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Are happier people less judgmental of other people's selfish behaviors? Experimental survey evidence from trust and gift exchange games

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Highlights

- We investigate people's normative views in trust and gift exchange games using survey methods.
- We also examine whether moral judgments are functions of positive emotions.
- We find that there is a moral dimension to others' nonreciprocal actions.
- Positive moods led subjects to be less judgmental on others' selfish behaviors.

Are Happier People Less Judgmental of Other People's Selfish Behaviors? Experimental Survey Evidence from Trust and Gift Exchange Games

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Abstract

What determines people's moral judgments of selfish behaviors? Here we study whether people's normative views in trust and gift exchange games, which underlie many situations of economic and social significance, are themselves functions of positive emotions. We use experimental survey methods to investigate the moral judgments of impartial observers empirically, and explore whether we could influence subsequent judgments by deliberately making some individuals happier. We find that moral judgments of selfish behaviors in the economic context depend strongly on the behavior of the interaction partner of the judged person, but their relationships are significantly moderated by an increase in happiness for the person making the judgment.

JEL: C91
Keywords: happiness; moral judgments; trust games; gift exchange games

1. Introduction

In this paper, we employ experimental survey methods to address two research questions: first, are moral judgments a function of positive emotions? And second, do changes in subjects' positive emotions affect their moral judgments toward selfish actions in trust and gift exchange games? The use of questionnaire and survey methods to analyze individuals' views on distributive justice and redistributive policy has attracted the interest of many economists.[1] The empirical analysis of individuals' normative views is an important issue as it may be relevant to the explanation and the understanding of individuals' actual behaviors (e.g. Sen, 1982). One of the normative views that has received scant attention in the economics literature is the moral judgments of individuals, which can be defined as "evaluations (good vs. bad) of the actions or character of a person that are made with respect to a set of virtues held to be obligatory by a culture or subculture" (Haidt, 2001: p. 817). In a seminal study of moral judgments in economics, Cubitt and co-authors (2011) show, using experimental survey methods, that free riding in public-good games is typically judged to be morally reprehensible by impartial observers, except when it is carried out in response to previous free riding by the other co-player. Cubitt et al.'s (2011) study is the first to offer economists important insights into the formation of moral judgments of free riding.

In our paper, we extend the empirical investigation of moral judgments to selfish behaviors in a different economic context, namely trust and gift exchange games. Trust, which can be considered as a type of positive reciprocity, characterizes many real life economic and social phenomena, and the frequent occurrences of trusting relationships in economic and social transactions make them important for economics and social sciences. Trust and gift exchange games have also played a major role in the social preferences literature and the conflict of interests they capture make them potentially fruitful for the empirical investigation of moral judgments. For example, research in the laboratory and in the field shows that, when firms offer employees a wage above that of the competitive equilibrium level, workers will typically reciprocate positively by exerting higher effort levels even when they are not contractually obligated to do so (Fehr et al., 1993; Charness and Kuhn, 2011; Kube et al., 2012). Such positive reciprocal behaviors, which may arise not necessarily because actors expect future material benefits from their action but as a response to other people's friendly gestures, are well documented in the economics literature (for a comprehensive review, see Fehr and Gächter, 2000). However, it does not automatically follow that a worker's decision

[1] For comprehensive overviews, see Konow (2003) and Gaertner (2009).

not to reciprocate positively to the firm's "gift" would have been deemed morally wrong by an impartial observer. On the contrary, a nonreciprocal action might have even been deemed morally acceptable in the eyes of self-interest – or in moral psychology, egotistical – agents (Sanders, 1988). A similar argument can be made to describe the typical behaviors in experimental trust games (Berg et al., 1995; Camerer, 2003; McCabe et al., 2003).

We elicit moral judgments of impartial observers toward selfish behaviors in trust and gift exchange games, and ask: Would it be considered morally wrong for subjects *not* to trust or reciprocate trust in an anonymous exchange setting? If so, what factors influence how severe a transgression is being viewed by an impartial observer? Because empirical evidence in this area is currently scarce, little is understood about the constructs of moral judgments of selfish behaviors in economics.[2] Our main focus of interest is whether moral judgments of selfish behaviors in economics, like many other types of judgments on typical ethical dilemmas studied in moral psychology, are subject to emotional influences[3]. The philosophical and psychological literatures broadly distinguish between two models of how individuals might arrive at their moral judgments: the reason-based model and the emotion-based model. The reason-based model (e.g. Kohlberg, 1969; Turiel, 1983) emphasizes that moral judgments are the ultimate goal of reasoning and regards judgments as the result of conscious deliberation. On this account, moral judgments reflect moral reasoning. While rationalist models of moral judgments have long dominated the field of moral psychology, research by psychologist Jonathan Haidt has provided convincing evidence that moral judgments may not have been the outcome of reasoning and reflection. Rather, perceived moral violations tend to invoke specific negative emotions such as contempt, anger, or disgust, and it is these emotional processes that influence the way we ultimately form our intuitive moral judgments (Haidt et al., 1993; Haidt, 2001; Haidt and Hersh, 2001; Prinz, 2006). In other words, the emotion-based models see emotions and intuitions as the drivers of moral judgments.

