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DOES ECONOMIC EDUCATION SPOIL STUDENTS' MORALITY? ECONOMISTS AND THE TROLLEY PROBLEM

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ABSTRACT. Economic education is frequently blamed for negatively impacting students' morality, leading to the so-called indoctrination hypothesis. This view is supported by abundant empirical research. Nevertheless, certain studies do not confirm and even gainsay the existence of such a destructive relationship. This article aims to contribute to the discussion by analysing ethical decisions made by the less and more advanced students of Economics when confronted with moral dilemmas based on the Trolley Problem. Additionally, to address the self-selection hypothesis, we compare the choices made by the first-year students of Economics with those of their Sociology counterparts. Assuming that economics teaching affects students' moral choices and considering the fundamental role of utility maximization in both orthodox economics and standard economic education, one might expect a proportion of "utilitarian" ethical judgments to increase with the advancement of economic studies. Surprisingly, our research does not confirm such an association. Working with a sample of Polish undergraduate students of Economics (N=408) and Sociology (N=123) during the initial three weeks of the academic years 2020/2021 and 2022/2023, we observed that the choices of more advanced economists-to-be are more "deontological" (grounded in norms) than "utilitarian" (grounded in benefits). Therefore, we argue that economic education does not have the power to shake students' ethical choices considerably and transform them into unscrupulous calculating machines. However, certain support was found for the self-selection hypothesis, as the first-year students enrolled in the Economics programme were slightly more prone to "utilitarian" choices than the first-year sociologists.

Keywords: economic teaching, ethical judgement, trolley problem, decision-making, Poland

Introduction

Economic and business education is frequently accused of spoiling students' moral attitudes (Boylan, 2015; Spiegelman, 2020). Some empirical studies strengthen such a narrative (see, for instance, Frank et al., 1993; Wang et al., 2011; Haucap & Müller, 2014; Racko et al., 2017). Not surprisingly, they commonly support criticism of economics teaching and the urgent need for its reform (Etzioni, 2015; Raworth, 2017). On the other hand, developmental psychologists cast serious doubts on the very possibility of significantly modifying fundamental ethical values ingrained in childhood, of moulding an adult mind (Erikson, 1950; see also Davis & Welton, 1991). This stance finds support in another wave of empirical research, which does not confirm and even contradicts the existence of the destructive relationship between economics teaching and students' morality (e.g., Neubaum et al., 2009; Krick et al., 2016; Hummel et al., 2018; Dzionaek-Kozłowska & Rehman, 2019; Dzionaek-Kozłowska & Neneman, 2021; 2022). Apparently, the question of the impact of economic and business education on students' ethical framework has not yet been completely resolved.

One of the problems leading to the conflicting empirical evidence seems to be the method employed to collect it. Researchers drawing conclusions about students' morals from game-theory-based economic experiments often provide support for the indoctrination hypothesis. In contrast, studies based on value surveys do so less frequently. As Yezer et al. (1996) pointed out, the former methods constitute a part of Economics curricula and are suitable for examining learning effects rather than students' indoctrination by economics teaching, as some economists-to-be are able to detect the game theory patterns in the presented narratives, and regard them as nothing more than just a game. Value surveys, composed of statements ranked by the respondents in order of importance, offer a better picture of students' ethical frameworks, especially as neither rivalry nor optimalization is included. However, the problem of the validity of determining students' morality from their self-reported declarations remains.

The present study aims to address both issues by implementing a different approach. To contribute to the discussion on economics education's influence on students' morality, our research method involves confronting them with a set of ethical dilemmas that refer to fundamental moral principles. These dilemmas are chosen in a way that allows us to hypothesize about the potential influence of economic education on their choices. The dilemmas are based on the Trolley Problem, a famous thought experiment in which the respondent has to choose between sacrificing one person to save five people or not intervening, which would cause the death of five people. The first course of action is seen as dictated by the consequentialist/utilitarian moral judgements based on the principle of maximizing utility: saving five people at the "cost" of one life seems to contribute to the common good more than acting otherwise (at least as far as these people are seen as equal individuals). This active attitude is also linked with a conscious, reasoned approach. In turn, the second option (staying passive) is perceived as an emotions-driven response rooted in deontological ethics. By acting, we would kill an innocent person, which would violate the Do Not Kill moral principle, and as such, this deed is unacceptable under any circumstances (Kant, 1785/2003; see Lanteri et al., 2008; Greene, 2007; 2008; Amit & Greene, 2012; Greene & Young, 2020).

Considering the fundamental role of utility maximization in orthodox (neoclassical) economics, and the prominence of the unemotional, cold-hearted attitude commonly perceived as a main characteristic of the *Homo oeconomicus* model of decision-making, one can expect the share of individuals' "utilitarian" judgements to grow with the advancement of their economic studies. To test this hypothesis, we presented a set of moral dilemmas to

beginners and more advanced undergraduates of Economics (N=408), and scrutinized the differences between their decisions. One of the controls employed in the present study was previous economic education, which allowed us to distinguish the subsample of first-year students whose decisions might have been altered by their prior encounters with economics teaching. Additionally, we extended our research to include a sample of first-year students of Sociology (N=123), to juxtapose their responses with the replies of first-year Economics students. All responses were collected in the first week of the academic year to let us test the self-selection hypothesis, i.e., to investigate if differences between people who chose Economics as their major and those who picked other curricula are detectable at the very beginning of their academic education.

Contrary to our expectations, the present research does not reveal an association between economic education and the shift in moral choices towards the “utilitarian” attitude. Indeed, the second- and third-year students of Economics more frequently took the “deontological” approach than their less advanced first-year counterparts. However, we find some support for the self-selection hypothesis, as the first-year students enrolled in the Economics programme were slightly more inclined to make “utilitarian” choices than the first-year sociologists.

The shift towards the “deontological” approach cannot be acknowledged as a result of exposure to economic theories based on “the machinery of Max U”, as McCloskey (2002, 57) aptly called the utility maximization principle. Therefore, we claim that the influence of economic education does not reach the level of students’ moral foundations. Furthermore, we suppose that this opposite-to-what-could-have-been-anticipated result stems from some first-year students’ attempts to report a decision which might have been expected from them as future economists.

The line of reasoning developed in this paper is as follows: first, the outcomes of previous studies examining the impact of economic education on students’ moral choices and attitudes are reported. Second, the Trolley Problem, used as a point of departure to construct our research instrument, is presented. The research design and the sample are described in the paper’s third section, followed by the presentation and discussion of the results of our findings in the fourth and fifth parts. The final section summarizes and concludes.

