



Taking punishment into your own hands: An experiment [☆]



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ABSTRACT

In a punishment experiment, we separate the demand for punishment in general from the demand to conduct punishment personally. Subjects experience an unfair split of their earnings from a real effort task and have to decide on the punishment of the person who determines the distribution. First, it is established whether the allocator's payoff is reduced and, afterwards, subjects take part in a second price auction for the right to (physically) carry out the act of payoff reduction themselves. Subjects bid positive amounts and are happier if they get to punish personally.

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If the person who had done us some great injury, who had murdered our father or our brother, for example, should soon afterwards die of a fever, or even be brought to the scaffold upon account of some other crime, though it might sooth our hatred, it would not fully gratify our resentment. Resentment would prompt us to desire, not only that he should be punished, but that he should be punished by our means, and upon account of that particular injury which he had done to us Adam Smith (1759, page 113).

1. Introduction

The desire for revenge, to punish those who did wrong upon oneself, is a strong motivation for humans. From ancient Greek dramas to modern movies, it is ubiquitous in storylines. It has also been the focus of extensive research in economics, both in the form of experiments which find that, indeed, subjects are willing to forgo monetary gains to exert punishment, and in the form of theoretical models that seek to explain such behavior. However, both the quote by Adam Smith above and

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many prominent fictional works¹ feature a very specific form of punishment: According to Adam Smith, humans not only care about punishment being inflicted on the perpetrator of a crime against them, but they also value carrying out that punishment themselves, in person. It is this, personal, characteristic of punishment that we try to isolate in the laboratory. Our experiment is designed to exclude other possible reasons why one would be willing to give up money to punish. In particular, subjects do not have to spend money to assure punishment is carried out, they only spend money to assure it is carried out by them personally.

In the experiment we first establish a situation where punishment is possible: One group of subjects (type *A*) take part in a real effort task to create an endowment, which is then distributed by the non-working subjects of type *B*. Subjects *B* can either leave the complete endowment to *A*, or take away 80% of it. After learning the distribution chosen by *B*, subjects *A* are allowed to punish *B* by destroying a part of the money that *B* allocated to herself.² We use two separate decisions to split the demand for personal punishment from the demand for punishment in general. In a first question, subjects *A* get to decide whether *B* will be punished. Then, knowing that *B* will be punished for sure, we ask subjects *A* whether they want to be the one to personally and physically execute the punishment. We do this by means of a second price auction where we auction off the right to be the one to execute the punishment. Since the auction has a winner in any case, punishment is always ensured. The bids in the auction elicit subject *A*'s willingness to pay for personal punishment.

More than a third of our subjects bid positive amounts in the personal punishment auction. Bidding for personal punishment is higher by subjects who also wanted any, potentially non-personal, punishment in the first question. We interpret bidding in the auction as a desire, among our subjects, to actively punish, as opposed to having the perpetrators payout reduced by a third party.

This is in line with models which include actions, along with payoffs, in the utility function, as in Andreoni (1990). He examines the private provision of a public good and models the utility of individuals as a function not only of the amount of the public good but also of the own gift to the public good. This individual donation produces what Andreoni calls a “warm glow”, utility derived from the act of giving. In a fMRI experiment Harbaugh, Mayr, and Burghart (2007) identify this joy of giving within the brain.

In the same vein as joy of giving, there is also a joy of punishing: Direct neuroeconomic evidence that subjects “like” to punish was found by de Quervain et al. (2004), who use PET recordings of brain activation to investigate the mechanisms in the brain involved in punishment. Subjects played a trust game where cooperating players could punish defecting partners. In the punishment condition activation of the dorsal striatum was found, which is well known for its reward processing properties. This could either be due to the fact that the defecting partner lost money or it could be pleasure derived from the act of punishing. This is what we disentangle in our experiment as the decision to punish is separated from the decision to punish personally.

Further evidence comes from a measurement of affective happiness, which we conduct before and after the experiment: Subjects who win the personal punishment auction and thus have to pay the second highest bid, but get to be the ones to execute the punishment, become happier. Finally, we find mixed results with regards to the identity of the person punished.

The next section introduces the design of the experiment and related literature. Section 3 presents our hypotheses and Section 4 the results. In Section 5 we discuss the results.

2. Experiment

To test the demand for personal punishment, we use three related experimental designs (see Table 1), 1A (one auction), 2A (two auctions) and 2A2G (two auctions, two groups). 1A tests whether demand for personal punishment exists using a single auction. 2A conducts a within subject comparison between bids for personal punishment and bids in an not punishment related dummy auction. 2A2G checks whether subjects demand to personally punish even if the person being punished acted against the interests of a third party.³ We start by describing 1A.

2.1. Design 1A

Subjects were matched in groups of four; each group consists of three subjects *A* and one subject *B*. The experiment was anonymous, so subjects never learned about the identity of the other subjects they were matched with. Instructions for the experiment, which fully described the experiment for both type *A* and type *B*, were handed to subjects at the start of the experiment. After reading the instructions, subjects had to answer a series of detailed questions in order to make sure that

¹ To use two well known movies as examples: In *Pulp Fiction*, after being rescued from a rapist by Butch, Marsellus tells Butch, who is about to kill the rapist, to move aside, so he can shoot the rapist himself. Similarly, in *Dogville*, Grace, after ordering her father's men to torch the village which enslaved her, kills the man who hurt her most personally, telling her father: “Some things, you have to do yourself”.

² For ease of exposition, let *A* be male and *B* be female.

³ See the Online-Appendix for translations of all instruction material: <http://www.uni-heidelberg.de/md/awi/professuren/with2/duersch-mueller-appendix.zip>.

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