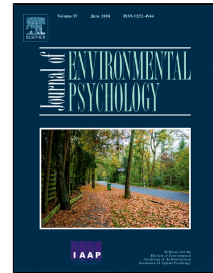


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How anonymity and norms influence costly support for environmental causes

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How anonymity and norms influence costly support for environmental causes

Abstract

Social norms are a key driver of pro-environmental action, but their influence may vary by context. An important contextual factor is behavior observability. We employ a laboratory quasi-experiment studying donations to environmental organizations under different levels of donor anonymity and under different levels of injunctive social norms. Decision observability amplifies the effect of norms: donations are 84% higher when observability is added to pro-environmental norms, compared to a setting with pro-environmental norms but anonymous decisions.

Key words: social norms, observability, pro-environmental behavior, giving

Introduction

People often follow social norms when making environmentally relevant decisions (Abrahamse & Steg, 2013; Bamberg & Möser, 2007; Klöckner, 2013; Scheibehenne, Jamil, & Wagenmakers, 2016). Yet, little attention has been paid to the contextual factors with which norms interact. This is surprising, as many authors within environmental psychology argue it is important to study the external context in which different motivational factors operate (Bohner & Schlüter, 2014; Guagnano, Stern, & Dietz, 1995; Reese, Loew, & Steffgen, 2014; Steg & Vlek, 2009). Unlike contextual moderators, person-level moderators have received more attention in the discipline, and this line of research suggests that certain factors, such as baseline behavior levels, can render norms all but ineffective (e.g. Schultz et al., 2007). To understand and use the power of social norms effectively, we believe it is important to study key person-level, as well as contextual moderators.

Research in social psychology and behavioral economics suggests that one contextual factor that may moderate the influence of norms is behavior observability (Blanchard, Crandall, Brigham, & Vaughan, 1994; Schram & Charness, 2015). People may be more inclined to follow social norms when others can observe them, because this makes the threat of sanctions more credible (Anderson & Dunning, 2014).

We tie these two lines of research together, focusing on the interplay of pro-environmental injunctive social norms and behavior observability. We test our hypothesis that pro-environmental norms interact with behavior observability using a laboratory quasi-experiment on donations to environmental organizations, an example of non-activist support for environmental causes (Stern et al., 1999).

Social Norms and Environmental Behavior

A number of studies in environmental psychology move beyond merely measuring the effect of social norms on behavior by examining how norms interact with other variables,

such as baseline behavior levels (Schultz et al., 2007), personal involvement (Göckeritz, Schultz, Rendon, Cialdini, Goldstein, & Griskevicius, 2010), personal norms (Schultz, Messina, Tronu, Limas, Gupta, & Estrada, 2016), attitudes (Wan, Shen, & Choi, 2017), ingroup identification (Fritsche, Barth, Jugert, Masson, & Reese, 2018), and behavior costs (Sudarshan, 2017).

As is apparent from this brief summary of former research, the moderators studied thus far are predominantly characteristics of the decision maker, rather than of the setting in which he or she acts. We contribute to the literature by investigating whether social norms interact with an important contextual moderator – decision observability. We focus, specifically, on injunctive social norms (i.e., shared beliefs on how one ought to behave, see Cialdini, Reno, & Kallgren, 1990).

Social Norms and Anonymity

As mentioned above, it is mainly research in social psychology and behavioral economics that suggests that norms may become more powerful when one's behavior can be observed by others. This intuition has been formalized by Andreoni and Bernheim (2009) – in addition to any intrinsically motivated norm compliance, people want to *appear* to follow social norms (which is only possible when others can observe their behavior).

Empirical research unequivocally supporting this theorizing is, nevertheless, scarce. In his experiment on donations to a charitable organization, Zafar (2011) manipulated anonymity and information about other participants' previous decisions (i.e., the descriptive norm). The results were indicative of some effect of descriptive norms, as well as of anonymity on subjects' generosity. The design, however, made it difficult to draw clean conclusions, mainly because the observed effects could also be attributed to learning.

Schram and Charness (2015) report a significant effect of obtaining advice (~injunctive norm) on subsequent giving in a modified dictator game. Importantly, the effect

of obtaining advice was present only when comparing public donation decisions, not when comparing anonymous donation decisions. However, participants in the public treatment received significantly different advice than participants in the anonymous treatment, which makes *ceteris paribus* comparisons difficult.