1. Literature review

1.1. Debates over the influence of economic education on students’ ethical attitudes

The discussion on the potential negative side-effects of economic education was initiated as early as the last quarter of the 19th century when the first undergraduate programmes in economics were established (see Marshall, 1920/1890, I.I.10, §3; Stigler, 1959). However, a new, empirical turn in this debate was triggered by Marwell and Ames (1981), who conducted a series of experiments on the choice between contributing to a public good and free-riding. They reported that all but one group of respondents contributed significant amounts to the common fund. The exceptional group was a subsample of graduate students of economics who admitted to donating approximately 30 percentage points fewer tokens to this fund than the others did. The result was interpreted as a clear sign of economic students’ limited willingness to cooperate and their tendency to free-ride.

Marwell and Ames’ article led to a wave of game-theory-based laboratory experiments warning about many additional differences between economists and non-economists. The researchers using the Dictator game found economists to be less generous (Wang et al., 2011; Gerlach, 2017; Kaiser et al., 2018), while the results of the Ultimatum game showed that

economists were more egoistic (Kahneman et al., 1986; Carter & Irons, 1991). The experiments implementing the Prisoner's Dilemma and other non-cooperative games confirmed Marwell and Ames' (1981) earlier finding that economists are less cooperative (Frank et al., 1993; Seguíno et al., 1996; Cadsby & Maynes, 1998; Lanteri & Rizzello, 2014; Ahmed, 2008); whereas the Trust Games demonstrated that they are less trusting and less trustworthy than other students (Dasgupta & Menon, 2011; Haucap & Müller, 2014), and more prone to lying (López-Pérez & Spiegelman, 2019).

It is not surprising, therefore, that after examining several papers on the moral effects of economics teaching, Etzioni (2015, 288) went as far as to state that “economics students are more likely to exhibit a range of ‘debased’ moral behaviour and attitudes”. His statement was echoed in Boylan's (2015, 234) words that the content of mainstream economics teaching “can create a morally corrupting paradigm” that is harmful not only to students of economics, but also to all those who seek to improve their knowledge of how economies work by reading economics papers and textbooks. Standard economic education was also blamed for freeing students from “any sense of moral responsibility” (Ghoshal, 2005, 76) and promoting an antisocial attitude (Etzioni, 2015; see also: Gapper, 2005; Kirchgässner, 2005; Raworth, 2017; Klimczak, 2018).

Why was economics found to be so dangerous to students' morality? The argument frequently used to answer this question refers to the content of the orthodox economic theory and the fundamental role of the *Homo oeconomicus* (the *Economic Man*) model in neoclassical economics. This model of decision-making depicts economic agents as rational utility maximizers, which prima facie seems relatively harmless, especially if one considers that it is no more than a theoretical model. However, concerns were voiced that such a concept also operates as a model of human beings, and as such, it implies a profound normative burden. This is because there is a temptation to perceive and present the *Economic Man* as a role model for each person aiming to be rational, not to mention those who are supposed to act in a rational manner, such as managers, brokers or entrepreneurs. Hence, students of economics may behave in a different, asocial way simply because they are exposed to frequent meetings with *Homines oeconomici* – commonly seen as infamous, self-centred, unscrupulous, greedy creatures, acting according to the “profits-first” orientation – who populate the pages of economic textbooks (see Ghoshal, 2005; Xin & Liu, 2013; Graça et al., 2016; Raworth 2017; Spiegelman, 2020).

Besides pointing at economics teaching, there is also an argument referring to the self-selection of a particular kind of people to study economics and business (see, for instance: Frey et al., 1993; Frank & Schulze, 2000; Frey & Meier, 2003). The first line of explanation led to the indoctrination hypothesis, whereas the second resulted in the self-selection hypothesis. Regardless of the numerous inquiries dedicated to this issue, the debate surrounding which factor – nurture or nature – is more important is far from over.

Furthermore, other studies, especially those drawing from surveys and field experiments, did not detect differences between economists and other students (Tse & Au, 1997; Dzionaek-Kozłowska & Rehman, 2017; Hummel et al., 2018). Moreover, some authors have demonstrated that certain differences exist; however, surprisingly, students of Economics acted more altruistically than non-economists. For instance, Yezer et al. (1996) and Laband and Beil (1999) provided real-world evidence, collected through field experiments, that economists are not less but more cooperative and honest. Hu and Liu (2003) reached the same conclusion by conducting laboratory experiments based on the Prisoner's Dilemma game. Neubaum et al.'s (2009) study, based on the Ethics Position Questionnaire, gathered evidence from over one thousand participants, yet found no differences between economists-to-be and the other students' moral philosophies. Hummel et al. (2018) managed to collect twice as many usable surveys based on the Moral Competence Test; their analysis

indicated that not only were the Economics majors no different from the other students, but “regardless of the course of studies – university education, in general, does not seem to foster students’ moral development” (2018, 559). Krick et al. (2016) also found such a result, although Business and Management respondents obtained higher scores in the so-called Dark Triad of traits (i.e. narcissism, Machiavellianism, and psychopathy). Delgado et al. (2019) concluded that educational background has minimal influence on students’ business ethics, as well as on their attitude to corporate social responsibility and sustainability (the so-called ERS – Ethics, Responsibility, Sustainability – orientation). They also found that Economics students turned out to be more prone to trusting people than non-Economics students and “commoners” (Delgado et al., 2019, 533–534). However, in this study, the economists showed themselves to be more accepting of certain antisocial behaviours (free-riding on public transport, tax avoidance, and littering on the street).

Apparently, the issue of the moral effects of economic education is still unresolved. It is remarkable, however, that game-theory-based experiments support the indoctrination hypothesis more often than studies that employ surveys and field experiments. The fact that game theory constitutes an important component of the standard Economics curricula sheds some light on the discrepancy between results obtained by these research methods. At the same time, it casts doubts on whether economic games are an appropriate research tool to investigate differences between economists and other students. In such a context, the picture obtained from surveys seems to be more accurate. Yet this highlights the problem of drawing conclusions about respondents’ morality from their self-declarations and assessments of how much they agree or disagree with given statements describing their ethical orientations. To address this issue, we take a different approach. Instead of asking for students’ evaluations of the importance of given sets of values, or to what extent they agree with a variety of statements, we confronted them with moral dilemmas, to scrutinize their choices. The options chosen were then interpreted as indicators of a given ethical position taken by a respondent.

Given that we were interested in testing the indoctrination hypothesis (the supposed negative influence of economic education on students’ morality), and not just the learning effect (the economic education teaching outcomes), we turned to moral dilemmas that dealt with some fundamental moral principles placed in a non-economic context. All of the situations were based on the Trolley Problem.

