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How is donation behaviour affected by the donations of others?☆

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Abstract

This paper describes a natural field experiment investigating voluntary contributions to a public good. The setting was an art gallery where admission was free, but donations could be deposited into a transparent box in the foyer. We manipulated the social information available to patrons by altering what was visible in the donation box. In particular, we investigated four treatments: one with primarily a few large denomination bills, one with several small denomination bills, one with a large amount of coinage, and one empty. The social information provided had a significant impact on donation composition, frequency, and value.

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1. Introduction

In 2006, American individuals donated an estimated $222.9 billion to charity (Giving USA, 2007). This magnitude of giving is clearly at odds with classical demand theory where preferences are over *consumption* bundles and exhibit local non-satiation. Various theories of pro-social behaviour have been developed to help to explain charitable donations and voluntary contributions to public goods (Becker, 1974; Margolis, 1982; Sugden, 1984; Andreoni, 1990; Rabin, 1993; Bernheim, 1994; Dufwenberg and Kirchsteiger, 2004). Charitable giving and voluntary contributions to public goods have been studied extensively in lab settings; for surveys see Dawes and Thaler (1988) and Ledyard (1995, Chapter 2). However, recently economists have taken experiments out into the field in an attempt to study human behaviour in a more natural setting (List and Lucking-Reiley, 2002; Frey and Meier, 2004; Shang and Croson, 2005; Heldt, 2005; Soetevent, 2005). See Harrison and List (2004) for a taxonomy of field experiments.

Our experiment took place at an art gallery where admission was free, but donations could be deposited into a transparent box in the foyer. In our experiment, we manipulated social information by changing the initial contents of the donation box. We investigated four treatments, three of which were non-empty. These non-empty treatments varied by composition of the money, but not total value. At one extreme, the "$50 treatment" featured a few large denomination bills. As an intermediate case we included the "$5 treatment" with several small denomination bills.

☆ Formerly under the title "The art of manipulation, or the manipulation of art: a natural field experiment."

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Table 1
The initial contents of the donation box for the non-empty regimes

Regime	Denomination										Lower bound average ($)
	$50	$20	$10	$5	$2	$1	50¢	20¢	10¢	5¢	
$50	1	1	2	1	1	2	2	0	0	0	10.00
$5	0	1	1	13	1	2	1	1	2	2	4.17
50¢	0	1	1	1	3	15	71	36	12	2	0.70

At the other extreme, the "50¢ treatment" featured a large amount of coinage. The exact breakdown of the contents for each treatment can be found in Table 1. We anticipated that our manipulation of the contents would influence the visitors' beliefs concerning both the magnitude and frequency of previous donations. Alternatively, the contents of the donation box might serve as a cognitive anchor, which in turn would influence donation behaviour.

Our study is not the first to investigate the influence of social information on charitable behaviour in the field. However, previous studies have either focused on the propensity to donate *or* the amount donated. For instance, Frey and Meier (2004) and Heldt (2005) study how providing potential donors with information regarding the historical donation frequency influences the propensity to donate. In Frey and Meier, students at the University of Zurich have the option of donating (a fixed amount) to two social funds when they pay their tuition fee. Some students were informed of the historical donation frequency, and this information had a significant impact on their propensity to donate relative to a control group. In Heldt, cross-country skiers in Sweden made a decision of whether or not to contribute (a fixed amount) towards track maintenance. Again, providing information regarding the historical frequency of donation had a significant impact on their propensity to donate.

In an alternative approach, Shang and Croson focus on how providing information concerning donation size influences both donation size and the probability of contributing again the following year. The context of their experiment is an on-air fund drive for a public radio station. They find that donation size is significantly influenced by the provision of the social information. An important qualification is that their study focuses on how social information alters the behaviour of people who had *already* made the decision to donate. Specifically, only the listeners that self-selected themselves by calling the radio station to donate were involved in the experiment.

One common thread among Frey and Meier (2004), Shang and Croson (2005), and Heldt (2005) is that they all provide evidence that is consistent with a behavioural trait known as conditional cooperation. People are conditionally cooperative if their donation behaviour is positively correlated with the average or aggregate donation behaviour of others. Conditional cooperation has been documented in the lab by Fischbacher et al. (2001). Conditional cooperation can be thought of as a motive in of itself or, alternatively, as a consequence of either a preference for fairness/reciprocity (Rabin) or an information asymmetry concerning the quality of the charity (Vesterlund, 2003). Regarding fairness, the contents of the box would influence which of the possible fairness equilibria is selected. For example, the empty box would give the strongest indication of a "bad" fairness equilibrium, and would trigger a negative fairness response. For the case of hidden charity quality, evidence of previous donations could be viewed as a signal of the other donors' beliefs regarding either the quality of the artwork or the efficiency of the process that transforms donations into art exhibitions.

An issue that arises in our study and that is absent in the studies cited above is the potential difference between the actual and the perceived contents of the donation box. Even though the initial total value of the contents of the box was constant across the non-empty treatments, visitors might perceive the values as being different. Tversky and Kahneman (1974) give an example of subjects exhibiting a cognitive bias associated with an incomplete calculation. They considered two groups, one of which was asked to guess the value of $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ and another group of subjects asked to guess the value of $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$. Both groups were given five seconds to make a guess without the aid of a calculator. In both groups, the median guess was far below the actual value (40,320), and the median estimate of the second group (512) was significantly lower than for the first (2250). This result suggests a thought process where people perform the first few steps of the calculation from left to right, and the result of this partial calculation creates an anchor. The anchor is then used as a base from which the subject extrapolates to form their final guess. The adjustment to the anchor is typically insufficient, creating an anchoring effect.