Finally, Alpizar, Carlsson, and Johansson-Stenman (2008) study the effect of anonymity and social norms on donations to a national park in a field experiment. The authors find that non-anonymity increases giving and that descriptive social norms affect giving as well. They, however, do not test for an interaction between anonymity and social norms in their analysis (see also Bobek et al., 2013; Kraft-Todd et al., 2015).

Hypotheses

Against the backdrop of the above literature review, we formulate three hypotheses. H1: Donations to pro-environmental organizations will be higher when injunctive social norms in favor of high donations are made salient. H2: Donations to pro-environmental organizations will be higher when decisions are observable than when decisions are anonymous. H3: The effect of injunctive social norms on donations will be moderated by the level of observability. The effect of injunctive norms will be strengthened when decisions are observable. To check the robustness of our results, we included two control variables – past donations and income.

Method

One hundred and thirty-six subjects (77 females) participated in the study during the spring of 2016. The Online Recruitment System for Economic Experiments (Greiner, 2015) was used for recruitment and z-Tree (Fischbacher, 2007) for programming. The study had two stages, an earning stage where participants earned money to be later donated (or kept) in the second stage, i.e., the donation stage.

The earning stage was identical for all participants. Participants earned up to 10 EUR for correctly counting how many times the letter “A” appeared in eight different 100-cell grids. The task was adapted from Cappelen, Nielsen, Sørensen, Tungodden, and Tyran (2013); see also Cherry, Frykblom, and Shogren (2002) who demonstrate the importance of using money participants actually earn in donation experiments. Participants earned 15.81 EUR on average, including a show-up fee.

In the donation stage, participants were assigned to one of four conditions in a 2 (injunctive norm: No norm vs. High norm) * 2 (observability of decision: Anonymous vs. Observable) between-subjects quasi-experimental design. They were given an opportunity to donate any portion of their earned surplus to an environmental organization of their choice.¹

Social norm manipulation. In the No norm treatment, participants received no information concerning social appropriateness of different possible donations. In the High norm treatment, participants received, prior to making their own donation decision, information on what “other people previously participating in this experiment said is the most socially appropriate donation”. Specifically, we presented to all participants in the High norm treatment the following normative evaluations elicited in a post-experimental questionnaire from actual previous participants:

Participant 1 said donating 10 EUR is the most socially appropriate decision.

Participant 2 said donating 10 EUR is the most socially appropriate decision.

Participant 3 said donating 10 EUR is the most socially appropriate decision.

Participant 4 said donating 10 EUR is the most socially appropriate decision.

Participant 5 said donating 10 EUR is the most socially appropriate decision.

Participant 6 said donating 10 EUR is the most socially appropriate decision.

Participant 7 said donating 10 EUR is the most socially appropriate decision.

Participant 8 said donating 5 EUR is the most socially appropriate decision.

Observability manipulation. In the Anonymous treatment, participants were informed that their decision will be “completely private and anonymous and it will not be revealed to others”. In the Observable treatment, participants were informed that, at the conclusion of the session, their decision will be “revealed to other participants in this session” along with their first name and the place where they sit.

This study is a quasi-experiment. We randomly assigned sessions into the Anonymous vs. Observable treatments. However, the No norm and High norm treatments were run consecutively, as we needed to collect the normative information to be later presented to participants in the High norm treatment first. Due to budget constraints, this information was collected in the No norm treatment sessions, rather than outside the main sessions. Nevertheless, participants did not differ across treatments in terms of income, study major or gender (none of the three models where we regressed these background characteristics on treatments and their interaction was significant, all $ps > .4$). In addition, potential participants in the subject pool we used receive offers to participate frequently throughout the year, and our earlier sessions thus did not stand out as a special opportunity to take part in an experiment, which makes it unlikely that the earlier sessions attracted for example particularly motivated or conscientious participants. Finally, sessions were run within a short time span (six weeks), i.e., there was minimal room for the subject pool to change.

Results

Figure 1 displays mean donations in the four conditions and the associated confidence intervals. Table 1 presents statistical tests. In Model 1 in Table 1, we regress donated amount on treatments and their interaction by means of an OLS regression. In Model 2, we add two controls: income and past donations to environmental organizations.

