Experimental test of the effects of punishment probability and size on the decision to take a bribe

Štěpán Bahník[1] & Marek Vranka[2]

Faculty of Business Administration, Prague University of Economics and Business

[1] bahniks@seznam.cz, @bahniks, www.bahniks.com

[2] vranka.marek@gmail.com, @mVranka, www.pless.cz/en

INTRODUCTION

- Punishment is one of the main methods for preventing corruption.
- Studies on the effect of size and probability of punishment on bribe-taking have not yielded conclusive results.
- We introduce a punishment by a fine or termination of the task, both with varying probabilities, in a laboratory task modeling the decision to take a bribe.[1]

METHODS

Participants

We recruited 512 participants for the study (383 students; 333 female; predominantly young, Mdn_{age} = 23, IQR_{age} = 6).

Procedure

Participants sorted objects running on a computer screen according to their color by pressing one of three keys, each of which was randomly associated each trial with a single color and shape. If a key response led to an assignment to a wrong color, a charity lost 200 points our of the initially allotted 2000 (corresponding to ~9 USD). The loss simulated negative societal effects of not performing given work according to the given rule. Participants got a fixed reward of 3 points for each sorted object, which represented the salary given to a worker for performing their job. On some trials, participants were offered a "bribe" varying in size from 40 to 190 points for sorting the object according to shape instead of color (Figure 1). Each participant went through 200 trials of the task.

After the task, participants filled in the HEXACO questionnaire[2] and were asked about their perception of the task.

Design

Participants were randomly divided into one of nine experimental groups, which differed in the probability (1%, 5%, and 25%) and size (termination of the task, loss of 40 or 400 points) of punishment for taking a bribe, or to a control group without punishment.

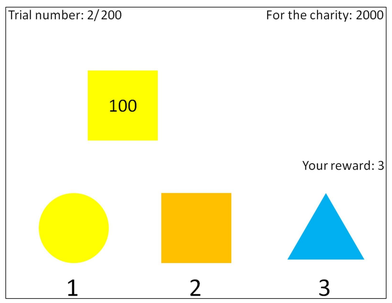

Figure 1. An illustration of a computer screen seen by a participant.

RESULTS

Task perception: Presence of punishment led participants to perceive taking the bribe more negatively, $t(510) = 2.11$, $p = .035$, $b = 0.21$, 95% CI [0.01, 0.40].

Effect of punishment: Participants in most experimental conditions were less likely to take a bribe than in the control condition, but only the 5% 400-fine condition significantly differed from the control condition (Figure 2).

Bribe size and punishment: The interaction of bribe size with punishment, $t(471.3) = -2.30$, $p = .022$, $b = -0.114$, 95% CI [-0.212, -0.017], showed that the effect of punishment was present only for high bribes, $t(488.2) = -2.25$, $p = .025$, $b = -0.099$, 95% CI [-0.185, -0.013], and there was no effect for low bribes, $t(484.8) = -0.17$, $p = .865$, $b = -0.007$, 95% CI [-0.082, 0.069] (Figure 2 and 3).

Punishment size and probability: Participants were less likely to take a bribe with increasing size of punishment, $t(299.3) = -2.03$, $p = .044$, $b = -0.044$, 95% CI [- 0.086, - 0.001], as well as with with increasing probability of punishment, $t(300.1) = -2.20$, $p = .029$, $b = -0.059$, 95% CI [-0.111, -0.006].

Personality: Participants higher in honesty-humility, $t(486.4) = -6.68$, $p < .001$, $b = -0.076$, 95% CI [-0.098, -0.053], and emotionality, $t(492.7) = -4.24$, $p < .001$, $b = -0.050$, 95% CI [- 0.073, -0.027], were less likely to take bribes. While the association with emotionality was mostly driven by a decreased probability of taking a bribe in the presence of punishment, $t(478.1) = -1.96$, $p = .051$, $b = -0.073$, 95% CI [-0.146, 0.000], the association with honesty-humility was less pronounced in the presence of punishment, $t(475.7) = 1.96$, $p = .050$, $b = 0.063$, 95% CI [0.000, 0.126].

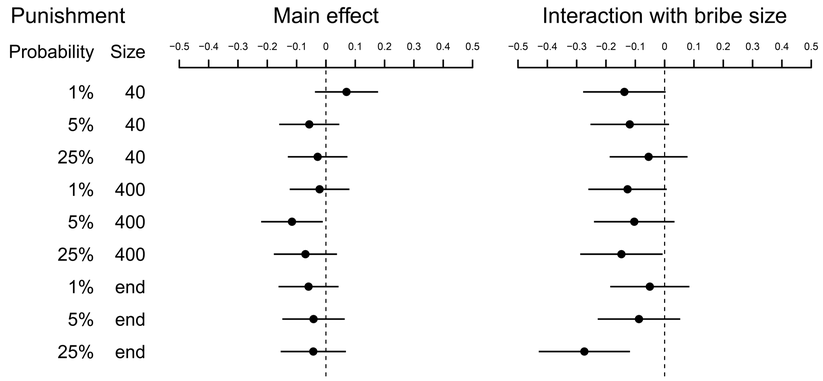

Figure 2. The effect of punishment on the probability of taking a bribe.

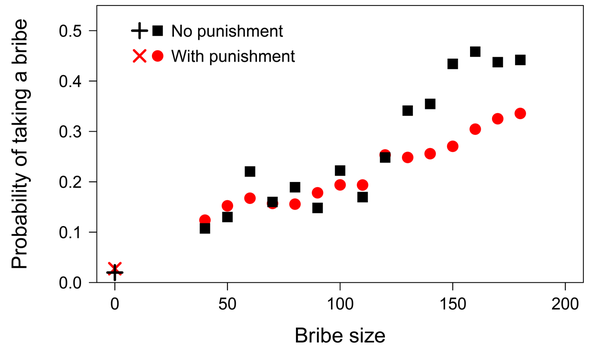

Figure 3. The effect of bribe size on the probability of taking a bribe.

SUMMARY

- Punishment decreased the probability of taking higher bribes.
- The effect of punishment was larger for participants high in emotionality and for participants low in honesty-humility.
- Participants took fewer bribes when the fine was larger and more probable.
- While punishment may deter dishonest behavior, personality should be taken into account when devising an effective deterrence policy.

REFERENCES

[1] Vranka, M. A., & Bahník, Š. (2018). Bureaucracy game: A new computer task for the experimental study of corruption. *Frontiers in Psychology, 9*:1511. doi: 10.3389/fpsyg.2018.01511

[2] Ashton, M. C., & Lee, K. (2009). The HEXACO–60: A short measure of the major dimensions of personality. *Journal of Personality Assessment, 91*(4), 340-345.

The study was supported by GAČR Project No. 19-10781S.