

Motivated Beliefs and Prosociality

Extended Abstract

Gergely Hajdu*
Hajdu_Gergely-Istvan@phd.ceu.edu

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Abstract

This paper asks whether beliefs about others' ability are motivated by prosocial considerations. Focusing on a situation, where the consequences of a decision is dependent on external factors this paper is the first that goes beyond a small scale economic exchange and tests motivated beliefs in a broader context. Using a simple model I highlight the relevance of motivated beliefs in this setting and construct a careful experimental design to test the presence of motivated beliefs. I find evidence that as a result of a taking decision with uncertain externalities - where the externality also depends on others' ability - people report in a way that allows them to think better of themselves and potentially take more. This effect decreases, when there is an actual material cost of belief distortion, but still sizable in magnitude (20% of the standard deviation).

*Central European University

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1 Introduction

A growing literature in experimental economics documents many ways in which individuals use excuses to act selfishly in social situations. To name just a few, subjects behave more selfishly if they can avoid to learn how their decisions affect others (Dana et al. (2007), Bartling et al. (2014), Grossman (2014)), develop self-serving biases (Konow (2000), Haisley and Weber (2010), Di Tella et al. (2015)), or rely on the possibility that their decision doesn't influence the outcome (Dana et al. (2007), Andreoni and Bernheim (2009), Falk and Szech (2013b)). Presumably, a large part of the reason that individuals use excuses in this situations is the motive to maintain positive beliefs about themselves while at the same time taking money. In all previous work, however, selfishness is investigated in an extremely small-scale interaction, where one person decides whether to sacrifice for one other purpose or cause . Yet many or most of the social decisions we make in real life take place in a broader context, where the actions of other individuals crucially influence outcomes. For instance, using plastic boxes, or plastic cups can make life easier, but imposes negative externality on the environment. As people not only care about themselves the presence of negative externality does influence behavior. However, to what extent this negative externality is mitigated is usually uncertain and dependent on external factors. One could argue that if the problem from using disposable plastic is that it ends up in the Oceans then the solution is simple and scientists will figure out the way to take it out. In this example people care about the environment and would feel better if the uncertainty in the consequences of their choices would be mitigated and the uncertainty in the extent of the negative externality would be resolved in their favor. Whether such prosocial preferences leads to biased beliefs is the focus of this study.

This paper differentiates itself from existing literature by documenting motivated beliefs for prosociality concerns in a shared responsibility situation. By showing evidence of belief distortion in a setting with uncertain consequences it also fills the void of how beliefs are formed, when consequences are unknown, and takes a step towards understanding complex decision making environments, where the final outcome is also dependent the behavior of others. As an example, although it does not precisely fit the experimental setting, my results are potentially relevant for another class of common situations: where people decide how much to give to a social cause when others might also be contributing. How much one gives to a charity, for instance, certainly depends on what she thinks how much others give. If she is really concerned with the final amount the charity receives she might be motivated to believe that others are giving enough, hence, her not giving is not much of a difference. Of course, there might be other consideration as well, such as evaluating one's action not by how much difference it makes to the final outcome, but by comparing it to others' behavior. This kind of peer-effect might be relevant in a charitable giving setting, however, the nature of motivated belief for prosocial consideration is the same.

In Section 2, I use a simple model to highlight the relevance of motivated beliefs in this setting

and set the stage for my experimental design. I generalize the standard Charness and Rabin (2002) other-regarding preference model to non-linear utility with uncertain consequences and motivated beliefs. Each decisionmaker (called Choice-maker from now on) is paired with a counterpart (called Passive Participant from now on). The Choice-maker has to choose an amount $a \in [0, a_{max}]$ for herself that she receives for sure. However, whether this amount a is taken from the Passive Participant, or not depends on another player's ability (called the Riddle-taker). The Riddle-taker is working on a puzzle and incentivised to succeed. In the main treatment (called Friend treatment) the chosen amount is only taken from the Passive Participant if the Riddle-taker can not solve the puzzle, but not otherwise. Hence, what the Choice-maker expects the Passive Participant receives given a chosen amount a depends on Choice-maker's subjective belief about the likelihood that the Riddle-taker succeeds. By providing the same endowment to the Choice-maker and the Passive Participant the Choice-maker will always be ahead in payoffs, so behindness aversion does not play a role in this setting. Choice-maker's preference over the actions and beliefs can be represented as

$$U_{Choice-maker}(a, p) = \sigma u_{Choice-maker} + (1 - \sigma)E_p(u_{PP}) - \eta(\sigma)C(p - p_0), \quad (1)$$

Where $E_p(u_{PP}) = pu(e) + (1 - p)u(e - a)$, σ is the inverse measure of prosociality, p_0 is her prior belief about the likelihood that the Riddle-taker succeeds and $\eta(\sigma)C(p - p_0)$ is a convex cost of belief distortion that may differ for people with different prosociality.

