialdini, 2007; Cialdini, Reno, & Kallgren, 1990; Goldstein, Cialdini, & Griskevicius, 2008; Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008; Schultz, 1999; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). What previous studies have not examined is how the conflicting behavior of the multiple in-groups we belong to affects our own decisions.

Research framed by norm focus theory (Cialdini et al., 1990) has shown that the descriptive norm (what other people actually do) and injunctive norm (what other people think you should do) can have independent and interactive influences on behavior (e.g., Göckeritz et al., 2010; Schultz et al., 2007). Schultz et al. (2007), for example, demonstrated that descriptive norm feedback can prompt undesirable boomerang effects, unless paired with a supportive injunctive norm, whereas Göckeritz et al. (2010) showed that the effects of descriptive norms on self-reported behavior are moderated by injunctive norms. Recent research has also distinguished the motivational underpinnings of these different norm types (Jacobson, Mortensen, & Cialdini, 2011). Although we know a lot about the nuances of the effects of different types of social norms, previous research has not examined the simultaneous effects of multiple descriptive or injunctive norms from different in-groups.

For behaviors such as pro-environmental actions, which we enact in multiple contexts, it is unclear how norms will influence behavior when our in-groups behave in different ways. From the perspective of some social-psychological theories, this conflict might not matter. For example, social identity theory (Tajfel, 1981) posits that people identify with the most salient relevant in-group in a given context at a given time, and follow its norms. Terry and Hogg (1996) demonstrated that perceived norms influenced exercise intentions, but only for those who were highly identified with the group. Similarly, Rimal and Real (2005) showed that identity-related variables moderated the effects of descriptive norms. From this viewpoint, the drinking behavior of young people at a party should be most influenced by their peers, rather than parents or health professionals. Yet research on young people's drinking behavior shows significant correlations between parental drinking and children's drinking (Green, Macintyre, West, & Ecob, 1991; Lau, Quadrel, & Hartman, 1990), even though young people typically undertake this activity outside of the home environment. In this instance, although peers undoubtedly have a huge influence on behavior, the data suggest that there is a simultaneous influence of family norms.

Schultz, Tabanico, and Rendon (2008) also argue against the suggestion that only the norms of close in-groups influence behavior. The authors propose that although salient, relevant in-groups do exert social influence, information about a generic referent (e.g., the general public) is sufficient to motivate normative behavior. A study by Goldstein et al. (2008) showed that although descriptive norm messages were successful in encouraging conservation behavior in hotels, there was no increase in conformity to normative messages associated with more relevant referent groups. Although research from a social identity theory perspective suggests that the salience of groups will affect the effects of their norms (e.g., Terry & Hogg, 1996), and thus moderate the effects of norm conflict, the findings of Goldstein and colleagues suggest that conflicts may arise even among groups that are not highly salient.

Theorizing about social norms up until now has not addressed the reality that we are all members of multiple groups, and are thus all likely to be exposed at some point to conflicting in-group norms. Although some behaviors are likely to be tied to specific in-group contexts, and thus specific in-group norms, there are a multitude of behaviors, from recycling to healthy eating, that can be enacted across multiple in-group contexts. This raises the question of how people will respond to conflicting in-group norms.

However, it is possible that norm conflict may undermine behavioral engagement. This would be expected where norm conflict signals doubt about a behavior's utility by providing information that not everyone is acting (Olson, 1971). For contexts that rely on behavior change from many to achieve the desired outcome, implying that not everyone is acting may also stymie behavior by reducing the perception that the behavior will be effective. For example, an individual's efforts to reduce their carbon footprint will not be effective in reducing the severity of climate change if no one else takes action. Research has demonstrated that beliefs that others will participate, along with expectations of the success or efficacy of engaging in a behavior, are associated with participation in prosocial and collective action (Klandermans, 1984; van Zomeren, Postmes, & Spears, 2008; van Zomeren, Spears, Fischer, & Leach, 2004). It is important to note that we are talking about perceptions that one's own actions will be effective in contributing to an environmental goal, rather than a sense of self-efficacy to take environmental action, which is more commonly examined in the environmental psychology literature (e.g., Tabernero & Hernández, 2011). If people do not think that changing their behavior will be effective in achieving the desired outcome, they are less likely to act (Ellen, Wiener, & Cobb-Walgren, 1991).

This reasoning is further supported by social-psychological theories, such as Cognitive Dissonance Theory (Festinger, 1957), that assert that people favor congruence over conflict (whether it be between beliefs and actions, or between existing attitudes and new information), and seek to restore congruence when conflicts arise. If we extend this reasoning to situations of norm conflict, we would predict that people will experience a situation of conflicting in-group norms as aversive. In the absence of actually being able to bring the groups' behaviors in line with each other, the most likely response may be to disengage with the behavior.