In our experiment, we test whether moral judgments are functions of positive emotions and whether subjects in a positive mood are less judgmental toward selfish actions in trust and gift exchange games than subjects in a neutral mood. To address our research questions, we use survey methods and ask subjects to respond to a set of questionnaires in which they are

[2] Since our objective is to elicit subjects' own actual judgments, we did not elicit moral judgments in an incentivized way. Rewarding subjects for making judgments would have introduced obvious biases as there are no objectively "right" or "wrong" answers to moral judgment tasks (see also Cubitt et al., 2011). Krupka and Weber (2013) propose an experimental technique where people are rewarded for correctly guessing which norms other people hold. Their interest is in eliciting what people think the social norm is, whereas we are interested in the individual's own moral judgments.

[3] Psychologists usually make a distinction between moods (which are typically long-lasting states) and emotions (which are typically short-lived states). However, in this paper, we are not concerned with making such a distinction and we therefore use these terms interchangeably.

confronted with hypothetical scenarios involving either a two-player trust or gift exchange game. In various endings of these scenarios, one player always behaves in a selfish way, while the other offers different amounts to their counterpart. For each separate scenario, subjects are asked to express their moral rating toward the selfish actor as impartial bystanders. We also induce positive emotions midway through the experiment – i.e. after each subject has already given their first moral ratings – to test whether these can influence the subsequent ratings among the treated subjects' moral judgments (compared to the controls).

Our study can be seen as a contribution not to just economics but also to the emerging literature in moral psychology, which is a literature that has focused almost exclusively on finding the determinants of moral judgments across different non-economics contexts (see Haidt, 2001; Nichols, 2004; Haidt, 2007; Nado et al., 2009, for recent analyses). Although our design was not intended to discriminate conclusively between the reason-based and the emotion-based models, our findings shed useful light on these two major accounts of how people form moral judgments.[4]

The paper is organized as follows. Section 2 describes the experimental design and procedures of the experiment. We analyze and report our findings in Section 3. Section 4 concludes.

2. Experimental Design and Procedures

2.1 Experimental Design

The experiment consists of two treatments: the "Happy-treatment" (H-treatment) and the "Neutral-treatment" (N-treatment). The H-treatment and the N-treatment differ only with respect to the manipulation of individuals' emotional states. Subjects in each treatment are required to complete two sets of identical questionnaires: once before receiving the relevant treatment, and once directly after.

[4] It should be noted that we are not the first to study the causal link between emotions and decision making in economically relevant contexts. For example, Kirchsteiger et al. (2006) demonstrate that, within a gift exchange game experiment, players with a bad mood tend to be more reciprocal in their behaviors, whereas players with a good mood tend to behave more generously and transfer more endowment to the other player. Studies have also found that happier individuals are typically healthier (Davidson et al., 2010), risk averse (Goudie et al., 2014), more patient (Ifcher and Zarghamee, 2011), more productive (Oswald et al., 2015), and earn more income (DeNeve and Oswald, 2012).

We were also interested in eliciting individual's moral judgments as impartial observers of other people's behaviors in two economic conditions, namely, in the trust game (TG) and in the gift exchange game (GEG). This gave us a 2 × 2 between-subjects experimental design, i.e., (N-treatment, TG condition), (H-treatment, TG condition), (N-treatment, GEG condition), and (H-treatment, GEG condition). The order of the tasks that subjects perform within a condition is summarized in Figure 1.

[Insert Figure 1 about here.]

To elicit subjects' emotional responses and their moral judgments, we implemented a within-subjects design. This is primarily because one of our main research questions lies in whether changes in subjects' positive emotions influence changes in their moral judgments. The within-person design also allows us to directly assess whether the elicitation of emotions and moral judgments differs across conditions before our emotions' manipulation. This would not have been possible to test had we implemented a between-subject design. On the other hand, we acknowledge that our within-subject design is more vulnerable to experimenter demand effects, as the same subject is asked to report their emotions and moral judgments before and after the emotions' manipulation.

At the beginning of each session, subjects are asked to rate on a seven-point scale their current emotional states, with the scale ranging from "1 – no intensity at all" to "7 – high intensity." We elicit six emotions: happiness, envy, anger, boredom, contentment, and irritation. As mentioned, our focus is on the interaction between positive emotions (namely, happiness and contentment) and moral judgments.