1.2. The Trolley Problem

The Trolley Problem was introduced into scientific discussions by a British philosopher, Philippa Foot (1967), and elaborated on by Judith J. Thomson (1976, 1985). Looking for a rationale to solve the problem of a pregnant woman whose life was in danger due to her pregnancy, Foot presented numerous other cases that were in some way equivalent to this tragic situation, asking whether it is morally acceptable to kill one person (the child in the womb) to save another (the mother). One of those scenarios was based on a narrative about a driver of a runaway tram, which could be diverted from one track with five people working on it, to another track with only one worker. Referring to the doctrine of the double effect, Foot asked if it is morally right to “use” this one worker as a means to save the five.

In Thomson’s now-canonical version, the tram was replaced by a trolley running down a steep hill, and the driver was replaced by a bystander who could change the track of the trolley by pulling a lever (1976, 206; see also Thomson, 1985, 1395–1396; Singer, 2005, 339). This modification was introduced to increase the neutrality of the decision-maker.

Another variant of the problem proposed by Thomson was the “Fat Man/Footbridge” scenario. In this case, the bystander is placed at the footbridge over the trolley track, the track with five workers is still the main track, and the side track with one worker is eliminated. Yet

the dilemma still exists, as an extremely obese person is placed on the same footbridge. Furthermore, the person is leaning over the railing, looking at the trolley, and we (as respondents) are aware that their body mass would stop the trolley and save five labourers (Thomson, 1976, 207–208; 1985, 1409). The available options seem to be the same: kill one person (the Fat Man) to save five. However, the empirical evidence shows that the vast majority of respondents react differently in the Fat Man scenario than in the standard Trolley Problem. They are ready to pull the lever in the Trolley Problem scenario, whereas they are reluctant to act in the Fat Man narrative (see, for instance: Greene et al., 2001; Lanteri et al., 2008; Andrade et al., 2018).

At an intuitive level, this inconsistency seems understandable, but it is much more difficult to find a convincing scientific explanation for it. The attempts to do so resulted in a lengthy debate, engaging not only philosophers and ethicists, but also psychologists, economists and cognitive scientists. One of the most interesting proposals was provided by a team led by a neuroscientist, Joshua Greene, who differentiated between “impersonal” and “personal” moral dilemmas (Greene et al., 2001), pointing to significant differences observable in people’s brains scanned when they were faced with Trolley-like problems. In the case of the “impersonal” dilemmas, represented by the classical version of the Trolley Problem, the areas activated were related to working memory. This suggests that the participants relied on their conscious reasoning, which led to pulling the lever and sacrificing one worker to save five lives. Such a decision might be seen as dictated by the consequentialist/utilitarian moral judgements based on the principle of maximizing utility (see Bentham, 1789/1907; Mill, 1861/1998). The fundamental criterion of decision-making would be to choose the path towards a greater “good” (saving five lives), and not the one that would save just one person. Leaving aside the lengthy discussion on the very possibility of making such comparisons, one might state that adhering to utilitarian/consequentialist ethics means that, in the Trolley dilemmas, the choice is dictated by the saving-more-people rule (at least as far as the people are unindividualized strangers).

Additionally, Greene et al. (2001, 2008) demonstrated that the “personal” moral dilemmas represented by the Fat Man scenario evoke emotional, automatic reactions that lead respondents to refrain from acting. One of the fundamental moral principles of the Western culture governing people’s choices seemed to be the fifth commandment, “Thou shalt not kill”: decision-makers should stay passive, as otherwise they would bear responsibility for killing an innocent person. Such decisions are related to deontological ethics, rooting moral judgements in moral duties (Kant, 1785/2003; see Amit & Greene, 2012; Greene, 2007; 2008; Greene & Young, 2020; Lanteri et al., 2008).

Nonetheless, from the ethical perspective, the problem of inconsistency of the choices in the Trolley Problems still remains, as acting according to a well-defined ethical doctrine should lead people to behave in the same way under the same circumstances. Identifying the main goal of human life – be it eudaimonia, salvation, maximum utility or happiness – is a prerequisite for establishing a coherent normative system that governs our deeds.

Somewhat surprisingly, consistency of choices is also highly praised by economists. Both orthodox economics and standard economics teaching are based on Rational Choice Theory (RCT). One of the direct conclusions stemming from RCT’s basic axioms – completeness, reflexivity and transitivity of preferences – is the consistency of choices. If a person reveals their preferences by choosing apples, not pears, their choices are consistent if they always pick apples when both fruits are available. Thus, the emphasis on the consistency of choices can be regarded as the “common denominator” between ethics and orthodox economics. This very characteristic gave us an incentive to employ the Trolley Problem dilemmas in our research instrument. The attractiveness of this thought-provoking dilemma

was strengthened by a substantial body of empirical evidence from previous studies, which could be used as a point of reference for data collected in the present research.

2. Research design

The paper reports the study conducted at a public university in Poland during the first three weeks of the academic years 2020/2021 and 2022/2023 (in November 2020 and October 2022). In 2020, all the classes were online, and the data were also collected online, by providing a link to the anonymous questionnaire shared with chosen groups of students via the lecture chat. In 2022, students attended on-site classes, therefore, we turned to the paper-and-pencil version of the same questionnaire. The protocol of the research remained the same in both waves. The respondents were informed beforehand that there were no right or wrong answers to the questions. The questionnaires were collected at the beginning of the classes before the proper lecture started; however, there was no time pressure, i.e., the respondents were given as much time as required to submit their replies. The average time taken to fill in the form was 9–10 minutes in both waves, however, the whole process of conducting the research was longer in 2022 due to the time needed to distribute and collect the questionnaires.

2.1. The Instrument

The questionnaire was composed of two types of items. First, it provided descriptions of three scenarios, presenting respondents with three moral dilemmas based on the Trolley Problem. All vignettes were presented without the Kill/Save wording. Each narrative was accompanied by a sketch depicting the scenario, followed by a question asking for students' choices in these hypothetical situations. The sketches provided in our questionnaire are presented in Figure 1. In all the cases, the choice was between just two options: to act or to refrain from acting (to stay passive). Below each alternative, some space was given for respondents' comments, should they wish to share any remarks about their choice.

The second part of the questionnaire asked for demographic data, i.e., participants' gender, relationship status, major field(s) of study, year of study, and previous economic education.

The first scenario (S1) was based on the standard Trolley Problem, the “Bystander at the Switch” variant by Thomson (1985, 1397). The only significant modification involved making all the workers wear sound-cancelling headphones. The change was introduced to eliminate answers such as “I would like to shout at the workers to warn them about the approaching train.” The respondents were asked to declare whether or not they would pull the lever to change the train track, resulting in the death of one worker on the spur track. If they did not act, five workers on the main track would die.

The second scenario (S2) explored the same dilemma on a more general level. In this version, the respondent was asked to play the role of the chief of staff during a war, who had to choose between redirecting bombs falling on the densely populated city centre to sparsely populated suburbs. Thus, the choice was again between sacrificing fewer or more people, but in this case, no concrete numbers were given.