Although one might intuit that conflicting norms would uniformly demotivate behavior in the manner described above, another possibility is that norm conflicts could serve to motivate people to action. People might be energized by norm conflict because the information that not everyone is acting reinforces the critical need to act. In this way, norm conflict could lead people to believe that their individual efforts are more important and effective, or highlight to them that they are personally responsible for taking action.

In fact, previous research on normative influence has shown that the effects of norm conflict can be mixed. Although no research has considered the influence of conflicting multiple in-group norms, Smith and Louis (2008) showed that conflict between in-group descriptive and injunctive norms (what people actually do and what people think should be done) can have opposite effects depending on the importance of the issue to participants. In their studies, participants tended to be motivated and energized to engage in behavior in the face of a conflict between descriptive norms and injunctive norms when the issue was one assumed to be of high personal importance (the introduction of full fee university places for Australian undergraduates—a real salient political issue at the time). In this case, participants were equally likely to sign a postcard about the issue when descriptive and injunctive norms were both high as when they conflicted, and more so than when they were congruently low. In contrast, when the issue was presumed to be of low personal importance (the introduction of comprehensive exams in Australian universities—which was not on any political agenda at the time), people were even less likely to act when descriptive and injunctive norms were in conflict than if both norms were low. The authors suggested that this motivating effect of conflict may have arisen because the discrepancy between the desired goal and the lack of action on behalf of others highlighted the importance of taking action to the individual. We propose that multiple group norm conflicts could be similarly motivating, as the observation that some are acting whereas others are not may increase the

individual's sense that their own behavior will be effective to promote a positive norm of behavior. This may occur if a situation of conflicting norms prompts the appraisal that "if one group is acting, it is possible for the other group to act too." In this way, norm conflicts could serve as a call to arms, signaling a window of opportunity for even more effective action, rather than a reminder of the futility of individual action.

In summary, given the observation that members of in-groups are acting in conflicting ways, one of two distinct appraisals could result: "Not everyone is acting, therefore my behavior is critical" versus "not everyone is acting, therefore the behavior won't work anyway." Any effect of norm conflict will depend on which of these appraisals people tend to apply when confronted with conflict between multiple in-group norms.

The Present Research

In the present article, we examine the influence of norm conflict on pro-environmental intentions and behavior, and consider the mediating role of perceived effectiveness. This is the first time that research has addressed this issue. Previous research on norm conflicts has only addressed conflict between injunctive and descriptive in-group norms (Smith & Louis, 2008), or conflict between an individual position and the group norm (Packer, 2008; Packer & Chasteen, 2010). We test the novel hypothesis that conflicting in-group normative beliefs will affect intentions and behavior, even after accounting for the effect of overall normative beliefs across groups. We also hypothesize that the effects of norm conflict may affect behavior by influencing people's perceptions of the effectiveness of engaging in the behavior. Regarding the direction of this influence, we propose two competing hypotheses: In the face of norm conflicts, people may come to see their own engagement in pro-environmental behavior as less effective and therefore engage in the behavior less often. In contrast, given the findings of previous research on descriptive-injunctive norm conflict (Smith & Louis, 2008), it is also possible that people will come to see their individual contribution as more important and effective when descriptive normative beliefs are in conflict, and therefore increase their pro-environmental intentions and behaviors. Given that we are dealing with people's perceptions of the norms of various in-groups, rather than objective reports of their behavior, we describe the ratings of behavior of the various in-groups as descriptive normative beliefs, rather than descriptive norms (Nolan, 2011).

Although we theorize that the effects of norm conflict could be relevant to any behaviors that are enacted across multiple group contexts (e.g., health or

eating behaviors), we test our hypotheses in the context of environmental behaviors. Environmental psychologists have identified the cross-contextual nature of pro-environmental behaviors as one reason why existing models often lack explanatory power (Stern, 2000), and for this reason, these behaviors present an ideal opportunity for exploring the potential effects of conflicting in-group norms.

In Study 1, we test the relationship between norm conflicts and objective measures of water conservation behavior. As the data for this study were drawn from a small subset of questions in a large scale study of water conservation behavior, we were unable to test the role of perceived effectiveness as a mediator in both studies. In Study 2, we further investigate the relationship between norm conflicts and pro-environmental intentions, and explore mediating role of perceived effectiveness.

Study 1

In Study1, we investigate the association between conflicting normative beliefs and actual water conservation behavior controlling for overall descriptive normative beliefs. In this study, we had access to descriptive norm belief information about two in-groups, household and community, and examined the effects of conflict between beliefs about these two descriptive normative beliefs.