Similar to Cubitt et al.'s (2011) work, the moral judgment questionnaire ask subjects to rate, as an impartial observer, the actions of others in either a trust game or a gift exchange game. It principally describes a decision problem for two fictitious players, named Person A and Person B, then gives some possible endings, each of which specify players' choices and their consequences. Each questionnaire consists of five scenarios with the same decision problem, but different endings. Within each questionnaire, the behavior of Person A varies across scenarios, but Person B is always selfish. After each ending, subjects are asked to rate the morality of Person B. We measure moral ratings on a scale from −50 (extremely bad) to +50 (extremely good).

To assess the impact of induced positive emotions on moral judgments, we use a methodological approach common in psychology whereby external stimuli (such as a short

video clip) are employed to induce particular emotions (Westermann et al., 1996).[5] For the H-treatment, subjects watch a short video clip where passengers are dancing in a train station.[6] This "Happy" video clip is meant to induce participants' positive emotional states. For the N-treatment, subjects watched a short video clip depicting sea waves. This film is considered "neutral" by social psychologists, and is meant not to alter participants' moods.[7] After mood induction had taken place, subjects are asked to respond to the same questionnaire that they had received before the video clip. The experiment is concluded by the completion of a post-experimental questionnaire, where we collect data on the subjects' demographic characteristics.

By analyzing the link between subjects' self-reported positive emotions and moral judgments at the start of the experiment (before the video clip), we can assess whether these two responses are interrelated. By comparing the differences in induced self-reported positive emotional ratings within a given condition (before and after the mood induction process), we can make causal inferences on whether differences in moral judgments can be attributed to individuals' shift of self-reported positive emotions. Below, we present in detail the specifics of each questionnaire in the TG and the GEG condition, separately.

Questionnaire for the TG Condition — Under this condition, fictitious players in the hypothetical scenarios are paired up. Person A, who moves first, must decide how much money is to be given to Person B, the second mover. The amount sent is multiplied by a factor of 3, and Person B must decide how much money is to be sent back to Person A. The first mover's action to send money to the second mover measures trust, whereas the amount returned by the second mover to the first mover measures trustworthiness. In particular, the payoff function used in our scenarios can be written as follows:

Payoff for Person A (Sender) = 20 – x + y

Payoff for Person B (Receiver) = 3*x – y

[5] Exposing subjects to short video clips has been suggested as one of the most successful emotion-induction procedures and to minimize experimenter demand effects (e.g., Clark, 1983; Martin, 1990).

[6] The happy video clip was part of T-Mobile's advertisement campaign and can be found online at www.youtube.com/watch?v=VQ3d3KigPQM. This video clip lasted 2 minutes and 41 seconds.

[7] The neutral video clip was "Waves" on the Stanford Psychophysiology Laboratory resources' website (http://spl.stanford.edu/resources.html). This video clip lasted 58 seconds.

where x denotes the amount sent by Person A to Person B and can take an integer value from £0 up to £20 (in increments of £5); whereas y denotes the amount sent by Person B to Person A and is always equal to £0.

The actual description of the decision situation in the TG condition, along with the first scenario, is shown below.

> *Imagine a group that consists of two members, Person A and Person B. Person A receives an endowment of 20 pounds and has to decide how many pounds to keep for himself and how many to transfer to Person B. The amount of pounds that Person B receives from Person A is tripled. Then Person B has to decide how many pounds from this tripled amount to send back to Person A. The total income of Person A is his endowment of 20 pounds minus the amount of pounds he transfers to Person B plus the amount of pounds he receives back from Person B. The total income of Person B is the amount of pounds he receives from Person A multiplied by 3 minus the amount of pounds he sends back to Person A. Assume that Person A decides first and Person B observes Person A's choice before making his own decision.*
>
> *A) Assume that Person A transfers 0 pounds to Person B and Person B sends back 0 pounds to Person A. Therefore, as a result of their decisions, Person A's total income is 20 pounds and Person B's total income is 0 pounds. How do you rate* ***Person B's*** *morality?*

Over the other four remaining scenarios, Person A becomes more trusting of Person B, and his transfer increases to £20 in increments of £5. Person B is always selfish and returns £0. Because Person A's trust is not reciprocated by Person B's action, the payoff gap between the two players increases. In the first scenario, Person A earns more than Person B, because both players behave in a selfish way. In the second scenario, both players earn exactly the same amount of money: £15. For the remaining three scenarios, Person A continues to increase the amount of money he is transferring to Person B, thus increasing the income gap as we move toward the last scenario.