The third scenario (S3) once more drew from Thomson's seminal paper (1976, 205–206; see also Thomson, 1985, 1395). A respondent was again faced with a choice of sacrificing one person to save five people. However, this situation was significantly different from the first one, as participants were asked to act as an exceptionally skilled surgeon who had a perfect, 100% success rate with organ transplants. They were then asked to imagine an

entirely healthy young person appearing at the hospital for an annual physical check-up. In the course of the medical procedures, it turned out that the person was a perfect match for five people waiting for organ donors. The question was whether, acting as the surgeon, a respondent would accept sacrificing this young person to save five patients.

Both the first and the second scenarios were typical moral-impersonal dilemmas. In contrast, the third was an equivalent of the footbridge dilemma, representing the intuitively “up-close and personal” type.

The study was conducted in Polish. An English translation of all the narratives is provided in the appendix.

2.2. Hypotheses

Considering previous evidence regarding the influence of economic and business education on economists-to-be, and the undeniably major role of the utility/profit maximization assumption in neoclassical, mainstream economics, we hypothesized that economics teaching promotes “utilitarian” moral judgements. If, as it is claimed, the indoctrination effect from economic education operates in the ethical dimension, then we would expect to find differences between decisions declared by the less and more advanced students of Economics, in the moral dilemmas. Therefore, the proportion of “utilitarian” judgements should increase with the advancement of economic studies.

Gleichgerrcht and Young’s study (2013) demonstrates that respondents with lower levels of empathic concern, i.e., the tendency towards feeling warmth, compassion, and care for others, are inclined to the “utilitarian” option in the Trolley-like ethical dilemmas. Hence, if the standard economics teaching based on the *Homo oeconomicus* model has the power to plant a calculating, unemotional, unempathetic mindset in Economics students, we would expect the more advanced students of Economics to demonstrate greater resistance against emotional, “deontological” responses, even in the “personal” ethical dilemma presented in Scenario #3.

Finally, if the differences between students of Economics and the other majors stem from their self-selection of Economics programmes, the share of “utilitarian” judgements should be higher among the first-year students of Economics than among their counterparts who have just begun studying Sociology.

3. Results

The sample consisted of 539 undergraduate students of Economics (N=408) and Sociology (N=123). The numbers represent over 90% of the first-year students enrolled in both programmes in 2020 and 2022, at the Department of Economics and Sociology of the University of Lodz, Poland, where the research was conducted, and 84% of the second- and third-year students of Economics in 2020. Following the questionnaire collection, responses from students who simultaneously studied two programmes were eliminated, to eradicate any potential influence of courses outside the two main curricula. The number of usable questionnaires dropped to 531, comprising 348 gathered in 2020, and 183 in the 2022 edition of our study. In the later wave, the questionnaires were collected from the first-year students only, to avoid the risk of reaching some persons from the same cohorts of respondents who had already participated in our study two years earlier (we could not eliminate the risk that facing these dilemmas previously might have exerted a certain influence on the respondents decisions and we intended to avoid such a potentially interfering factor). Running the survey in 2022 allowed us to check the robustness of our 2020 conclusions regarding the self-

selection hypothesis. Altogether, we obtained responses from 362 first-year students (239 economists and 123 sociologists), 132 second-year students, and 37 third-year students.

The sample was composed of 59.5% females and 40% males. Three persons declared themselves to be non-binary. The male/female ratio was almost identical among the second- and third-year students, where approximately one-third of the participants were male. The share of men among first-year sociologists was lower (reaching 27% in 2020 and 31% in 2022), and slightly higher among economists (44% in 2020, 55% in 2022). Half of the respondents reported being single, with the percentage of people in a relationship increasing with age (represented by a year of studies).

Not surprisingly, all second- and third-year students of Economics acknowledged taking at least one course in Economics. In turn, the share of first-year students who had previously taken such a course was below 10% (reported by 22 students of Economics and 13 of Sociology).

The collected evidence confirms a significant difference between decisions declared by the respondents in the presented “personal” and “impersonal” scenarios. The students were much more inclined to act by diverting the train to protect five workers while sacrificing one (Scenario #1), and redirecting bombs’ trajectories to save the densely populated city centre at the expense of people living in the suburbs (Scenario #2), than they were to sacrifice a healthy person’s life for the sake of five patients awaiting organ transplants. It is apparent that the respondents assessed the situation described in the third scenario as different from the previous dilemmas, even though, at the very general level, the choice they faced in Scenarios #1 and #3 was precisely the same: sacrificing one person to save five people. Nonetheless, most respondents did not perceive these two situations as equal, since there is a 53 percentage point gap between the frequencies of their answers. Yet, in light of the conclusions from numerous previous studies (see, for instance, Greene et al., 2001, Lanteri et al., 2008, Dzionaek-Kozłowska & Rehman, 2019), such an inconsistency might be expected. A breakdown of choices for the whole sample is presented in Figure 1.

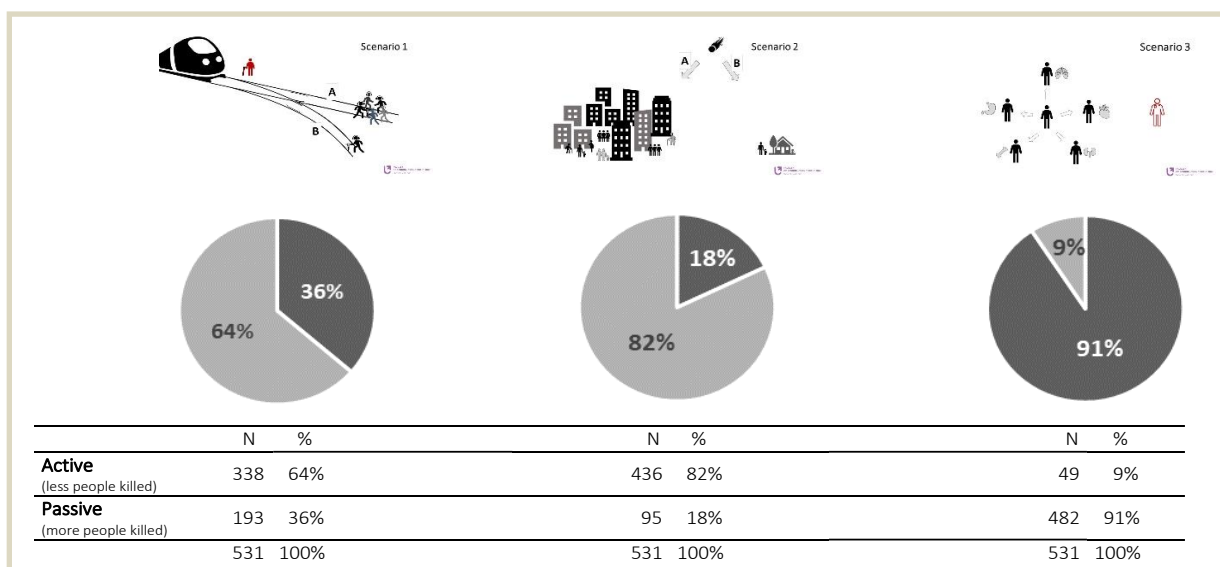


Figure 1. Respondents’ choices in all the scenarios (N=531)