In such a setting, given decisionmaker's choice, there is uncertainty only in the counterpart's payoff. What the decisionmaker expects the counterpart's payoff is going to be depends on the decisionmaker's subjective belief about the uncertainty. Given the usual weak functional form assumptions, if the Choice-maker puts more weight on her utility from the payoffs than on the Passive Participant's payoff her optimal chosen amount is positive (Proposition 1). By inflating beliefs about the preferred outcome – that the Riddle-taker succeed – the Choice-maker can inflate her expected overall utility on the expense of a cognitive cost. If the initial belief distortion has a sufficiently low cognitive cost belief distortion is optimal (Proposition 2) and results in Choice-makers having more optimistic beliefs than their prior p_0 . Once, people exhibit belief distortion the cost of choosing a higher amount is lower. Hence, people are choosing a higher amount than they would with an unchanged prior (Proposition 3). Intuitively, if people can believe that their selfish actions have no negative consequences the best they can do is to take as much as possible. If the cost of the belief distortion comes from Choice-makers

In Section 3, I describe an experimental design to test these predictions. Anticipating a heterogeneous treatment effect according to prosociality the design includes a pre-survey stage (described in Section 4). This stage is played 2 weeks prior to the main stage to make sure that players behavior on the main stage is not affected by the pre-survey, hence, taking care of the conscience accounting problem. From this choice data I categorize people according to prosociality using simple rules and

repeat the same exercise using structural estimation of prosociality as a robustness check. I use this categorization to test for heterogenous treatment effects.

The main stage is designed in a way that in one treatment people are motivated to inflate, while in the other treatment people are motivated to deflate their beliefs. This allows for a natural counterfactual and results in a higher treatment variation as opposed to comparing inflated/deflated beliefs to unbiased beliefs. In the main stage participants are assigned to groups of three. Within each group, the player, who is assigned the role of the Choice-maker has to choose an amount for herself that she receives for sure. Whether this amount is taken from the counterpart, who are assigned the role of the Passive Participant, depends on the third player in the group – called the Riddle-taker. The Riddle-taker’s only task is to try to solve a specific puzzle within 10 minutes. In case of success she earns a fix sum and this is common knowledge. In the Friend treatment the chosen amount is NOT TAKEN from the Passive Participant, hence the negative externality is mitigated, if the Riddle-taker is able to solve the puzzle. In the Enemy treatment the chosen amount IS TAKEN from the Passive Participant if the Riddle-taker is able to solve the puzzle. The next stage is an incentivised belief elicitation for Choice-makers about the success rate of the Riddle-takers on the experiment. The information structure on the main stage is designed in a way to rule out curse of knowledge interpretations of the results – that Choice-makers would project their private information to the Riddle-takers – and to make sure that in the absence of motivated beliefs Choice-makers have no reasons to have different success rate guesses across treatments. Specifically, the Riddle-taker doesn’t know in which treatment she is in, but knows that she gets randomly assigned to one at the end of her stage. This information is common knowledge.

Section 5 presents the results. I find that as a consequence of the taking decision with uncertain externalities - where the externality is also dependent on others’ ability - less prosocial types distort their beliefs about others’ ability in a way that it allows them to think better of themselves and potentially take more. This effect is above 10 percentage point, which is 50% of the standard deviation. This is sizable compared to other belief distortion results and not very sensitive to the method of the prosociality estimation.

To the best of my knowledge, this is the first paper that goes beyond a small scale economic exchange and tests motivated beliefs in a broader context. The results reinforce the basic intuition that the presence of motivated beliefs is not uniform and provide evidence that less prosocial people distort more. It also highlights the relevance of belief distortion when responsibilities are shared of which, despite its significance, we know still very little at this point.

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