Questionnaire for the GEG Condition — Again, fictitious players in the hypothetical scenarios are paired up, with one receiving the role of the "Employer" (first mover) and the other the "Employee" (second mover). The first move involves the employer setting the employee's wage level, and the second move involves the employee choosing an effort level to contribute to the firm. The trust and the gift exchange game have similar aspects in their structure, in the sense that the first mover shows trust to the second mover. Yet the

description of the gift exchange game adds more social context in the decision situation facing each player, as opposed to the case of the trust game, where the actual framing of the scenarios is more neutral. In particular, the payoff function used in our scenarios can be written as follows:

Payoff for Person A (Employer) = 25*e – w

Payoff for Person B (Worker) = w – e

where w denotes the wage offered by Person A to Person B and can take an integer value from £5 up to £25 (in increments of £5); whereas, e denotes the effort level chosen by Person A and is always equal to 1.

The description of the decision situation in the GEG condition, along with the first scenario, is shown below.

> *Imagine a group that consists of two members, Person A and Person B. Person A, who is in the role of Employer, decides to offer a wage to Person B, who is in the role of Employee. Person A can choose a wage of 5, 10, 15, 20 or 25 pounds. Then Person B has to decide how much effort to spend. Person B can choose an effort level of 1, 2, 3, 4 or 5. The total income of Person A is the effort level spent by Person B multiplied by 25 minus the amount of wage he offers to Person B. The total income of Person B is the amount of wage he receives from Person A minus the cost of his effort level, which is equal to the effort level he chose. Assume that Person A decides first and Person B observes Person A's choice before making his own decision.*
>
> *A) Assume that Person A offers a wage of 5 pounds to Person B and Person B chooses an effort level equal to 1. Therefore, as a result of their decisions, Person A's total income is 20 pounds and Person B's total income is 4 pounds. How do you rate Person B's morality?*

The scenarios differ from each other only in Person A's behavior. Person A's wage offer is £5 (as shown) in the first scenario, rising to £25 in increments of £5 over the other four scenarios. Again, the judged player, Person B, does not reciprocate back (by always choosing the lowest possible effort level) toward the non-judged player, Person A. As a result of their decisions, the income for Person A is greater than that of Person B for the first two scenarios, whereas the income for Person B is greater than that of Person A in the last three scenarios.

2.2 Procedures

The experiment was conducted in the Centre for Experimental Economics (EXEC) laboratory at the University of York, UK. We recruited participants from a university-wide pool of undergraduate and postgraduate students who had already indicated their willingness to participate in economic experiments. The experiment was computerized, and the subjects were recruited using the ORSEE software (Greiner, 2004). All sessions used an identical protocol. Upon arrival, subjects were randomly assigned a computer screen. They were informed that the session consisted of two sections. However, they were not told what would happen in the second section, to reduce the possibility for having wrong expectations about the nature of the experiment. The set of instructions for both sections was displayed on their computer screens. Subjects were allowed to ask questions by raising their hands and speaking to the experimenter in private. They were not allowed to communicate with one another throughout the session.

Subjects were randomly allocated into different treatments and conditions. Each subject could participate in only one session, which consisted of two identical questionnaires. Therefore, our design also allowed us to perform within-subjects tests (i) for the impact of the video clip (either happy or neutral) on self-reported positive emotions and (ii) for differences in moral judgments before and after subjects had been exposed to the video clip.

In our experiment, we could not incentivize task-responses, although we could incentivize participation. Because our objective was to study subjects' impartial moral attitudes, a questionnaire-based approach was appropriate for this purpose because any means of tying payments to subjects' responses could confound the way they report their attitudes (Cubitt et al., 2011). Given that our judgment tasks are moral judgment tasks, there are no objectively "right" or "wrong" answers to them. This implies that it would not have been possible for us to reward subjects for "correct" judgments. Rewarding subjects for making judgments that conform to either a particular ethical theory, or to our own ethical views, or to an average opinion, would have introduced biases to our experiment, given that the aim of the experiment was to elicit subjects' *own* actual judgments and not their beliefs about which judgments would be rewarded or are held by others (see also Cubitt et al., 2011). Given the absence of task-related incentives, we paid subjects a show-up fee of £5. The payment of a fixed amount of money to participants is common practice in survey-based experiments. No session lasted more than 30 minutes. In total, 237 subjects took part in our experiment: 129

subjects participated in the H-treatment (63 subjects in each of the two conditions), and 108 subjects participated in the N-treatment (54 subjects in each of the two conditions).

3. Results

3.1. How do People Judge Selfish Behaviors in Others?

Prior to examining the impact of happiness on moral judgments, we explore how people rate the scenarios in each condition separately and focus on the initial phase of moral judgment elicitation. Recall that in each scenario, the judged player is always acting selfishly, whereas his co-player's behavior is becoming increasingly prosocial. We first test whether there are any differences in moral judgments between the H- and the N-treatment and, by performing a rank-sum Wilcoxon test, we find statistically insignificant differences between the H- and the N-treatment (TG condition: $p > 0.332$; GEG condition: $p > 0.108$). We therefore pool these two treatments in the analysis of this section.