Method

Participants. The study was conducted in four local government areas in Queensland, Australia. Participants were recruited via two separate methods: either direct mail or through an online research panel. Participants in the study had to be owners (i.e., owned home outright of mortgage) of a freestanding dwelling, not intending to move residence for 12 months. The reason for these criteria was to enable better objective measures of household water use; renters may not be able to give permission to access water use records, and multidwelling residences are not typically individually metered. In addition to completing the survey, participants were asked to complete a Water Data Release Consent form to enable the researchers to access their household water use data from their water company. Only households who completed this form and were able to be matched with water data are included in the analysis for this study. Objective water use data were available for 1,008 households.

Measures

Demographic information. Participants were asked to record their age in years, gender, highest level of education (primary, high school, technical/ trade, tertiary/undergraduate, tertiary/postgraduate), region of residence, number of household members, and gross annual household income.

Household descriptive normative beliefs. These were assessed with two items: "Members of my household engage in everyday actions to save water around the house and garden," and "Most individuals in my household engage in everyday actions to save water around the house and garden" (1 = *strongly disagree* to 7 = *strongly agree*, α = .93).

Community descriptive normative beliefs. These were measured with a single item: "People in my community: *never save water around the house and garden (1) to always save water around the house and garden (7)*."

Global descriptive normative beliefs. These were computed by taking the mean of the household and community descriptive norms.

Descriptive norm conflict. This was computed by taking the absolute value of the difference score between the community and the household descriptive norm beliefs. Thus, regardless of the direction of the difference, higher scores on this variable reflect more divergent beliefs about the norms in the two groups. As these variables were measured on a 1 to 7 scale, norm conflict scores could range between 0 and 6.[1]

Per person water use (in liters). This was assessed by obtaining average daily water use for each household for the 6 months following the survey from the appropriate water utility, and dividing this by the number of household members.

Results

Overview of analyses. Hierarchical regression analysis was used to test the hypothesis that norm conflict would predict water conservation behavior over and above the effect of the overall descriptive norm. Demographic variables, including gender, age, education level, region of residence, and household income, were entered at the first step. The overall descriptive norm was entered at the second step and norm conflict was entered at the third step. Means, standard deviations (*SD*s) and intercorrelations are presented in Table 1. Inspection of the actual norm conflict scores reveals that in this sample, participants' descriptive normative beliefs for their households tended to be higher (i.e., more water conserving) than for their community, with 57.3% of respondents recording a negative norm conflict score

Table 1. Means, Standard Deviations, and Intercorrelations Among Variables in Study 1

	M	SD	1	2	3	4	5	6	7	8	9
1. Log transformed per person water use	2.17	0.23	—								
2. Household income	2.83	1.45	-.02	—							
3. Region of residence	2.44	1.18	.12***	-.21***	—						
4. Age	54.71	14.78	.14***	-.52***	.17***	—					
5. Gender	1.57	0.50	-.01	-.06*	.00	-.16***	—				
6. Education level	3.11	1.17	-.05	.33***	-.12***	-.21***	-.06*	—			
7. Overall normative beliefs	2.58	1.31	-.11***	.18***	-.07*	-.13***	-.02	.02	—		
8. Norm conflict	1.03	0.94	-.03	-.14***	.08*	.12***	-.01	.00	-.42***	—	
9. Household normative beliefs	5.79	0.98	-.08*	-.12**	-.06	.17***	-.03	-.05	.68***	-.02	—
10. Community normative beliefs	5.20	1.05	.00	.09**	-.10**	-.07*	.07*	-.02	.54***	-.60***	.16***

$*p < .05.$ $**p < .01.$ $***p < .001.$

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Table 2. Hierarchical Regression Analysis Predicting per Person Water Use From Normative Beliefs, Norm Conflict, and Demographic Factors in Study 1

Variable	Final β
Step 1	$R^2 = .04, F(5, 745) = 5.49, p < .001$
Age	.17***
Gender	.02
Education level	−.04
Household income	.11*
Region	.11**
Step 2	$R^2_{change} = .01, F_{change}.(1, 744) = 7.16, p = .008$
Age	.17***
Gender	.02
Education level	−.04
Household income	.12**
Region	.10**
Overall normative beliefs	−.10**
Step 3	$R^2_{change} = .01, F_{change}.(1, 743) = 8.90, p = .007$
Age	.17***
Gender	.02
Education level	−.04
Household income	.12**
Region	.11**
Overall normative beliefs	−.14**
Norm conflict	−.11**

*$p < .05$. **$p < .01$. ***$p < .001$.

(indicating the household norm beliefs are higher than the community norm beliefs) with 25.7% showing no difference in normative beliefs for the two groups, and 17.0% perceiving the community norm as more positive than the household norm.

Consistent with past research, per person water use data was significantly positively skewed and was therefore log transformed (Campbell, Johnson, & Larson, 2004). Eight outliers (i.e., >3 *SD*s above the mean) were identified on log transformed per person water use, and were therefore excluded from subsequent analyses.