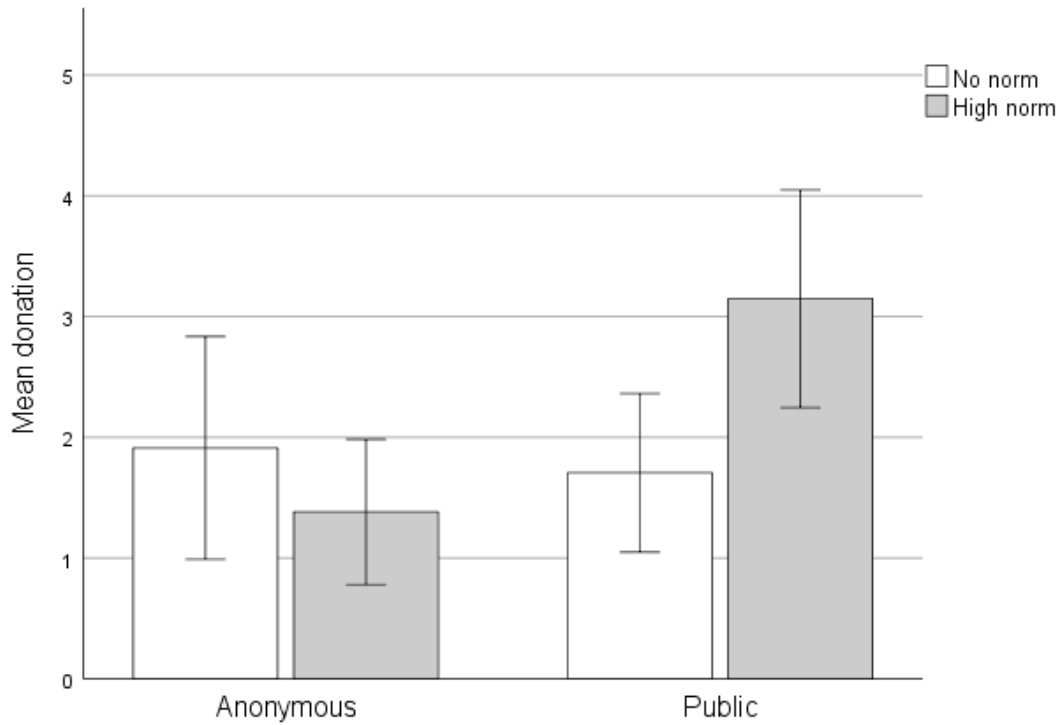


Fig. 1. Average donations (in EUR) in the four conditions including 95% confidence intervals.

Table 1

Prediction of donations

	Model 1	Model 2
Norm treatment	.228 (.193)	.329 (.201)†
Observable treatment	.390 (.193)*	.451 (.199)*
Norm*Observable	.493 (.193)**	.401 (.199)*
Income		.119 (.039)**
Past donations		.323 (.147)*
Number of observations	136	100
R^2	.084	.221

Notes. Unstandardized regression coefficients and the associated standard errors (in parentheses) are reported. “No norm” is coded as -1, “High norm” is coded as 1. “Anonymous” is coded as -1, “Observable” is coded as 1. Income in EUR is divided by 1000 to obtain readable estimates. In Model 2, cases with reported yearly income below 1000 EUR were dropped because we suspected these participants may have reported their monthly income by mistake. † $p < .06$, * $p < .05$, ** $p < .01$ (one-sided tests are reported for treatment variables and their interaction, two-sided tests are reported for the control variables).

Hypothesis H1 received only weak support: participants donated more money when presented with pro-environmental injunctive norms, but this effect was (marginally) significant only when controlling for income and past donations. Hypothesis H2 was supported: participants donated more when their donation decisions could be observed by others. Hypothesis H3 was also supported. As can be seen in Figure 1, injunctive norms had stronger positive effect on donations when one’s decision could be observed by others. Both higher income and more frequent past donations were associated with higher donations in the current study.

Discussion

This paper contributes to a better understanding of why and when social norms induce pro-environmental behavior. We follow Göckeritz et al. (2010), Schultz et al. (2016) and others by focusing on factors with which social norms interact in affecting behavior. Specifically, we provide evidence of an interaction between social norms and behavior observability.

