

# Incentives and Image Concern in a Social Dilemma

An Extended Abstract

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## Introduction

Given that behavior in social dilemmas is often managed through a combination of formal and informal instruments (Cardenas 2011), and that informal instruments are typically social and non-costly in nature (Guala 2012), we experimentally examine the interplay between these two such types of instruments. Romaniuc et al. (2016) examine the interaction between a pre-existing social norm enforced through anonymous peer disapproval and a formal, government-like sanction. Their results are striking, showing a pronounced negative spillover effect of the governmental sanction. Removing this formal instrument not only reduced cooperation levels, it also impacted the functioning of the informal instrument that remained in place, eliminating people's sensitivity to anonymous peer disapproval.

As an exploration of this result, we seek to investigate whether formal sanctions have a similar effect on a different type of informal norm enforcement mechanism, namely, social image. Concern about one's social image can serve as an important motivation for economic behavior in a number of ways. First, one's social image may have direct implications on material payoffs. Ho (1976) observes that the loss of 'face' can make it more difficult to function in society, implying added costs of some sort (e.g. transaction costs, lower levels of reciprocity). Second, one's social image can entail psychological payoffs that may also be important to individuals. The concept of the "looking-glass self" coined by Cooley (1902) asserts that an individual's self-image can be informed by his perceived social image, and the importance of social image for identity concerns has since been widely recognized in the social psychology literature (Baumeister, 1999). Third, some may value positional concerns with respect to prosocial behavior, deriving satisfaction from the degree to which their own behavior compares favorably with the behavior of others (Lacetera and Macis, 2010; Heffetz et al., 2008), and the extent to which this position is public knowledge. Finally, unlike Romaniuc et al. (2016), our participants' identities are made public, which introduces the possibility for shame in addition to the guilt that may be induced in an anonymous setting.

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## Research Questions and Hypotheses

First, we seek to investigate the effectiveness of concern for social image as a mechanism to increase cooperation in a social dilemma. Second, we wish to evaluate the continued effectiveness of this mechanism once a formal sanction has been removed.

- Q1a: Is concern about one's social image an effective mechanism in promoting cooperation?
- Q1b: How does social image compare to anonymous peer disapproval as a mechanism of norm enforcement?
- Q2: As a mechanism to enforce voluntary cooperation, is concern for social image robust to the removal of a formal sanction?

Regarding the first research question, a good deal of evidence demonstrates that social image is an important motivator of individual action and informal norm enforcement mechanism (e.g. Bohnet and Frey, 1999, Rege and Telle, 2004). Because social image can have implications for material payoffs, psychological payoffs such as self-image and positional concerns, and because it bears on guilt as well as shame, we expect that the negative behavioral spillover of a formal sanction to be somewhat attenuated under this type of norm enforcement mechanism relative to anonymous peer disapproval. Given this, we hypothesize

- H1a. A norm enforcement mechanism that relies social image concern will induce higher levels of cooperation than under Baseline conditions without such a mechanism.
- H1b: We expect that a mechanism relying on social image will induce higher average levels of cooperation than one that relies on anonymous social disapproval.
- H2. Concern for one's social image will mitigate the negative behavioral spillover associated with the removal of a formal sanction relative to anonymous peer punishment.

## Experimental Design

We study cooperation in the context of a standard public good game using a partner-matching protocol with groups of four and a marginal per capita return of 0.4. Subjects are endowed with 20 experimental credit units and must decide between placing these tokens in a public account or a private account. The experimental sessions will be carried out at Lille Laboratory for Experimental Anthropology in the coming weeks.<sup>1</sup> The experiment consists of 30 rounds of play, divided into three parts of ten rounds each. Play begins with ten periods under Baseline conditions in Part 1. The contribution decisions of each player in the group are purely anonymous in this part, identified in each round only by randomized identification numbers in order to prevent subjects from tracking any of their group members' behavior over the course of the game.

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<sup>1</sup> Results will be available for the conference.

Figure 1 shows the experimental design. In the first control treatment (T1) we introduce social image concerns in Parts 2 and 3. Participants are informed that their photograph will now appear above their contribution amounts, which are made available to the rest of the members of their group after each round of play. Photographs are taken at the beginning of the experiment and in a consistent manner for all subjects, who are instructed to maintain a neutral face. In the second control treatment (T2), we simultaneously introduce a mild formal sanction in Period 11 along with the social image element. The formal sanction we use is considered mild in that it reduces the strategic advantage of free-riding without changing the dominant strategy. This mimics many real-world mildly-deterrent interventions that derive their effectiveness from their expressive function. These two elements are used in tandem through Parts 2 and 3. In the test treatment (T3), we introduce both interventions simultaneously in Part 2, and then remove the formal sanction in Part 3.



