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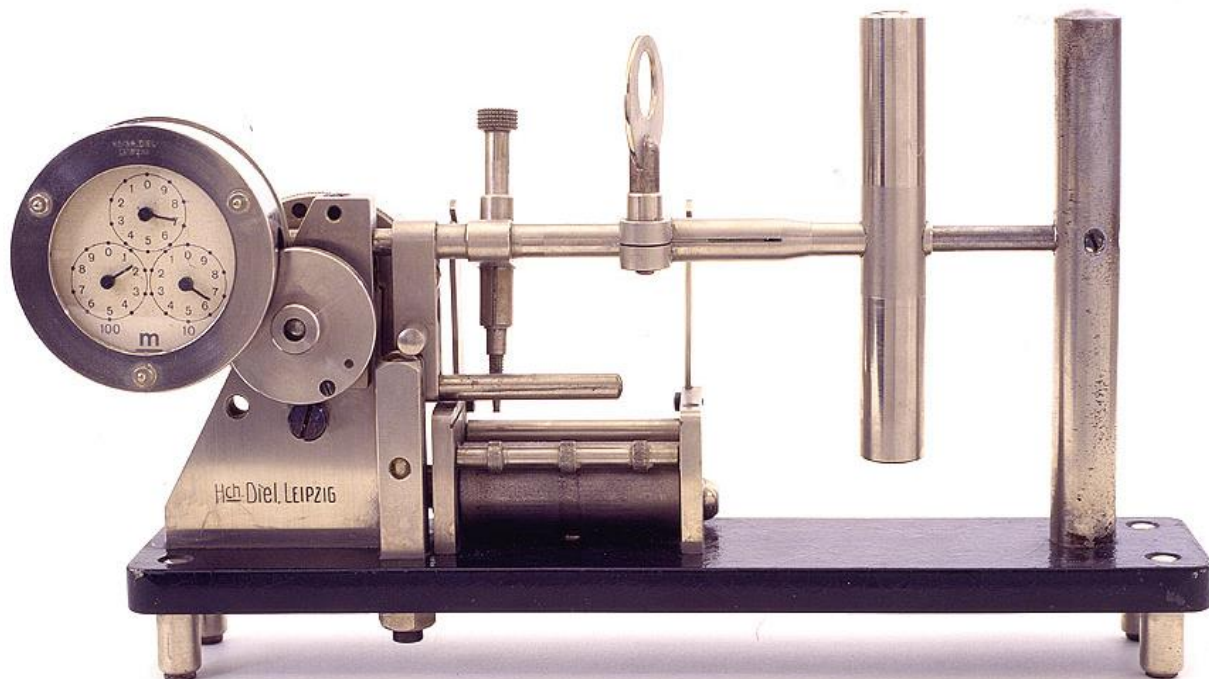


# EMPIRICAL STUDIES IN PSYCHOLOGY

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# Trolley problem: Psychopathy or virtue?

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## Abstract

In Trolley problem (TP) one must choose between sacrificing one person to save many. The TP is often used as a task in moral psychology research, but recent findings showed that TP judgements reflect subclinical psychopathy rather than a genuine utilitarian perspective. We examined variations of the TP in relation to psychopathy and voluntarism. 68 college students (75% females) rated their willingness to do volunteer work, impression management (IM), and psychopathy. A month later, participants again completed the IM scale and made the TP judgements for scenarios in which: (A) They must push one person in front of the trolley to save five people. (B) They are the one being pushed. (C) They are one of the people being saved by the push. They also rated: (1) approvals of someone being pushed, (2) morality of the actions, (3) levels of emotional disturbance, and (4) how much were they able to imagine themselves in the situations. The TP assessments and IM were uncorrelated. Emotional disturbance assessments had low/moderate negative correlations with psychopathy, and two positive correlations with voluntarism. The psychopathy showed a general low positive correlational trend with the pushing approvals and moral endorsements of the scenarios. Thus, our results confirm that TP judgements share a proportion of variance with psychopathy and are not valid measures of moral virtue.