Per person water use. At Step 1, the demographic variables accounted for a significant amount of variance in per person water use, $R^2 = .04$, $F(5, 745) = 5.49$, $p < .001$. As can be seen in Table 2, region, household income, and age were significant unique predictors of per person water use, but gender and education level were not. The addition of overall descriptive normative

beliefs at Step 2 accounted for a significant increase in the explained variance in water use, $\beta = -.10$, $R^2_{change} = .01$, $F_{change}(1, 744) = 7.16$, $p = .008$. At Step 3, norm conflict was associated with a significant increase in explained variance in water use, $\beta = -.11$, $R^2_{change} = .01$, $F_{change}(1, 743) = 8.90$, $p = .007$, such that greater norm conflict was associated with reduced water use (i.e., greater conservation behavior).[2]

Discussion

In this study, we showed that norm conflict is related to pro-environmental behavior (objective measures of household water use). This effect of norm conflict is over and above the effects of overall descriptive normative beliefs, which, consistent with previous research (e.g., Cialdini, 2007; Cialdini et al., 1990; Nolan et al., 2008; Schultz et al., 2007), were significantly related to per person water use. Norm conflict was associated with decreased water use (i.e., enhanced water conservation behavior), indicating that people were motivated rather than disengaged by norm conflict.

Although significant, the size of the effect on actual water use is small. However, measures of household water use (adjusted for number of occupants) are the most distal outcome measure of an individual's water conservation behaviors. Unlike the relationship between a person deciding to litter and observation of them subsequently littering (Cialdini et al., 1990), the relationship between one person enacting water conservation behaviors and the water consumption of their household is far from perfect: Other householders' behavior may be more or less wasteful than the individual's. Therefore, the fact that we see a significant effect of perceived norm conflict on actual water consumption is testament to the importance of considering the impact of multiple in-group norms.

This is the first evidence that norm conflicts are associated with engagement in pro-environmental behaviors, but the present study does not test our reasoning that norm conflict has its effect on behavior through perceived effectiveness. In Study 2, we examine the possibility that norm conflicts are associated with pro-environmental behavior intentions to the extent that they affect perceptions of the effectiveness of engaging in the behavior.

Study 2

In Study 1, we showed that norm conflicts are related to actual pro-environmental behavior. In Study 2, we investigate the process by which norm conflicts influence behavior by testing a potential mediator, perceived

effectiveness. To do this, we conducted an online survey that examined the conflict between descriptive norm beliefs of three groups from settings in which people typically enact pro-environmental behaviors (home, work, and social settings), perceptions of the effectiveness of engaging in pro-environmental behaviors, and pro-environmental behavioral intentions.

Method

Overview. We examined the impact of norm conflict, the independent variable, on pro-environmental behavioral intentions, the dependent variable, via perceived effectiveness, the proposed mediator. To separate the effects of norm conflict from those of global descriptive normative beliefs, the average descriptive normative belief across groups was entered at Step 1 in the analyses reported.

Participants. Participants were 124 males and 290 females (47 not specified) aged from 15 to 68, with a mean age of 30.31 years (SD = 11.87). Participants were from 34 countries, with the majority of participants from Australia (n = 226), the United Kingdom (n = 60), and the United States of America (n = 30).

Procedure. Participants were recruited using snowball sampling via email lists and personal acquaintances, as well as via a Facebook event page. Participants were invited to complete an online questionnaire on social networks and environmental behavior. Participation was on a voluntary basis; participants did not receive any compensation for participating in the study.

Measures

Descriptive normative beliefs. For each of the four target behaviors, descriptive normative beliefs were assessed. Participants rated descriptive norms for each group (family, friends, and peers/colleagues) by indicating the approximate percentage of group members who engage in the given behavior. For example, "When you are thinking about how many of your family members engage in pro-environmental behavior, what percentage would you estimate to each of the following? Circulate information about environmental issues via email/Facebook, 0% to 100%; consider environmental issues when voting in federal and state elections, 0% to 100%; purchase 'green' or eco-friendly products, 0% to 100%; and engage in energy conservation at home or work, 0% to 100%." Two variables were extracted from these items: Responses to the four items were averaged across groups to form the global

descriptive normative belief for pro-environmental behavior ($\alpha = .90$), and norm conflict scores were also computed from responses to these items.

Descriptive norm conflict. To compute norm conflict, we adapted the procedure outlined by Sheldon and Niemiec (2006). We took the descriptive norm of each of the three groups and subtracted them from each other (i.e., family-friends, family-peers, friends-peers) then took the mean of the absolute values of these to form a three-way difference score, with higher scores indicating greater conflict between the descriptive norms of the three groups.