Figure 1. Experimental design

To respond to our first research question, we employ a within-subject comparison of cooperation levels in Parts 1 and 2 of Treatment 1. To address the second research question, we compare cooperation levels in Part 3 across all treatments. At the start and finish of each Part, we use an incentivized method to elicit subjects' first-order beliefs about others' behavior in the next round. This will also allow us to obtain a more comprehensive understanding of how these norm enforcement mechanisms influence behavior.

## Implications

Given that social norms can be an important element in determining aggregate outcomes (Nyborg et al., 2016), the potential dynamics between norms and formal regulations should be a key consideration in policymaking. Should we find that social image successfully mitigates the decline in cooperation following the removal of a formal sanction, this suggests that policymakers could do well to leverage this norm enforcement mechanism by seeking ways to reveal people's identities in these types of situations. However, should we find that the effectiveness of social image concerns in motivating cooperation suffer from a similar behavioral spillover from a formal sanction, this would emphasize the need for careful consideration of the persistent effects that may be associated with such sanctions.

## References

- Baumeister, R. F. (1998) The self. In *The handbook of social psychology*. 4th ed. Edited by D. T. Gilbert, S. T. Fiske, and G. Lindzey, 680–740. New York: Oxford Univ. Press.
- Cooley, C. H. (1902). *Human nature and social order*. New York: Scribner's.
- Cardenas, J. C. (2011). Social Norms and Behavior in the Local Commons as Seen Through the Lens of Field Experiments. *Environmental & Resource Economics*, 48(3), 451-485.
- Gächter, S. & Renner, E. (2010) The effects of (incentivized) belief elicitation in public goods experiments. *Experimental Economics*, 13(3): 364-377.
- Guala, F. (2012). Reciprocity: Weak or strong? What punishment experiments do (and do not) demonstrate. *Behavioral and Brain Sciences*, 35, 1–15.
- Lacetera, N. and Macis, M. (2010) Social image concerns and prosocial behavior: Field evidence from a nonlinear incentive scheme. *Journal of Economic Behavior & Organization*, 76(2): 225-237.
- Heffetz, Ori and Frank, Robert H. (2008) Preferences for Status: Evidence and Economic Implications. In *The Handbook of Social Economics*, Jess Benhabib, Alberto Bisin, Matthew Jackson, eds., Vol. 1A, The Netherlands: North-Holland, pp. 69-91.
- Nyborg, K., Anderies, J. M., Dannenberg, A., Lindahl, T., Schill, C., Schluter, M., Adger, W. N., Arrow, K. J., Barrett, S., Chapin, F. S., Crepin, A. S., Daily, G., Ehrlich, P., Folke, C., Jager, W., Kautsky, N., Levin, S. A., Madsen, O. J., Polasky, S., Scheffer, M., Walker, B., Weber, E. U., Wilen, J., Xepapadeas, A. and de Zeeuw, A. (2016). Social norms as solutions. *Science*, 354: 42-43.
- Romaniuc, R., Farrow, K., Ibanez, L., & Marciano, A. (2016) The Perils of Government Enforcement. *Public Choice*, 166: 161-182.
- Rege, Mari and Kjetil Telle. 2004. "The Impact of Social Approval and Framing on Cooperation in Public Good Situations." *Journal of Public Economics*, 88: 1625-44.
- Heffetz, Ori and Frank, Robert H. (2008) Preferences for Status: Evidence and Economic Implications. In *The Handbook of Social Economics*, Jess Benhabib, Alberto Bisin, Matthew Jackson, eds., Vol. 1A, The Netherlands: North-Holland, pp. 69–91.
- Nyborg, K., Anderies, J. M., Dannenberg, A., Lindahl, T., Schill, C., Schluter, M., Adger, W. N., Arrow, K. J., Barrett, S., Chapin, F. S., Crepin, A. S., Daily, G., Ehrlich, P., Folke, C., Jager, W., Kautsky, N., Levin, S. A., Madsen, O. J., Polasky, S., Scheffer, M., Walker, B., Weber, E. U., Wilen, J., Xepapadeas, A. and de Zeeuw, A. (2016). Social norms as solutions. *Science*, 354: 42-43.
- Romaniuc, R., Farrow, K., Ibanez, L., & Marciano, A. (2016) The Perils of Government Enforcement. *Public Choice*, 166: 161-182.
- Rege, Mari and Kjetil Telle. 2004. "The Impact of Social Approval and Framing on Cooperation in Public Good Situations." *Journal of Public Economics*, 88: 1625-44.