When their decisions were observable, people donated on average 84% more money (3.15 EUR vs. 1.71 EUR) to an environmental organization when they received a “high norm” message than when they received no such message. In contrast, when deciding privately and anonymously, people gave away approximately the same amount in the High norm and in the No norm treatment.

This finding may partly account for the variable size of the effects social norms exert on people's pro-environmental behavior (Abrahamse & Steg, 2013). It may be the case that smaller norm effects occur in situations in which one's behavior is more difficult to observe, and larger norm effects occur in settings where one's behavior is readily observable and can thus be sanctioned (cf. Andreoni & Bernheim, 2009; Anderson & Dunning, 2014).

Our findings have practical implications for fundraisers in environmental organizations, as well as for promoting pro-environmental behaviors more generally. Our data support the idea that managing normative perceptions, which is becoming an increasingly popular policy instrument, may not be quite as effective as managing both norms and behavior observability.

A limitation of the current study is its quasi-experimental nature. While we found no baseline differences among participants assigned to different conditions with respect to income, gender and study major, and while we see no apparent reasons to assume other baseline differences in participants' characteristics across conditions (as explained in the Method section), the causality of the effects we report must be interpreted with caution. A second limitation is the relatively modest sample size, which could have perhaps lead to our failure to firmly establish a main effect of injunctive norms on donations.

Another limitation is that we only studied one type of pro-environmental behavior. The advantage of the target behavior is that it was objectively and precisely measured and that manipulating social norms and observability was feasible in this context. Future research should confirm whether our findings can be extended to other pro-environmental behaviors as well. The behavior under study was fairly low cost, so one might ask whether the results would generalize to more costly behaviors. Engel's (2011) meta-analysis of dictator game experiments suggests they might – depending on model specification, Engel found no or only a small effect of surplus size on generosity.

Note also that the interaction between norms and behavior observability may not materialize in case of “descriptive” norms, which are conceptually and empirically distinguishable from injunctive norms (Cialdini et al., 1990). In particular, descriptive norms often operate through their informational influence (i.e., they indicate feasible and adaptive behaviors), and this type of influence might be less dependent on whether or not one’s behavior is observable compared to the more sanction-driven influence of injunctive norms (Deutsch & Gerard, 1955).

An important direction for future research is the development and testing of a comprehensive theory of pro-environmental behavior that would incorporate behavior observability and possibly other contextual moderators (see Steg & Vlek, 2009). Such an endeavor should also involve the examination of underlying mechanisms. It is for example conceivable that the effect of injunctive norms is mediated by personal norms when decisions are not observable (Wenzel, 2004), while the effect of injunctive norms under behavior observability might be mediated both by personal norms and by the fear of social sanctions (cf. Fehr & Gächter, 2000). Applications of our findings could be profitably studied in field contexts, such as purchasing eco-friendly products and resource conservation.

References

- Abrahamse, W., & Steg, L. (2013). Social influence approaches to encourage resource conservation: A meta-analysis. *Global Environmental Change, 23*, 1773–1785.
- Alpizar, F., Carlsson, F., & Johansson-Stenman, O. (2008). Anonymity, reciprocity, and conformity: Evidence from voluntary contributions to a national park in Costa Rica. *Journal of Public Economics, 92*, 1047–1060.

- Anderson, J. E., & Dunning, D. (2014). Behavioral norms: Variants and their identification. *Social and Personality Psychology Compass*, *8*, 721–738.
- Andreoni, J., & Bernheim, D. (2009). Social image and the 50-50 norm: A theoretical and experimental analysis of audience effects. *Econometrica*, *77*, 1607–1636.
- Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, *27*, 14–25.
- Blanchard, F., Crandall, C., Brigham, J., & Vaughan, L. A. (1994). Condemning and condoning racism: A social context approach to interracial settings. *Journal of Applied Psychology*, *79*, 993–997.
- Bobek, D. D., Hageman, A. M., & Kelliher, C. F. (2013). Analyzing the role of social norms in tax compliance behavior. *Journal of Business Ethics*, *115*, 451–468.
- Bohner, G., & Schlüter, L. E. (2014). A room with a viewpoint revisited: Descriptive norms and hotel guests' towel reuse behavior. *PLOS ONE*, *9*, e104086.
- Cappelen, A. W., Nielsen, U. H., Sørensen, E. Ø., Tungodden, B., & Tyran, J.-R. (2013). Give and take in dictator games. *Economics Letters*, *118*, 280–283.
- Cherry, T., Frykblom, P., & Shogren, J. (2002). Hardnose the dictator. *American Economic Review*, *92*, 1218–1221.
- Cialdini, R. B., Reno, R., & Kallgren, C. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, *58*, 1015–1026.
- Deutsch, M., & Gerard, H. (1955). A study of normative and informational social influences upon individual judgment. *Journal of Abnormal and Social Psychology*, *51*, 629–636.
- Engel, C. (2011). Dictator games: A meta study. *Experimental Economics*, *12*, 583–610.