The main tool for our analysis is the mean evaluation function (MEF), which gives the average moral ratings that subjects assigned to the judged player as a function of the behavior of the non-judged co-player. Figure 2 shows the MEF for each of our two conditions. In all graphs, the horizontal axis indicates the behavior of the non-judged player (Person A). For the TG (GEG) condition, the horizontal axis indicates the amount of pounds sent (wage paid) by Person A to Person B. In both conditions, Person B is selfish, and the average moral ratings that subjects assigned to Person B are shown on the vertical axis. Ratings below (above) 0 indicate a morally blameworthy (praiseworthy) action, and ratings of 0 indicate that the action is perceived to be of no moral significance.

[Insert Figure 2 about here.]

Two striking observations emerge from Figure 2. First, the MEF in both conditions is generally downward sloping. This suggests that as Person A becomes increasingly prosocial, subjects become increasingly condemning toward Person B's selfish actions. Second, subjects morally perceive selfishness on a known selfish actor as being morally praiseworthy. This pattern is observed in both TG and GEG conditions. When Person A sends £0 to Person B, subjects perceive not returning anything back as not being immoral. In addition, choosing the lowest possible effort level is morally acceptable when the wage offered by the employer (Person A) is the minimum one. In particular, using a Wilcoxon signed-rank test, we find

that, when Person A sends £0 (£5) in the TG (GEG) condition, the average moral ratings are statistically different from zero ($p < 0.001$).

As a further step to better understanding how subjects assigned their moral ratings, we divide their response patterns into three categories: (i) negatively sloped MEFs; (ii) flat MEFs; and (iii) other MEFs, which include positively sloped and non-monotonic MEFs. A common pattern of judgment that emerges from Figure 2 is that the overwhelming majority of subjects have a negatively sloped MEF. This implies that subjects become increasingly more condemning toward Person B when Person A become more prosocial and Person B observes Person A's action. Yet only a small percentage of subjects pass judgments on Person B that are independent of Person A's behavior. Our evidence clearly indicates that subjects perceived selfish behaviors as immoral acts, except when a selfish action is known to the judged co-player (in which case, selfishness is perceived to be morally acceptable). In addition, subjects do not assign neutral moral ratings in the vast majority of cases, indicating that they perceive selfish actions as having a moral dimension.[8] These two observations agree with earlier experimental investigations that elicited individuals' impartial moral judgments in social dilemma games using hypothetical scenarios (see Cubitt et al., 2011). We summarize our first finding below.

Finding 1 — On average, subjects perceive acting in a selfish manner as having a moral dimension. Most subjects increase their moral condemnation toward the selfish actor the more prosocial his co-player becomes.

3.2 What are the relationships between positive emotions and moral judgments?

In this section, we analyze associations at the cross section between emotions and moral judgments before the video clip is shown. We first look at some descriptive statistics of each of the two positive self-reported emotions we elicit at the beginning of a session. Recall that emotions are elicited on a seven-point scale, with 1 indicating no intensity at all, and 7 indicating high intensity. Table 1 reports the average levels of emotions (and standard deviations) for each treatment, separately. The average intensities of happiness and contentment in the TG condition are 4.906 and 4.530, respectively, whereas, in the GEG condition, they are 5.058 and 4.333, respectively.[9] The emotion with the lowest intensity was

[8] For the TG condition, subjects assign a neutral moral rating in 68 out of 585 cases (11.62%); whereas, for the GEG condition, subjects assign a neutral moral rating in 36 out of 600 cases (6%).

[9] A rank-sum Wilcoxon test produces statistically insignificant differences for each emotion separately between the H- and the N-treatment for the TRUST condition (p-values > 0.113). Regarding the GEG condition, all emotions but irritation are insignificantly different

anger: Subjects report a value of 1.897 in the TG condition and 1.842 in the GEG condition.[10]

[Insert Table 1 about here.]

We next assess whether there are significant associations between positive emotional responses and moral judgments. As our main concern is with positive emotions, we consider both happiness and contentment in our ordinary least-squares regression analyses on the determinants of moral judgments (Table 2). To avoid problems with multicollinearity, we run separate regressions for happiness and contentment as both variables are significantly and positively correlated (Pearson correlation coefficient = 0.384; p-value < 0.001 for the TG condition; Pearson correlation coefficient = 0.275; p-value = 0.002 for the TG condition). In these regressions, the dependent variable is the moral rating assigned by a subject to a given scenario. In Models (1a) and 1(b) which refer to the TG condition (and (2a) and 2(b), which refer to the GEG condition), we include on the right-hand side of the regression equations four dummy variables, which take the value 1 for a given scenario (our baseline category, which is excluded from the regressions, is scenario 1) and the self-reported levels of happiness and contentment (in separate regressions). In Models (1c) and (1d) for the TG condition (and (2c) and 2(d) for the GEG condition), we add further control variables that include subject's gender (1 if female, 0 if male), field of study (1 if they study economics, 0 otherwise), and nationality (1 if British, 0 otherwise).