**Keywords:** trolley problem, utilitarian morality, ethics, virtue, psychopathy

## Introduction

Two of the most influential philosophical concepts adopted in recent moral psychology research are Deontology and Utilitarianism (Bartels & Pizarro, 2011; Kahane, Everett, Earp, Farias, & Savulescu, 2015). Utilitarianism views morality as 'choosing the greater good'. Deontology assumes that morality is not dependent upon consequences, but rather some prior normative rules. Although much more complex Deontological systems exist (e.g., Molyneux, 2018), moral psychology research adopts a simplistic view of Deontology as mere rejections of Utilitarian views.

Specifically, Utilitarian morality is often studied using so called Trolley problem/dilemma, a classical thought experiment in which one must decide if they will sacrifice

one person to save many, that would otherwise be killed by a trolley (Bartels & Pizarro, 2011; Greene et al., 2009; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Kahane et al., 2015). When individuals endorse 'sacrificing one for the many', they are described as making Utilitarian judgement, and when they reject it, they are assumed to be making Deontological judgements (Kahane et al., 2015).

However, recent research showed that judgements from such 'sacrificial dilemmas' correlate with psychopathy and other 'dark' personality traits, endorsements of ethical transgressions, etc. (Bartels & Pizarro, 2011; Kahane et al., 2015), with no correlations with 'morally virtuous' tendencies, such as willingness to self-sacrifice, to assist distant people in need, etc. (Kahane et al., 2015). This brings into question the appropriateness of the Trolley problem and similar tasks as measures of a 'genuine' Utilitarian perspective. To explore this issue, we constructed several variations of the Trolley problem in which participants were asked to put themselves in different hypothetical roles. We were interested in establishing if there are any variations of the Trolley problem (e.g., doing a push, versus being sacrificed or saved by it) and its specific aspects (i.e., judgements/endorsements of making a sacrifice and its morality, etc.) that do not correlate with the measure of psychopathy, but do correlate with virtuous behaviors and attitudes (such as voluntarism). There are two main variations of the Trolley problem (Greene et al., 2009): the 'switch' dilemma (e.g., five people can be saved by diverting the trolley onto a side-track via a switch, where it will kill one person) and the 'footbridge' dilemma (e.g., five people can be saved by pushing someone off a footbridge, which will kill that person, but will stop the trolley, thus saving others). Fewer people tend to endorse the sacrifice in the 'footbridge' Trolley dilemma, likely due to higher emotional disturbance caused by this scenario (Greene et al., 2001; Greene et al., 2009). That is the reason why we opted to focus on this version of the dilemma, as arguably more sensitive to 'psychopathy influences'.

## Method

### Sample, procedure, and measures

68 college students (75% females; mean age: 19.82 years) first rated their willingness to do volunteer work and completed impression management (IM; refers to the overly positive self-presentation, mainly directed at others; Subotić, Dimitrijević, & Radetić-Lovrić, 2016) and (subclinical) psychopathy scales, as parts of larger, multi-purpose data gathering effort.

Willingness to do volunteer work was measured by several yes-no questions (see Table 1 in the Results), related to the intent to invest personal time and effort to help others in need. We also included a series of questions about actual volunteer and charity work, but those variables were dropped due to very low observed frequencies.

The IM was measured by a subscale ( $\omega = .75$ ) of the short BIDER-6 questionnaire (BCS adaptation; Subotić et al., 2016).

Psychopathy was measured by a subscale ( $\omega = .82$ ) of the Short Dark Triad questionnaire (SD3; Jones & Paulhus, 2014).

A month later, participants again completed the IM scale ( $\omega = .81$ ) and made the Trolley problem assessments. Psychopathy and volunteerism were separated from the Trolley assessments to make the research problem less obvious. Answers from two phases were matched using ID codes created by the participants themselves.