Source: *own calculation*

However, for the purposes of the present study, the crucial piece of evidence is the decisions made by the less and more advanced students of Economics. Are there any differences between the responses gathered from the beginners and the more advanced students? In particular, are the answers of the second- and third-year students more

“utilitarian” than the choices of their less advanced colleagues? We find an affirmative answer to the first question, but surprisingly, not to the second. In other words, a difference between the two subsamples exists, although the direction is contrary to what might have been expected: i.e., the responses by more advanced students are not more but less “utilitarian”. Table 1 shows the outcomes for the beginners and more advanced students of Economics.

Table 1. Distribution of the results of the more and less advanced students of Economics

	BEGINNERS = 1 st -year students (N=239)		ADVANCED STUDENTS					
			2 nd - and 3 rd -year students (N=169)		2 nd -year students (N=132)		3 rd -year students (N=37)	
Scenario #1								
Active	167	69.9%	95	56.2%	74	56.1%	21	56.8%
Passive	72	30.1%	74	43.8%	58	43.9%	16	43.2%
Scenario #2								
Active	208	87.0%	136	80.5%	105	79.5%	31	83.8%
Passive	31	13.0%	33	19.5%	27	20.5%	6	16.2%
Scenario #3								
Active	32	13.4%	12	7.1%	8	6.0%	4	10.8%
Passive	207	86.6%	157	92.9%	124	94.0%	33	89.2%

Source: *own calculation*

The data reveal that first-year students are slightly more willing to act than their colleagues who are more advanced economists. This difference occurs in all the scenarios. The association between the advancement of economic education and passive approach in the moral dilemmas is statistically significant, as in Scenario #1, $\chi^2(1, N=408) = 7.44$, $p = .00638$; in Scenario #2, $\chi^2(1, N=408) = 4.25$, $p = .03927$; and in Scenario #3, $\chi^2(1, N=408) = 4.34$, $p = .03720$. Nevertheless, the strength of these associations is weak, as Phi coefficient values equal 0.368, 0.210, and 0.215, respectively.

This indicates a difference between decisions made by less and more advanced students of Economics in ethical dilemmas; however, regardless of their progression in economic education, the choices of more advanced students are more “deontological” than “utilitarian”. In particular, the present study does not provide evidence to support the hypothesis that economic education promotes “utilitarian” judgements in “personal” ethical dilemmas, which might have been concluded from the conventional narrative about the harmful effects of economic education on students’ morality.

One of the factors controlled in our research was the students’ previous economic education. This variable was introduced to identify those first-year students whose choices might have been affected by their prior knowledge of economic concepts and theories. However, the subsample of first-year students who declared previous economic coursework was relatively small, as only 22 out of 408 (i.e., less than 6% of the subsample) reported having such experiences. Nevertheless, taking this limitation into account, it is worth reporting that in all scenarios, students who had taken previous Economics courses were less eager to take an active approach than the first-year students who had just started their economic education (Table 2). The association between prior economic education and students’ choices was statistically significant in Scenario #2 only (Fisher’s exact test statistic value is .0475, and this result is significant at $p < .05$).

Table 2. Distribution of the choices by first-year students of Economics: Prior economic education breakdown

	1 st -year students of Economics (N=239)		not having prior economic education (N=217)		having prior economic education (N=22)	
Scenario #1						
Active	167	69.9%	153	70.5%	14	63.6%
Passive	72	30.1%	64	29.5%	8	36.4%
Scenario #2						
Active	208	87.0%	192	88.5%	16	72.7%
Passive	31	13.0%	25	11.5%	6	27.3%
Scenario #3						
Active	32	13.4%	31	14.3%	1	4.6%
Passive	207	86.6%	186	85.7%	21	95.4%

Source: *own calculation*

A valuable insight into students' choices is provided by the analysis of response patterns. In all subsamples, the most popular sequence was to take an active approach in Scenarios #1 and #2, while refraining from killing the young man in the third scenario. This sequence, confirming once again the discrepancy between "personal" and "impersonal" moral dilemmas, was characteristic of half of the Economics students. Slightly less than one-quarter of them decided to act in the second scenario only. These two most popular sequences were chosen by nearly 75% of the respondents. However, the first-year students were much more prone to take the active-active-passive sequence than their more advanced colleagues (the frequencies were 56.5% and 45%, respectively). The second most popular sequence, i.e., being active only in Scenario #2, was more common amongst the more advanced students, who chose such a pattern in 30% of cases; whereas it was taken by slightly less than 20% of the first-year students (the difference between frequencies of the two most popular sequences by the less and more advanced students is statistically significant, $\chi^2(1, N = 305) = 8.90$, $p = .0029$).

The frequencies of all the patterns are shown in Table 3.

Table 3. Sequences of choices in all the scenarios by the more and less advanced students of Economics and the first-year students of Sociology

Choices' sequences			Economists		1 st -year students of Economics		2 nd - & 3 rd -year students of Economics		1 st -year students of Sociology	
S1	S2	S3	N	%	N	%	N	%	N	%
active	active	passive	211	51.7%	135	56.5%	76	45.0%	56	45.5%
passive	active	passive	94	23.0%	43	18.0%	51	30.2%	32	26.0%
passive	passive	passive	38	9.3%	20	8.4%	18	10.7%	15	12.2%
active	active	active	28	6.9%	21	8.8%	7	4.1%	4	3.3%
active	passive	passive	21	5.1%	9	3.8%	12	7.1%	15	12.2%
passive	active	active	11	2.7%	9	3.8%	2	1.2%	0	0.0%
passive	passive	active	3	0.7%	0	0.0%	3	1.8%	0	0.0%
active	passive	active	2	0.5%	2	0.8%	0	0.0%	1	0.8%
Sum			408	100%	238	100%	169	100%	123	100%

Source: *own calculation*

Besides the most popular sequences, i.e., the active-active-passive and the passive-active-passive, two other options are interesting for the present study: a consistently passive approach, and a consistently active approach. These two patterns are entirely opposed, yet they are both fully consistent. The passive-passive-passive sequence might be called a

“consistently deontological” attitude; whereas the active-active-active we can label as a “consistently utilitarian” approach. Taking into consideration the alleged influence of economic education on students’ morality, the number of those who took such a “consistently utilitarian” approach can be regarded as relatively small. Only 28 out of over 400 students of Economics participating in the present research revealed their willingness to act in all the scenarios, including killing a healthy person to save five patients waiting for organ transplants. However, an even more surprising finding is that this entirely “utilitarian” approach was chosen less frequently by the more advanced students of Economics (4.1% of them) than by those who had just started their economic studies (8.8%). In contrast, the “consistently deontological” approach was slightly more popular among the more advanced (10.7%) than among the first-year students (8.4%). It is also worth mentioning that four “consistent deontologists” (14.3% of them) were from the subsample of 22 first-year students who had taken an Economics course prior to enrolling in the current programme.

