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# Testing deontological warm glow motivation for carbon abatements



### Ragnhild Haugli Braaten\*

Frisch Centre, Gaustadalléen 21, NO-0349 Oslo, Norway

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#### ABSTRACT

Do people contribute to CO<sub>2</sub> abatements even when these contributions are completely crowded out by a third party? This study reports from an experimental test of contributions to carbon abatements when the contributions are completely crowded out by the experimenter. Contributions are determined to decline by 44% compared to a policy in which the contributions are spent directly on carbon abatements. Still, contributions remain at 18% of endowments and are relatively stable over six rounds of the crowding-out policy. These results support previous psychological findings that a deontological warm glow is important for motivating environmentally friendly behavior.

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#### 1. Introduction

Do people contribute to carbon abatement even when their contributions are completely crowded out by a third party? This paper reports from an experimental test of how voluntary emission reductions are affected when the already miniscule effect on the global climate is removed. Participants

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<sup>\*</sup> Present address: Oslo Economics, Dronning Maudsgate 10, NO-0250 Oslo, Norway. Tel.: +47 99 71 44 82; fax: +47 96630090. *E-mail address*: rbr@osloeconomics.no

have the opportunity to donate money to carbon abatement through the EU Emission Trading Scheme market. However, any contribution is crowded out dollar-for-dollar by the experimenter. Participants play in fixed groups of three players and contributions are observed over several rounds. In a final voting round, participants reveal their policy preferences at a group level.

What motivates environmental friendly behavior in the first place? In the case of global warming, the emission reductions that one individual can provide are sufficiently small that he/she has no measurable impact on the climate. Nonetheless, many people spend money and effort to reduce even negligible amounts of CO<sub>2</sub> emissions. Private purchases of carbon offsets and frequent recycling of waste are two field examples of people's willingness to make an environmental effort that has only miniscule impacts.<sup>1</sup> Individuals who exert costly effort to reduce their negative environmental impact are often denoted as green agents (Straughan and Roberts, 1999; Nyborg et al., 2006). Andreoni (1989, 1990) proposes that such contributions to public goods are motivated by impure altruism; people care about the amount of public good, but they also receive a psychological reward from the act of giving itself, denoted as a 'warm glow of giving'. This motivation stands in contrast to 'pure altruism', in which people care only about the benefits of the public good itself.

Psychological studies confirm that intrinsic satisfaction is particularly relevant in motivating environmentally friendly behavior (De Young, 1996, 2000). A warm glow is often interpreted as arising independent of the contribution's consequences (Crumpler and Grossman, 2008; Konow, 2010; Tonin and Vlassopoulos, 2010). However, it seems reasonable that there is some underlying perception that acting environmentally friendly is the right thing to do to induce the warm glow. How do people determine the right thing to do in different environmental contexts? Two opposing moral ideals are relevant in this setting; consequentialism and deontology.

Brekke et al. (2003) propose that people determine the morally right thing to do in a public goods dilemma by answering the following question: "What would be the socially optimal thing to do, if everybody else acted like me?" This definition of morality is consistent with Harsanyi's rule-based utilitarianism (Harsanyi, 1980) and is consequentialistic in a social welfare sense (Nyborg, 2011). It is a quasi-consequentialistic moral ideal that can explain the warm glow from contributions with unobservably small environmental benefits per unit; for example, the buying of CO<sub>2</sub> abatements. I shall refer to this determination of the moral ideal as "consequentialism" because it defines the morality of an action by its consequences, given others' specific behavior. It should not motivate contributions with no marginal effect, as in this experiment when the contributions are completely crowded out by the experimenter.

Conversely, data from environmental surveys suggest that green agents are seldom motivated by direct environmental consequences but are more often motivated by deontological values (Stevens et al., 1991; Spash, 1997). Deontology is defined by an emphasis on given moral principles, independent of the consequences they may generate in specific situations (Greene, 2007). Kant, the leading deontologist, expresses these principles in terms of rights and duties. In environmental morality, deontologists prescribe the environment with inviolable rights and view pollution as morally wrong in any circumstance.<sup>2</sup> However, in regard to CO<sub>2</sub> emissions, every living human is bound to emit some, even just by breathing out. One deontological moral rule might be to emit as little as possible (or to contribute as much as possible to CO<sub>2</sub> abatements). Another related deontological moral rule might be that everyone should emit an equally low amount (or contribute an equal amount of CO<sub>2</sub> abatements). Such a rule is similar to Brekke et al.'s determination of a consequentialistic warm glow motivation, in which everyone should do their equal share to reach the social optimum. The difference is that the consequentialist determination takes the environmental outcome as the starting point, whereas the deontological view only considers an individual's behavior and disregards the environmental effects. In this article, the term "consequentialist" refers to people who are motivated by the environmental

<sup>&</sup>lt;sup>1</sup> Similarly, in a Norwegian survey from 2010, 60% of respondents report restricting their car use for environmental concerns (NSD, 2010).

<sup>&</sup>lt;sup>2</sup> The following statement provides an example of deontological morality: "As much wildlife as possible should be preserved no matter what the costs". Stevens et al. (1991) find that 67% of respondents agree with this statement. Spash (1997) finds that those strongly engaged in the environment are more likely to hold such deontological values compared to others.

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