Perceived effectiveness. Perceived effectiveness was rated for each of the four target behaviors: circulating information about environmental issues via email/Facebook, considering environmental issues when voting at federal and state elections, purchasing "green" or eco-friendly products, and engaging in energy conservation at home or work ("Please rate the following behaviors in terms of how effective they are": 1 = *completely ineffective* to 7 = *completely effective*, $\alpha = .78$).

Behavioral intentions. Participants rated behavioral intentions regarding the four target behaviors ("How often do you intend to engage in each of the following activities in the future?": 1 = *never* to 5 = *always*, $\alpha = .72$).

Results

Overview. Mediated multiple regression analyses were conducted to examine the relationship between the degree of conflict between in-groups and subsequent perceptions of effectiveness and intentions to engage in pro-environmental behaviors. Means, *SD*s, and zero-order correlations are presented in Table 3. Overall, perceptions of effectiveness and behavioral intentions were high. Although when considering three groups it is difficult to interpret directional rather than absolute norm conflict scores, inspection of these scores revealed that in this sample 49.9% of participants had negative norm conflict scores, 10.6% had no difference, and 39.5% had positive norm conflict scores. All predictors are centered in the analyses reported.

Perceived effectiveness. To examine the relationship between norm conflict and perceptions of the effectiveness of engaging in pro-environmental behavior, a hierarchical multiple regression analysis was conducted, with global descriptive normative beliefs entered at Step 1, and the computed norm conflict score entered at Step 2 (see Table 4). Consistent with our hypotheses, and previous research, at Step 1, global descriptive normative beliefs were significantly positively related to perceived effectiveness, $R^2 = .16$, $F(1, 350) = 64.97$, $\beta = .40$, $p = .001$. After controlling for the effect of global descriptive normative beliefs, norm conflict was significantly positively

Table 3. Means, Standard Deviations, and Intercorrelations Among Variables in Study 2

	M	SD	1	2	3	4	5	6
1. Norm conflict	16.89	10.95	1					
2. Overall normative beliefs	46.89	17.83	.16**	1				
3. Perceived effectiveness	4.85	1.07	.20***	.40***	1			
4. Behavioral intentions	3.59	0.73	.27***	.50***	.58***	1		
5. Family normative beliefs	43.61	21.54	−.03	.77***	.26***	.37***	1	
6. Friends' normative beliefs	49.58	21.59	.25***	.89***	.39***	.48***	.48***	1
7. Peers' normative beliefs	46.79	20.64	.25***	.85***	.34***	.41***	.41***	.72***

*p < .05. **p < .01. ***p < .001.

associated with perceived effectiveness, R^2_{change} = .02, F_{change}.(1, 349) = 8.48, β = .14, p = .004, supporting the hypothesis that norm conflict enhances perceived effectiveness.

Behavioral intentions. The same analytic strategy was employed to examine the link between descriptive norm conflict and pro-environmental behavioral intentions. At Step 1, global descriptive normative beliefs were a significant positive predictor of intentions, R^2 = .26, F(1, 350) = 122.65, β = .51, p < .001. At Step 2, descriptive norm conflict was significantly associated with intentions, accounting for a significant additional component of the variance over and above that explained by global descriptive normative beliefs, R^2_{change} = .04, F_{change}.(1, 349) = 17.26, β = .19, p < .001.[3]

Mediation via perceived effectiveness. To test the hypothesis that perceived effectiveness mediates the relationship between norm conflict and behavioral intentions, mediation analyses were performed. There was a significant relationship between norm conflict and the mediator, perceived effectiveness (see Figure 1). When a hierarchical multiple regression analysis (see Table 5) was conducted to predict behavioral intentions from descriptive normative beliefs (β = .48, p < .001) and norm conflict (β = .19, p < .001) at Step 1, a significant proportion of variance was accounted for, R^2 = .29, F(2, 349) = 72.57, p < .001, and norm conflict predicted intentions (as noted above, β = .19, p < .001). The addition of perceived effectiveness at Step 2,

Table 4. Hierarchical Regression Analysis Predicting Effectiveness Perceptions From Normative Beliefs and Norm Conflict in Study 2

Variable	Final β
Step 1	$R^2 = .16, F(1, 350) = 64.97, p = .001$
Descriptive normative beliefs	.40***
Step 2	$R^2_{change} = .02, F_{change.}(1, 349) = 8.48, p = .004$
Descriptive normative beliefs	.37***
Norm conflict	.14**