- Fehr, E., & Gächter, S. (2000). Cooperation and punishment in public goods experiments. *American Economic Review*, *90*, 980–994.
- Fischbacher, U. (2007). Z-Tree: Zurich toolbox for ready-made economic experiments. *Experimental Economics*, *10*, 171–178.
- Fritsche, I., Barth, M., Jugert, P., Masson, T., & Reese, G. (2018). A social identity model of pro-environmental action (SIMPEA). *Psychological Review*, *125*, 245–269.
- Göckeritz, S., Schultz, P. W., Rendon, T., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2010). Descriptive normative beliefs and conservation behavior: The moderating roles of personal involvement and injunctive normative beliefs. *European Journal of Social Psychology*, *40*, 514–523.
- Greiner, B. (2015). Subject pool recruitment procedures: Organizing experiments with ORSEE. *Journal of the Economic Science Association*, *1*, 114–125.
- Guagnano, G. A., Stern, P. C., & Dietz, T. (1995). Influences on attitude-behavior relationships: A natural experiment with curbside recycling. *Environment and Behavior*, *27*, 699–718.
- Klöckner, C. A. (2013). A comprehensive model of the psychology of environmental behavior: A meta-analysis. *Global Environmental Change*, *23*, 1028–1038.
- Kraft-Todd, G., Yoeli, E., Bhanot, S., & Rand, D. (2015). Promoting cooperation in the field. *Current Opinion in Behavioral Sciences*, *3*, 96–101.
- Reese, G., Loew, K., & Steffgen, G. (2014). A towel less: Social norms enhance proenvironmental behavior in hotels. *Journal of Social Psychology*, *154*, 97–100.
- Scheibehenne, B., Jamil, T., & Wagenmakers, E.-J. (2016). Bayesian evidence synthesis can reconcile seemingly inconsistent results: The case of hotel towel reuse. *Psychological Science*, *27*, 1043–1046.

- Schram, A., & Charness, G. (2015). Inducing social norms in laboratory allocation choices. *Management Science*, *61*, 1531–1546.
- Schultz, P. W., Messina, A., Tronu, G., Limas, E. F., Gupta, R., & Estrada, M. (2016). Personalized normative feedback and the moderating role of personal norms: A field experiment to reduce residential water consumption. *Environment and Behavior*, *48*, 686–710.
- Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological Science*, *18*, 429–434.
- Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, *29*, 309–317.
- Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human Ecology Review*, *6*, 81–97.
- Sudarshan, A. (2017). Nudges in the marketplace: The response of household electricity consumption to information and monetary incentives. *Journal of Economic Behavior & Organization*, *134*, 320–335.
- Wan, C., Shen, G. Q., & Choi, S. (2017). Experiential and instrumental attitudes: Interaction effect of attitude and subjective norm on recycling intention. *Journal of Environmental Psychology*, *50*, 69–79.
- Wenzel, M. (2004). An analysis of norm processes in tax compliance. *Journal of Economic Psychology*, *25*, 213–228.
- Zafar, B. (2011). An experimental investigation of why individuals conform. *European Economic Review*, *55*, 774–798.

¹ Possible recipients: Environmental Defense Fund, Greenpeace, National Wildlife Federation, The Nature Conservancy, PETA, Rainforest Alliance, and WWF.

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Highlights

- Decision observability promotes generosity towards environmental organizations.
- The main effect of injunctive social norms on donations is small.
- Decision observability augments the effect of injunctive social norms on donations.
- Norm-based interventions can benefit from taking contextual moderators into account.