The sequence with an active approach in the third scenario and passive attitude in at least one of the previous narratives was rarely chosen (altogether, in 16 cases only, and 17 if one student of Sociology is also included). However, all three least frequent patterns violate the standard reactions in the “impersonal” (S1 and S2) and “personal” (S3) ethical dilemmas, which might be regarded as an explanation for why they occurred so rarely in our study, too.

The choices, typical and untypical, became more understandable thanks to the commentaries left by the respondents. Approximately 40% of students of Economics decided to comment on their decisions.¹ After analyzing all comments, it turned out that the majority of the rationales mentioned in the commentaries aligned with the “utilitarian” label given to the active approach in the moral dilemmas. In the first and second scenarios, almost all the remarks of those who took the active (“utilitarian”) approach revealed a utilitarian attitude. The common rationale for acting in Scenario #1 was to save more lives, by choosing the lesser evil to serve the greater good. In contrast, the comments by respondents who took the passive approach were much more diverse; and, more importantly, in about half of the cases, they cannot be regarded as deontological. In the first scenario, besides pointing at moral reluctance to kill a person, students explained their unwillingness to redirect the train by mentioning (1) inability to act under stress; (2) lack of information, and unknown factors such as a risk of collision with another train on the track if they diverted it towards one labourer; (3) a fear of legal consequences for killing an innocent worker; and (4) the hope that at least one of the workers would turn their head and notice the train, which would be more probable in a group of five than in the case of a single person. The last explanation could be a simple ex-post rationalization of an emotion-driven decision, yet it could also be read as some sort of utilitarian reasoning.

A similar situation occurred in the second scenario. The typical explanation for redirecting the bombs from the densely populated city centre to the suburbs (active approach) was saving more lives. At times such a decision was also motivated by a reference to a duty of a military commander to minimise damages. However, 12 out of 30 comments left by students who took the passive (“deontological”) approach clearly indicated not a deontological but rather a utilitarian rationale. This group of respondents justified their decisions of not acting by pointing at more bunkers and shelters in the city centre; more dwellings, and therefore more casualties in the suburbs; and a high risk that not all the bombs would be successfully redirected, which would result in having destroyed both parts of the town.

¹ The commentaries were added by 193 students of Economics below Scenario #1, while 153 of the respondents left comments about Scenario #2, and 156 in the case of Scenario #3.

Equally informative were the remarks by those economists who declared their readiness to sacrifice the man in the third scenario. Fortunately, 20 out of 44 representatives of this subsample decided to elaborate on the reasons behind their choices. Remarkably, nine out of those 20 respondents stated that their willingness to sacrifice the patient stemmed from the assumption that the healthy young person would have voluntarily agreed to dedicate their life to saving others (even though no hints about the man's consent were included in the provided description of that situation). The commentaries indicate that those nine students' "yes" in Scenario #3 was in fact conditional (depending on "if the young man agrees to do it"). Moreover, it is noteworthy that only half of the 20 respondents explained their decision with a utilitarian rationale ("by sacrificing one person, we gain five lives"). In turn, among those respondents who took the passive approach in the third scenario and commented on their decision, the deontological rationale was the most common, as it appeared in around 80% of cases. Two other justifications for refraining from acting in that case were (1) hope that some other organ donors would appear; and (2) the risk that the transplants would not be successful, and the organs taken from the healthy young patient would have been "wasted". The latter could be interpreted as some kind of utilitarian explanation, similar to the argument mentioned above that in a bigger group of workers, there is a higher chance that one of them would notice the approaching train and warn the others.

Justifying choices was not a requirement for submitting the questionnaire, and comments were left by less than half of our respondents. This means we do not have enough evidence to extrapolate and draw further conclusions about the rationales for the choices of all the surveyed students. However, while confirming that most explanations provided in the commentaries fit well with the "utilitarian" and "deontological" labels, the commentaries' analysis demonstrates clearly that the correspondence between active/passive and "utilitarian"/"deontological" attitudes is much more nuanced. Respondents' decisions to choose an active or passive option should not be perceived automatically as taking a utilitarian or deontological approach, in the proper sense of these words (cf. Dzionaek-Kozłowska et al., 2024).

Finally, turning to the evidence required to test the self-selection hypothesis, i.e., the responses by the first-year students of Economics and the first-year students of Sociology, our study confirms a difference between the choices of these groups. In all three scenarios, the respondents enrolled in the undergraduate Economics programme took the active approach more frequently than their Sociology counterparts. The distribution of their responses is presented in Table 4.

Table 4. Distribution of the results for the first-year students of Economics and Sociology

	2020				2022			
	Economists (N=124)		Sociologists (N=55)		Economists (N=115)		Sociologists (N=68)	
Scenario #1								
Active	82	66.1%	30	54.6%	85	73.9%	46	67.7%
Passive	42	33.9%	25	45.4%	30	26.1%	22	32.3%
Scenario #2								
Active	110	88.7%	41	74.6%	98	85.2%	51	75.0%
Passive	14	11.3%	14	25.4%	17	14.8%	17	25.0%
Scenario #3								
Active	12	9.7%	2	3.6%	20	17.4%	3	4.4%
Passive	112	90.3%	53	96.4%	95	82.6%	65	95.6%

Source: *own calculation*

The difference between economists' and sociologists' decisions in moral dilemmas revealed itself in both waves of our research, although a slight shift towards a more active approach in the first and the third scenarios was noticeable between groups of respondents

recruited in 2020 and 2022. However, these differences between students of Economics and of Sociology are statistically significant in two scenarios only: i.e., Scenario #2, $\chi^2(1, N = 362) = 9.39, p = .0022$, and Scenario #3, $\chi^2(1, N = 362) = 7.13, p = .0076$.² Interestingly, the distribution of sequences of choices by the first-year sociologists is very similar to the frequencies of choice patterns by the second- and third-year students of Economics (Table 2), with the most popular sequence (active-active-passive) chosen by almost the same percentage of respondents (45%), and a higher share of “consistent deontologists” than “consistent utilitarians”. Apparently, in our study, the exceptional group is the first-year economists, not sociologists.