*$p < .05$. **$p < .01$. ***$p < .001$.
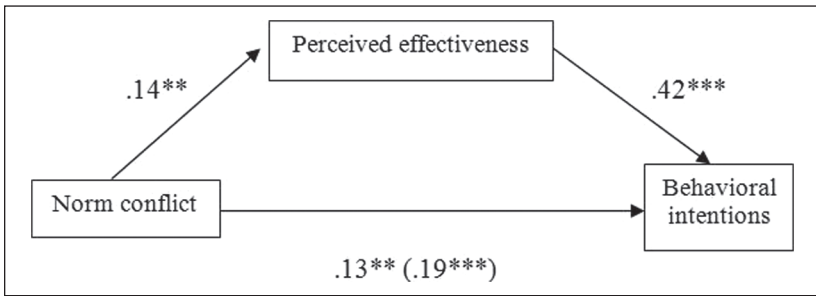
Figure 1. Effect of norm conflict on behavioral intentions, partially mediated by perceived effectiveness, in Study 2
*$p < .05$. **$p < .01$. ***$p < .001$.

$\beta = .42$, $R^2_{change} = .15$, $F(1, 348) = 91.96$, $p < .001$, reduced the beta for norm conflict ($\beta = .13$, $p = .002$), consistent with the hypothesis that the relationship between conflict and intentions is partially mediated by perceived effectiveness (Figure 1). A Sobel test showed that the indirect effect of norm conflict on behavioral intentions via perceived effectiveness was significant ($z = 3.71$, $p < .001$). In addition, bias corrected bootstrapped confidence intervals (CIs) with 5,000 resamples confirmed that the indirect effect was significant, as the CIs did not span 0 (IE [Indirect effect] lower 95% CI = .015, upper 95% CI = .073). Again, these analyses support the hypothesis that norm conflicts motivate and energize, rather than demotivate behavior.

Discussion

In addition to the expected positive influence of global descriptive normative beliefs (Cialdini, 2007; Cialdini et al., 1990; Nolan et al., 2008; Schultz et al.,

Table 5. Hierarchical Regression Analysis Predicting Behavioral Intentions From Normative Beliefs and Norm Conflict, Mediated by Effectiveness Perceptions in Study 2

Variable	Final β
Step 1	$R^2 = .29, F(2, 349) = 72.57, p < .001$
Descriptive normative beliefs	.48***
Norm conflict	.19***
Step 2	$R^2_{change} = .15, F(1, 348) = 91.96, p < .001$
Descriptive normative beliefs	.32***
Norm conflict	.13**
Perceived effectiveness	.42***

*$p < .05$. **$p < .01$. ***$p < .001$.

2007), norm conflict significantly predicted perceived effectiveness and intentions, such that increased norm conflict was associated with increased perceptions of effectiveness and intentions to engage in the target behaviors. In addition, the effect of norm conflict on intentions was partially mediated by increased perceived effectiveness. These findings are consistent with our reasoning that norm conflicts may provide people with a heightened sense that their individual contribution is important and effective. The results of this study highlight one underlying process by which norm conflicts may influence our behavior.

General Discussion

Across two studies, we demonstrated a motivating effect of norm conflict on pro-environmental intentions and behavior. In Study 2, we also identified perceived effectiveness as a mediator of the effects of norm conflicts on behavioral intentions. These findings provide initial evidence that the degree of conflict between multiple in-group norms is related to intentions and behavior, at least in the environmental domain. The findings also suggest that the effects of norm conflict on behavior occur to the extent that people feel that it is more effective for them personally to act, although we acknowledge that the present measure of perceived effectiveness is an indirect assessment of this proposed mediator.

The positive relationship between overall descriptive normative beliefs and intentions and behavior replicates the findings of previous research on normative influence (e.g., Bratt, 1999; Cialdini, 2007; Cialdini et al., 1990; Goldstein et al., 2008; Nolan et al., 2008; Schultz, 1999; Schultz et al., 2007), showing that the behavior of others influences our own behavioral choices.

However, our results go beyond this previous literature and indicate that it is not only the strength or weakness of descriptive normative beliefs that are related to behavior but also the degree of congruence (or conflict) across different groups. Although size of the effect on actual water use in Study 1 was small, water use is a distal outcome measure related to a process of behavioral decision making. Indeed, in Study 2, the size of the effect on behavioral intentions (a more proximal factor in the chain of behavioral decision making) was much larger.

We theorized that the effects of norm conflict could plausibly occur in one of two different directions: People could make the attribution that not everyone is acting, therefore their own behavior will be ineffective, or that not everyone is acting, therefore their contribution is critical. The results of the present studies seem to suggest a motivating effect of conflict, such that the more divergence in beliefs about the norms of individuals' in-groups, the more motivated they are to act to reduce their environmental impact. This effect could occur in an individual fashion, with the norm conflict highlighting to the individual the importance and effectiveness of their own contribution in an instrumental sense, or via a more collective route, with the norm conflict highlighting the potential to spread a positive norm of behavior to the nonacting groups. The observed mediation via perceived effectiveness (Study 2) is consistent with this theorizing; people who faced norm conflicts also perceived that taking action for the environment would be effective.