[Insert Table 2 about here.]

A first observation from our regression analysis is that the scenario dummies have negative and statistically significant coefficients different from zero (with the only exception that of the dummy for scenario 2 in the regression of the TG condition). This implies that the MEF is on average negatively sloped in both conditions, with the size of the coefficients increasing as we move to scenario 5. We also find evidence suggesting that happiness and contentment explain how subjects morally judged Person B's selfish actions. More specifically, people who reported higher levels of happiness assigned significantly higher moral ratings on

from each other at conventional levels between the H- and the N-treatment (p-values > 0.466). As our main concern is with positive emotions (namely, happiness and contentment), we pool these two treatments in the analysis of this section.

[10] We also note that the vast majority of our subjects have watched the corresponding video clips for their first time. Specifically, in the H-treatment, 89 out of 129 subjects (i.e. 68.99%) had watched the happy video clip for their first time and 89 out of 129 subjects (i.e. 31.01%) had watched the video clip at least once. These 40 subjects reported that they had watched the happy video clip, on average, 2.25 times. Regarding the video clip in the N-treatment, we find that 107 out of 108 subjects (i.e. 99.07%) have watched the video clip for their first time and only 1 subject had watched the video clip at least once.

average (the coefficient of the variable "happiness" is positive and statistically significant in Models (1a) and (1c)), indicating that, at the cross section, happier people tend to judge others' egotistical behaviors less harshly. A similar conclusion carries over when we look at the regression model for the GEG condition when additional variables have been controlled for (see Model (2d)). Here, the coefficient of the variable "contentment" is positive and significant at the five percent level. The results are robust to regression models that replace the four scenario dummy variables with one variable that takes the value of the amount sent/wage (depending on the condition) offered by Person A in each scenario separately.[11] It is also interesting that nationality is a determinant of how subjects morally evaluated selfishness. In all regression models, British subjects were significantly more judgmental than non-British subjects. We summarize our second finding below.

Finding 2 — There are significant cross-sectional links between positive emotions and moral judgments. Subjects who reported to be happier and more content typically assigned higher moral ratings toward a selfish actor.

3.3 The impact of induced positive emotions on moral judgments

Was the Happy Video Successful at Inducing Positive Emotions? — We ran the following happiness regression equations in order to test whether (i) subjects' happiness levels were the same across treatments prior to watching the video, (ii) subjects' happiness levels were the same across treatments after watching the video, and (iii) the net effect of watching the video clip on happiness was positive and statistically significant:

(1) $$Hb_{ij} = \alpha_{0j} + \beta_{0j} H\_treatment_{ij} + \varepsilon_{0ij},$$

(2) $$Ha_{ij} = \alpha_{1j} + \beta_{1j} H\_treatment_{ij} + \varepsilon_{1ij},$$

(3) $$(Ha_{ij} - Hb_{ij}) = \alpha_{2j} + \beta_{2j} H\_treatment_{ij} + \varepsilon_{2ij},$$

[11] From these regressions (reported in Table A.1, Appendix A), we find that the coefficient of the variable "amount sent by Person A" is significantly and negatively correlated with moral ratings, suggesting that, as the amount Person A sent to Person B in the TG condition increased, subjects became increasingly condemning toward Person B. We reach the same conclusion for the GEG condition: Subjects were more condemning toward Person B when Person A offered a higher wage.

where i = 1, ..., N and j = 1,..., J; Hb_{ij} and Ha_{ij} are self-reported happiness (or a proxy for positive emotion) of individual i in treatment j before and after watching the video clip, respectively; and $H\_treatment_{ij}$ is a dummy variable with a value of 1 if the subject watched the "Happy" video (the H-treatment) and 0 if the subject watched the "Neutral" video (the N-treatment). The parameters α_{0j}, α_{1j}, and α_{2j} represent the happiness of the control group before watching the neutral video, after watching the video, and the within-person difference pre- and post-watching the neutral video, respectively. While the parameters β_{0j} and β_{1j} measure the respective pre- and post-video differences in self-reported happiness between the control group and the treated group, respectively, the parameter β_{2j} captures the treatment effect of the "Happy" video on the happiness of the treated.