Our data demonstrate that neither gender nor relationship status affects students’ decisions in the moral dilemmas based on the Trolley Problem. Slightly more males decided to act in all the scenarios, although the differences were minor and statistically insignificant (the spectrum of differences between men and women ranged from 3.3 percentage points in Scenario #1 to as little as 2.2 percentage points in Scenario #3). The fact that the male/female ratio was slightly higher for the first-year than for the more advanced groups of students might have explained the differences between less and more advanced students’ answers in Scenarios #1 and #2. Nevertheless, it is evident that neither gender nor relationship status played a (statistically) significant role in students’ choices. Table 5 presents the breakdown based on both variables.

Table 5. Breakdown of respondents’ gender and relationship status

	Female (N=316)		Male (N=212)		Non-binary (N=3)		Single (N=288)		In a relationship (N=236)	
Scenario #1										
Active	197	62.3%	139	65.6%	2	66.7%	183	63.5%	148	62.7%
Passive	119	37.7%	73	34.4%	1	33.3%	105	36.5%	88	37.3%
Scenario #2										
Active	256	81.0%	177	83.5%	3	100.0%	234	81.3%	196	83.0%
Passive	60	19.0%	35	16.5%	0	0.0%	54	18.7%	40	17.0%
Scenario #3										
Active	26	8.2%	22	10.4%	1	33.3%	26	9.0%	21	8.9%
Passive	290	91.8%	190	89.6%	2	66.7%	262	91.0%	215	91.1%

Source: *own calculation*

4. Discussion

The most unexpected finding of the present study is the less “utilitarian” attitude of the more advanced students of Economics, compared with their colleagues who had just started undergraduate economic education. Therefore, in contrast to concerns expressed by some commentators, economics teaching appears not to be “harmful” enough to transform students into unemotional two-legged calculating creatures seeking to maximize utility, who fit into the *Homo oeconomicus* mould.

The difference we found between the beginners and the more advanced students could be read as a confirmation of the indoctrination hypothesis *à rebours*, as that result is precisely the opposite of what might have been anticipated. Nonetheless, the difference exists, which raises the question of why those who have just started their economic studies took the active, “utilitarian” approach more often than the students with a year or two of economic education. The age difference between the undergraduates in general, and our respondents in particular, is far too narrow to ascribe the discrepancy to younger generations’ preference for a utilitarian resolution to sacrificial moral dilemmas, as reported by Hannikainen et al. (2018). A more

² The chi-squared tests of independence were conducted for the whole samples of the first-year students of Economics (N=239) and Sociology (N=123).

plausible line of explanation is inspired by Lanteri and Rizzello's (2014) study on how the stereotypical image of an economist can influence people's behaviour. It seems probable that some first-year students who had attended their first lectures may have purposefully or unconsciously tried to solve the moral dilemmas presented in our questionnaire "as an economist" to reach the stereotypical image of an economist. The classroom environment might have caused them to pick the option regarded as being in accordance with the "economic way of thinking". Our instrument does not include questions allowing us to confirm whether a number of the first-year economists made conscious attempts to follow the stereotypical image of the *Economic Man* in their decision-making. Nevertheless, this explanation for the higher share of active responses among the first-year students seems viable, especially given that the questionnaires from this subsample were collected at the beginning of Microeconomic 101 lectures in both waves of our research.

The commentaries indicating a discrepancy between passive ("deontological") choices and the non-deontological rationales used to explain these choices point to another possibility. It might be the case that more advanced students of Economics drew "deontological" rationales from a deeper understanding of the *Economic Man* model's intricacies. First, the passive approach might have been chosen if a respondent perceived the narratives as not informative enough. For instance, we do not know whether the unseen parts of both tracks in Scenario #1 are empty or not. Imperfect information violates one of the basic assumptions of the *Homo oeconomicus* model. Thus, a person might have decided that the pieces of information provided are insufficient to decide, and in such circumstances, the rational decision would be to refrain from acting. As a result, we would observe a passive approach, but without a deontological rationale. Second, the passive approach would also adhere to the *Homo oeconomicus* model if there is a conflict between what a person perceives as the most beneficial to themselves, and what they perceive as the most beneficial for the group of people ("a society"). Such a situation occurs, for example, when the burden of legal consequences for killing a man is perceived as greater than the satisfaction gained from saving five lives. Here again, the passive approach should be regarded as utilitarian and not deontological.

The less debatable outcome of the present study is the confirmation of the self-selection hypothesis. The first-year undergraduates enrolled in the Economics programme chose the "utilitarian" options more often than the first-year sociologists. This finding supports previous research on students' values by Gandal et al. (2006), Arieli et al. (2016), Krick et al. (2016), as well as some studies based on laboratory and natural experiments (Frank & Schulze, 2000; Frey & Meyer, 2003; Mertins & Warning, 2014). The self-selection hypothesis was also partially supported by Dzionaek-Kozłowska and Rehman (2019), whose study provides an interesting point of reference for the present paper. These authors also worked with a Polish sample of Economics and Sociology students (N=181), and included the standard Trolley Problem scenario in their instrument. Similarly to our findings, the "utilitarian" approach was chosen slightly more often by economists than by sociologists (88% and 84%, respectively), but contrary to our study, the difference between the two subpopulations was not statistically significant. A (statistically) significant difference occurred in the Fat Man/Footbridge narrative only; however, this dilemma is not fully comparable with the Organ Transplant scenario we employed. Although they both belong to the "personal" Trolley-based moral dilemmas, the "active" approach was chosen much more frequently in the former than in the latter case. Also, in relation to frequencies, a surprising result was the relatively low percentage of our respondents not willing to pull the lever in the standard Trolley Problem – contrary to the findings of Dzionaek-Kozłowska and Rehman's (2019) and numerous other papers (see, for instance, Andrade et al., 2018, Lanteri et al., 2008, Rehman & Dzionaek-Kozłowska, 2018; 2020). The average share of the "utilitarian" replies in

our Scenario #1 was 64%, i.e., over 20 percentage points lower than what was reported by Dzionaek-Kozłowska and Rehman (2019). The gap between our respondents and participants of other studies is even greater when comparing the results of Hauser et al.'s (2007) seminal paper based on over 2.5 thousand surveys. Except for one tiny subsample of American Indian/Alaskan Natives (N=18), who were very reluctant to sacrifice one worker to save five (only 40% of them assessed such a deed as being morally acceptable), for all the other subpopulations (designated according to national affiliation, ethnicity, religion, level of education, age, gender, and exposure to moral philosophy), the level of acceptance of the "utilitarian" approach was significantly higher (M=85%) than in our study. The similarity of results for all but one group led Hauser and his co-authors to conclude that all factors played a small role in how people approach moral dilemmas. Given that the study was based on data from 120 countries, this conclusion seems very well grounded. However, a closer look at their evidence reveals that Hauser et al. (2007) worked with predominantly WEIRD respondents (the acronym coined by Henrich, Heine and Norenzayan (2010) stands for Western, Educated, Industrialized, Rich and Democratic societies). In contrast, other researchers obtained divergent outcomes from different cultures they investigated – such as Ahlenius and Tännsjö (2012), who studied American, Russian and Chinese respondents; Gold et al. (2014), who worked with British and Chinese students; and Rehman and Dzionaek-Kozłowska (2020), who gathered evidence from Hispanic Americans and Chinese samples. The Chinese respondents were generally less prone to take the "active approach" than Russians, and Americans chose it the most often. Polish society is regarded as much closer to the values and attitudes constituting the WEIRD ideal type than both the Chinese and Russian ones. Yet, our data point to a dimension in which there is a noticeable difference between what is typical of the WEIRD model and the Polish case. The finding that the present group of respondents is less willing to act in the first scenario than the majority of other research participants does not interfere with the primary purpose of this study, i.e., to investigate the claimed negative influences of economic education on students' morality.