Future research should further examine the specific processes associated with norm conflicts' impact on perceived effectiveness, to unpack the effects on perceptions of behavioral effectiveness versus individual efficacy/agency, and to determine whether norm conflicts are affecting instrumental efficacy/effectiveness, symbolic efficacy/effectiveness, or some combination of these.

Although with our present measure of effectiveness one could argue that it is possible for people to perceive high behavioral effectiveness, while lacking a personal or individual sense of agency, the association between effectiveness perceptions and intentions supports the argument that the measures affect perceptions of efficacy for the individual. In addition, we have measured perceptions of the effectiveness of individual behaviors but demonstrated effects on these measures collapsed across a range of pro-environmental behaviors. Showing that norm conflicts are related to aggregated perceptions of effectiveness rather than effectiveness of specific individual behaviors further supports the suggestion that we are tapping into perceptions of efficacy for the individual, or individual agency, rather than perceptions of how effective it would be for other actors to engage in the behavior. Our current measures do not allow us to tease apart this distinction fully, but

investigating the dual relationships between conflicting norms and individual efficacy versus behavioral effectiveness and their motivational implications is an important consideration for future research.

These findings are consistent with the results of Smith and Louis (2008) who showed that conflict between in-group injunctive and descriptive norms motivated group members to act when an issue was presumed to be of high importance to them. However, in that article, when an issue was not assumed to be important to participants (i.e., it did not affect them directly), people were disengaged by conflict. Göckeritz et al. (2010) also identified a moderating effect of personal involvement on the effects of descriptive norms. In light of these past findings, it is likely that our samples were personally engaged with the issues of environment and water conservation. The first study was conducted toward the end of the worst drought on record in the region where participants resided. Hence, water conservation was a highly salient and important issue to the community (Queensland Government, 2008). The sample for the second study was recruited through snowball sampling on Facebook to take part in a voluntary study about environmental issues. It is therefore possible that this led to a self-selection bias whereby the sample is more positively oriented to environmental issues than the average citizen (see Whitehead, 1991).

Future research is needed to examine whether the effects of norm conflict on intentions and behavior are moderated by attitudes or issue importance, such that a demotivating effect of norm conflict emerges in disengaged samples. Other research on normative influence has shown that factors such as issue importance (Göckeritz et al., 2010), outcome expectations, and group identity (Rimal & Real, 2005) moderate the effects of descriptive norms, further highlighting the importance of investigating the moderating role of these variables on norm conflict. It is also possible that both motivating and demotivating effects could emerge, depending on how involved people are with the behavioral domain. Recruiting samples with more diverse environmental views or investigating issues with less universal salience may reveal that norm conflicts can be both motivating and demotivating depending on the salience or importance of the issue.

It is important to note that the groups we are considering in these studies (particularly Study 1) are in fact nested groups. That is, members of one's household are also members of one's community. This is of lesser importance in Study 2, where there is not likely to be overlap between family and peer or friend groups (although the peer and friend groups may be nested in some cases). Although our current analyses do not explicitly address the overlap between the household and community groups, the most likely

effect of perceiving greater overlap between these groups would be increased perceptions of similarity between their norms. If this is in fact occurring in the current sample, it would work against our hypothesis, by underestimating the true extent of the conflict. Future research needs to explicitly investigate perceptions of in-group overlap, and how these affect the effects of norm conflict. Participants may feel more pressure to reconcile the norms of nested groups, for example, and more responsibility to act to bring the norms into alignment.

Related to the issue of nested groups, our current analysis does not specifically test the impact of differential in-group salience on the effects of norm conflict. Conflicts may affect behavior differently if they stem, for example, from one highly valued in-group and one generic in-group, versus from two generic in-groups, or a valued and an unimportant in-group, and future research should investigate the effects of relative salience more fully. In the present studies, we chose what we perceived to be relevant and chronically salient groups for participants to consider: Other weaker or less contextually salient groups might not have generated the effects (e.g., "my reading group" vs. "fans of my 3rd-favorite rock band"). There will certainly be a threshold of salience and relevance that is needed for conflict among in-groups to affect action. However, given the observation that salient versus generic in-groups have a comparable ability to induce conformity to norms (Goldstein et al., 2008), it is also possible that differences in salience will have less impact than we initially intuit. In addition, in the present studies, we found no evidence that the effects were driven by specific patterns of normative beliefs among the in-groups, which we would expect if relative salience was moderating the effects and one was more chronically salient than the others. Nonetheless, it is possible that in other group contexts salience may be more important, and it would be interesting to explicitly compare the effects of conflict stemming from groups with differential salience in future research.