Participants made Trolley problem assessments for scenarios in which: (A) They must push one person in front of the trolley to save five people. (B) They are the one being pushed to save five people. (C) They are one of the people being saved because somebody else was pushed to death. For every trolley scenario, participants also assessed: (1) an approval/justification of someone being pushed (yes-no), (2) an assessment of morality of the action (10-point scale), (3) a level of emotional disturbance caused by the scenario (10-point scale), and (4) a level in which participants were able to imagine themselves in the situation (10-point scale). Option (3) was included due to previously established relevance of emotional disturbance for the ‘footbridge’ Trolley dilemma (Greene et al., 2001; Greene et al., 2009). Option (4) was included to control for so called ‘unconscious realism’ (Greene et al., 2009).

## Results

Due to substantial intercorrelations between voluntarism assessments, they were aggregated into a single (as suggested by all common procedures; Subotić, 2013) principal component (PC), as shown in Table 1.

Table 1: Voluntarism PC (57% variance).

Willingness to...	$\Lambda$
... volunteer in an orphanage.	.82
... volunteer in a public kitchen.	.77
... participate in a humanitarian action aimed at helping sick kids.	.74
... travel to refugee camps and provide help.	.69

Volunteerism PC had moderate negative correlation with the psychopathy score ( $r = -.35$ ,  $p = .004$ ) and was uncorrelated with the endorsements (push approvals) and morality assessments of all three scenarios. There were, however, significant small positive correlations with 2/3 assessments of emotional disturbance (A3:  $r = .24$ ,  $p = .048$ ; B3:  $r = .18$ ,  $p = .153$ ; C3:  $r = .24$ ,  $p = .046$ ).

The psychopathy showed a positive (albeit not always significant) correlational trend of small intensity with the endorsements and moral assessments for the scenarios (A) (A1:  $r = .27$ ,  $p = .025$ ; A2:  $r = .15$ ,  $p = .207$ ) and (C) (C1:  $r = .23$ ,  $p = .056$ , C2:  $r = .33$ ,  $p = .006$ ), and negative trend of low to moderate intensity with the levels of emotional disturbance in all three scenarios (A3:  $r = -.32$ ,  $p = .008$ ; B3:  $r = -.27$ ,  $p = .027$ ; C3:  $r = -.33$ ,  $p = .005$ ).

The test or retest IM levels did not correlate with any of the Trolley assessments, but they showed small to moderate positive association with the Volunteerism PC ( $IM_{t1}$ :  $r = .22$ ,  $p = .068$ ;  $IM_{t1}$ :  $r = .34$ ,  $p = .005$ ) and moderate negative association with psychopathy ( $IM_{t1}$ :  $r = -.35$ ,  $p = .004$ ;  $IM_{t1}$ :  $r = -.35$ ,  $p = .003$ ). Assessed ability to imagine oneself in the Trolley scenarios did not correlate with any other variables and assessments.

## Discussion

Regardless of the Trolley problem variation, our results suggest that moral endorsements of such dilemmas do not reflect aspects of moral virtue, but they may reflect (subclinical) psychopathy.

Obtained correlations with psychopathy are not strong, but they do indicate that higher psychopathy implies higher likelihood for approving of someone being pushed into death to save others and for viewing such actions as moral. The only Trolley scenario unrelated to psychopathy is the one in which the participant is being pushed to save others, but that scenario, like the other two, is also unrelated to moral virtue. Note that moral virtue assessments here are only represented by an intent for volunteerism, which may be ‘narrow’ and ‘insincere’ (i.e., a mere impression management) measure, but intent is arguably a necessary precursor for morally virtuous behavior.

In conclusion, our results confirm that Trolley problem judgements/endorsements share some proportion of variance with psychopathy and that they are not valid measures of moral virtue (Bartels & Pizarro, 2011; Kahane et al., 2015). They should be avoided as tasks in moral psychology research.

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