Returning to Hauser et al.'s (2007) findings, we confirm no gender effect on the Trolley-related moral choices. Respondents' religion, ethnicity and exposure to moral philosophy were beyond the scope of our study. Nevertheless, Poland is one of the most ethnically homogeneous countries in the world, with more than 97% of people identifying themselves as ethnically Polish (Statistics Poland, 2015). This justifies the assumption that there were no significant differences in this regard. However, the issue of religion is no longer quite as simple. For many years, the country was depicted as a mainstay of Catholicism, with over 95% of people declaring themselves adherents of this religion (Statistics Poland, 2022). Yet recent decades have witnessed a growing tendency towards secularization, especially in the younger cohorts of society. Although we did not control for religion, there are reasonable grounds to suppose that our respondents were either adherents of the Christian religion or atheists. Finally, regarding exposure to moral philosophy, the course on Philosophy is not a part of the Economics curriculum; therefore, our participants did not receive any formal philosophical training. However, the percentage of respondents declaring the active approach in the standard Trolley scenario (64%) was surprisingly close to the result from a sample of professional philosophers investigated by Bourget and Chalmers (2014). Out of nearly one thousand philosophers who participated in that research, 68.2% declared they would pull the lever to save five workers by sacrificing one. It must be noted that the number of options was higher: besides the basic alternative to pull or not pull the lever, there were also four other possibilities, such as "agnostic/undecided", "insufficiently familiar with the issue", "there is no fact of the matter", and "the question is too unclear to answer". Though it sheds little light on our own results, Bourget and Chalmers' study clearly demonstrates that in contrast to

Hauser et al.'s (2007) findings, exposure to moral philosophy may influence the choices made in Trolley-type ethical dilemmas.

Another explanation, and a potential weakness of our analysis, may relate to the so-called order effect. We cannot exclude the possibility that the ordering of our scenarios affected the respondents' choices. However, even if such an effect occurs, it would not undermine the internal coherence of our research, as all students received the same questionnaire with the same order of narratives. Thus, the order effect would be relevant only when comparing the frequency of answers obtained in the present study with other studies' outcomes. Furthermore, Petrinovich and O'Neill (1996) showed that in the case of surveys based on Trolley-type moral dilemmas, an order effect exists only when the presented scenarios are of the same kind. This means that ordering is important if we have, for instance, a set of Trolley Problems that all involve trolleys (such as the standard Trolley Problem and the Footbridge/Fat Man scenarios). No order effects have been found in sets with narratives placed in diverse contexts, like ours.

Conclusion

The present study confirms a difference in people's perception of "personal" and "impersonal" moral dilemmas. The surveyed Economics students were found to have a significantly greater declared readiness to save more people by sacrificing fewer people in "impersonal" scenarios (#1 and #2) than in a "personal" scenario (#3) based on the Organ Transplant narrative. However, contrary to expectations formed from statements about the allegedly harmful outcomes of economics teaching on students' values and norms, economic education does not seem to make students more prone to expressing "utilitarian" ethical judgements. The more advanced students were not more but less willing to sacrifice one worker for the sake of five, to save a densely populated city centre by destroying the suburbs, and to sacrifice a healthy man to transplant his organs into five patients waiting for organ donors. All the results allow us to conclude that economic education should not be regarded as being able to seriously undermine students' morality.

An additional interesting finding stems from the analysis of respondents' comments, as it was found that nearly half of those who declared their readiness to sacrifice a healthy person in Scenario #3 based their decision on the supposition that the person had agreed to sacrifice themselves voluntarily. Apparently, in spite of the content of standard economics teaching, economists do not always perceive "more" as "better" in all types of contexts. This means that the present research does not support claims that economic education has the power to transform students into unscrupulous calculating machines, reducing all the intricacies of social reality to a common denominator of some sort in the restless quest to maximize it.

Bearing in mind the findings of this study, we may turn to a more general question: Can university education affect students' values and attitudes to any significant extent? There is a belief that academic teaching can effectively promote certain values and norms, as such messages are frequently included in academic curricula and presented as teaching outcomes. Nevertheless, our study aligns with the stance of developmental psychologists, and with empirical evidence gathered by Hummel et al. (2018), who concluded that academic teaching does not impact students' moral development.

Such a conclusion does not exclude the possibility that there are differences between the moral choices of Economics and non-Economics students and alumni. However, the evidence suggests that roots of the conceivable dissimilarities should be sought in pre-existing differences between students deciding to choose different majors and career paths, rather than in the economic education itself.

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Appendix

The description of scenarios presented in the questionnaire (English translation)

Scenario #1

You are on a small hill next to a railway track, hearing the sound of a train approaching.

You notice five workers repairing the main track, all of whom are wearing sound-cancelling headphones. Near the place you are standing, a rail fork is visible. Unfortunately, one worker is repairing the spur track. He too wears sound-cancelling headphones.

By the rail fork, there is a lever diverting the train from the main track onto the spur track.

Would you pull the lever to divert the train?

- YES
- NO

Scenario #2

Your country is at war. Unfortunately, the capital is under attack. The enemy air force is bombing it.

The Chief of Staff is not able to fight the bombers. All he can do is try to change the trajectories of the bombs to divert them from the densely populated city centre to the sparsely populated suburbs.

Would you make such a decision?

- YES
- NO

Scenario #3

You are an extremely gifted and lucky surgeon with a 100% success rate with organ transplants, i.e., no organ you transplanted was ever rejected by a recipient.

At the present moment, five patients are waiting for organs, without which none of them will survive for more than a couple of weeks.

A young man arrives at your clinic for his annual physical check-up. He turns out to be perfectly healthy, and, additionally, his organs are a perfect match for the five patients waiting for organ donors.

Would you sacrifice the young man and transplant his organs to the five patients?

- YES
- NO