In the present article, we have only examined the influence of multiple conflicting descriptive normative beliefs, but future research should consider the potential effects of multiple injunctive norms, given their greater propensity to influence across situations (Reno, Cialdini, & Kallgren, 1993). In addition, recent work has highlighted that injunctive norms increase interpersonal awareness, and provoke more conflicted feelings about conformity decisions than do descriptive norms (Jacobson et al., 2011). This suggests that injunctive norm conflicts may have even more important implications for behavioral decision making than descriptive norm conflicts.

Although we have presented two studies showing consistent, and motivating, effects of conflict on both pro-environmental intentions and behavior,

one weakness of the current studies is their correlational nature. We have controlled for overall normative beliefs to rule out the possibility that our measure of conflict is simply reflecting lower overall descriptive normative beliefs; however, we cannot rule out the possibility of reverse causality. That is, people who engage in more pro-environmental behaviors may have perceived more conflict because they underestimate the same behavior in others, an example of the uniqueness bias (Goethals, Messick, & Allison, 1991; Suls, Wan, & Sanders, 1988). This phenomenon has been demonstrated in the domain of water conservation (Monin & Norton, 2003), thus it could be this bias, rather than the norm conflict itself, that underlies the observed effect on behavior. Nonetheless, it is also the case that people also frequently overestimate the match between their own actions and those of others (e.g., Monin & Norton, 2003; Ross, Greene, & House, 1977), and this would undermine the possibility of reverse causality. Experimental research that manipulates norm conflicts is needed to clarify the causal nature of this association.

Another limitation of the present studies is that we have only demonstrated the mediating role of perceived effectiveness on intentions, and not on actual behavior. Although intentions are not a perfect indicator of actual behavior (Sheeran, 2002), given the consistency with the findings of Study 1 (which measured actual water use), we are confident that in this domain intentions are providing a good indication of actual behavior.

In addition, although we have theorized that these effects may be generalizable to other domains (such as health behaviors), as Göckeritz et al. (2010) note, the effects of norms may be unique in domains such as environmental behavior, in which the personal and collective interest can be at odds. This is in contrast to other behaviors studied from a normative influence perspective, such as sun protection or alcohol use, in which the collective costs and benefits are more distal and abstract. For this reason, the effects of norm conflict should be explored in other domains before being considered in the design of norms-based interventions in these areas.

In terms of the practical implications of the current studies for intervention design, experimental tests of the effects of norm conflict are required. On the surface, the data suggest that highlighting the fact that a conflict exists may be an effective way of motivating action. For example, intervention designers could show scenes of conflicting environmental behavior, or ask individuals as was done in this study to "think about how your friends, family, and colleagues differ in environmental action." Future research examining the effects of specific patterns of norm conflicts, and whether their effects are moderated by other factors such as engagement or issue importance, is required before developing potential interventions. If the

effects of conflict are shown to differ according to these factors, future research investigating the role of individual efficacy and the capacity to "spread the norm" or serve as a positive example to others may be useful in interventions that target responses to existing norm conflicts, rather than make conflict itself salient.

These studies provide initial evidence that norm conflict is related to decisions to engage in pro-environmental behaviors. We show for the first time that the degree of conflict or congruence between descriptive normative beliefs about multiple in-groups is related to individual intentions and behavior. Importantly, we show that when people experience norm conflict, it is associated with increased motivation to act in the collective interest. The results also indicate that people may be motivated in this way because norm conflicts lead them to see their personal actions or contributions as more important and effective. These results indicate that further research should be conducted considering the potential impacts of multiple group norms, especially in the context of norms-based behavior change interventions.

Declaration of Conflicting Interests

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Notes

1. To allow for comparison across the two studies, we have reported the absolute rather than directional norm conflict scores. When examining the directional norm conflict scores for Study 1, in which positive scores indicate a higher community norm relative to household norm, there was no significant correlation between directional norm conflict and water use ($r = .06$, $p = .06$), suggesting that the effect is not simply driven by having one norm higher than the other, or vice versa. Furthermore, when substituting this value for the absolute norm conflict scores at the last stage of the regression analysis predicting water use, it is not a significant unique predictor.

2. In addition, we conducted an additional regression analysis to examine the effect of the two-way interaction between the normative beliefs about the two groups on water use. If this interaction was significant, inspection of the simple slopes

could reveal that the effects of norm conflict are being driven by a specific pattern of differences between group norms (when one is higher than the other, or vice versa). However, there was no significant interaction: It is the degree of conflict among norms, not the shape of the conflict that shapes usage.

3. As in Study 1, we also examined the two- and three-way interactions between the normative belief ratings for each group to investigate the possibility that the effects of conflict were being driven by a specific pattern of norms. Again, there were no significant two- or three-way interactions between the normative beliefs on intentions.

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