Table 3a presents OLS estimates on the happiness regression equations for both conditions. We report the unconditional estimates (i.e. no control variables) in columns 1(a) and 2(a), and the conditional estimates – controlling for subject's gender, field of study, and nationality – in columns 1(b) and 2(b). Looking across all four columns, it can be seen from the coefficients on H-treatment in the Hb equations that we cannot reject the null hypothesis that the means of happiness between the control and the treated group before watching the assigned video clip in either of the two conditions are the same. After watching the clip, however, there were marked differences in the average happiness, Ha, across the two groups, which are also statistically robust to controlling for subjects' gender, field of study, and nationality. With respect to the net effect of each video treatment, subjects in the H-treatment group experienced an increase in the level of happiness between 0.8 to 1-point increase on the seven-point happiness-intensity scale higher than the change in happiness experienced by subjects in the control group, thus implying that the "Happy" video was successful at raising happiness for subjects in the treated group. By contrast, the statistically insignificant coefficients on the constant terms in the "change" equations imply that happiness did not go up – and in one case, even went down – for the control group after having watched the "Neutral" video.

[Insert Table 3a about here.]

When we perform the same econometric analysis with "contentment" as the dependent variable in Table 3b, we find qualitatively similar results to those reported in the case of happiness, i.e. subjects in the H-treatment experienced a more positive increase in

contentment compared to those in the N-treatment. However, it should be noted here that the net effect of the "Happy" video on subject's contentment is considerably less robust compared to its effect on subject's happiness.

[Insert Table 3b about here.]

In short, we can conclude from this analysis that the "Happy" video was successful at inducing a significant increase in the happiness for the treated. The question is: Are there any significant changes in how people rate moral judgments in different scenarios alongside these changes in positive moods?

To test whether the induced happiness can explain differences in moral judgments across treatments, we start by looking at differences in moral judgments in the TG condition. First, we provide the average moral judgments for each of the two conditions across treatments and then compare them (using a Wilcoxon signed-rank test) to determine any differences before and after the video clip. Figure 3 illustrates the average moral ratings as a function of each scenario separately before and after the video clip was shown to subjects. We observe that all four moral evaluation functions (before and after the video clip) are negatively sloped: The more prosocial Person A becomes by sending to Person B higher amounts as we move toward scenario 5, the more strongly Person B's behavior is judged as morally wrong. In particular, before (after) the neutral video clip is shown, average moral judgments started at a level of 7.259 (12.185) in scenario 1 and became −37.241 (−37.537) in scenario 5. The same pattern is observed in average moral judgments before (after) the happy video clip is shown. Another feature of the moral evaluation functions in the TG condition is that, in the first two scenarios (where Person A sends £0 and £5 to Person B, respectively), Person B's behavior was perceived to be morally praiseworthy, irrespective of whether the neutral or the happy video clip was shown.

[Insert Figure 3 about here.]

We next test for any differences in moral judgments between treatments. Figure 3 indicates that, in the TG condition, subjects' moral ratings are similar in the N-treatment before and after watching the video clip, but that they become less judgmental in their ratings in the H-treatment after they are exposed to the happy video clip. To assess whether differences are statistically different, we perform a Wilcoxon signed-rank test for the equality of matched pairs of observations (within-subjects test). Table 4 reports the corresponding p-values from

the pairwise comparisons of each of the five scenarios before and after the video clip for each treatment, separately. Our analysis reveals that, on average, subjects in scenarios 1, 2, and 5 report moral judgments that are not statistically significantly different from each other either before or after the video clip is shown. In contrast, in scenarios 3 and 4, subjects report similar moral judgments toward Person B after they watch the neutral video, but they become significantly less judgmental by rating Person B's action in a less reprehensible manner after they watch the happy video.

[Insert Table 4 about here.]

We next examine for potential changes in moral judgments in the GEG condition. As shown in Figure 4, the descriptive features of the MEF in this condition are similar to those observed in the TG condition. First, the shape of the MEF in all four combinations (before and after the video clip) is negatively sloped, implying that subjects become increasingly judgmental of Person B for choosing the lowest possible effort as Person A increases the wage. Second, choosing the lowest effort level is considered to be a praiseworthy action, conditional on Person A choosing a low wage (equal to either £5 or £10). In these two scenarios, in most cases average moral ratings are above zero. In addition, the MEF in the H-treatment is always above the corresponding MEF in the N-treatment. Table 5 reports the average moral ratings along with the corresponding p-values from a nonparametric Wilcoxon signed-rank test for each scenario comparison and treatment, separately.

[Insert Figure 4 about here]

[Insert Table 5 about here]

In all scenarios, subjects are assigning higher moral ratings toward Person B, thus indicating that they become less judgmental of Person B's egotistical behaviors immediately after watching the happy video clip. The differences between scenarios are statistically significant at the one percent level in all cases, except for scenario 5, in which average moral ratings are similar before and after the happy video clip. To test whether these differences can be attributed to the manipulation of positive moods, we also performed pairwise comparisons across scenarios after subjects watched the neutral video clip. Our analysis indicates that average moral ratings were statistically insignificant in most scenarios (namely, scenarios 3–

5). Regarding scenarios 1 and 2, significant differences in moral judgments were observed at the five percent level.[12]

We further examine whether differences in induced positive emotions can explain differences in moral judgments before and after subjects had watched the video clip. In Tables 6 and 7, we perform OLS regression models, where the dependent variable is the difference in moral judgments (i.e. post-video moral judgments *minus* pre-video moral judgments). In Models (1a) and 1(b) of each of these two tables, we include as independent variables four dummy variables that take the value 1 for a given scenario (our baseline category is scenario 1) as well as the difference in happiness and contentment (in separate regressions). The variable "Difference in happiness" is defined as post-video happiness *minus* pre-video happiness. The variable "Difference in contentment" is constructed analogously. In Models (1c) and (1d) each of these two tables, we include further control such as subjects' gender (1 if female, 0 if male), field of study (1 if they study economics, 0 otherwise), and nationality (1 if British, 0 otherwise).

[Insert Table 6 about here.]

[Insert Table 7 about here.]

Our regression results from Table 6 indicate that, in the H-treatment, the variables "Difference in happiness" and "Difference in contentment" are positively and statistically significantly correlated with differences in moral judgments. This implies that the happier and more content subjects become after the "Happy" video clip is shown, the less judgmental they are likely to be toward the selfish actor (i.e. the higher moral ratings they assign). Yet, in the N-treatment, differences in positive emotions are not significantly correlated with differences in moral judgments.

Table 7 also shows that there are positive correlations between differences in happiness/contentment and differences in moral judgments, although these correlations are not statistically significant at conventional levels. As far as the N-treatment is concerned, we find that the coefficient of the variable "Difference in happiness" is negatively and statistically significantly correlated with differences in moral judgments, suggesting that the less happy subjects become, the more judgmental they are likely to be toward the selfish

[12] One possible conjecture why we observe significant differences in scenarios 1 and 2 of the N-treatment might be that when subjects perceive an action as being morally praiseworthy, they become less judgmental by just re-reading the scenario, regardless of whether positive moods have been induced. This also seems to be case in scenario of the TG condition (although the difference in moral judgments in the N-treatment is only marginally insignificant; $p = 0.1060$).

actor. Our regression results are also robust to regression models that replace the four scenario dummy variables with one variable that takes the value of the amount sent/wage (depending on the condition) offered by Person A in each scenario separately (see Tables A.2 and A.3 in the Appendix). We summarize our third finding below.

Finding 3 — The differences in positive emotions can explain differences in moral judgments: Induced positive emotions led to subjects assigning less judgmental moral ratings both in the TG and in the GEG condition.

4. Conclusions

This article experimentally investigates the links between positive emotions and moral judgments in trust and gift exchange games using survey methods. These games have played a central role in the social preference literature, and their frequent occurrence in real-world economic and social phenomena makes them fruitful for the empirical analysis of moral judgments. In particular, the relationship between employers and employees in labor markets is characterized by positive reciprocity incentives: Employees who perform their jobs satisfactorily are rewarded with higher wages. We examine the extent to which violation of the wage–effort hypothesis (by having one player always choosing the minimum effort level, irrespective of the wage offered by the employer) and trust is perceived to be morally condemning by impartial observers, and examine how positive emotions affect how moral appraisals of a given situation are expressed.

There are two main implications to our findings. First, we show that, on average, subjects perceive selfish behaviors to have a moral dimension. In particular, most subjects increase their moral condemnation toward the selfish actor the more prosocial the behavior of his co-player becomes. Interestingly, if an employer offers a low wage to the employee, shirking is perceived to be morally praiseworthy. We also find that the trust and the gift exchange games are seen as having a moral dimension: non-involved outside observers tend not to give neutral moral evaluations of a non-reciprocal actor. If this is a general feature of trusting relationships, it suggests that moral judgments might play a role in explaining reciprocal behavior in these two frameworks.

Second, we observe that positive emotions are linked with moral judgments: (a) Subjects who report to be happier and more content make less negative moral appraisals for a given scenario; and (b) induced positive emotions lead subjects to arrive at less negative moral conclusions of selfish behavior. What this implies is that subjects do not form their moral

judgments purely by applying simple consequentialist moral principles in which subjects only respond to the payoff consequences of the judged action. By contrast, subjects' responses are also influenced partly by their induced emotions. Overall, this suggests that our findings fit more easily with the emotions-based model than to the reason-based model.

Our findings provide a number of future research avenues. First, we provide evidence that selfishness is typically considered by an average impartial observer as a morally reprehensible act, and increasingly so as the other player becomes increasingly more prosocial toward the selfish actor. This increasing moral condemnation may be a motive behind the choice of employees to spend high effort levels when they receive higher wages. The extent to which moral judgments and actual behavior is linked is an open empirical question for further studies seeking to bridge the gap between moral psychology and applied economics. Relatedly, a second research possibility stemming from our study is that moral judgments appear to be themselves functions of positive emotions. This finding adds to the existing strand of literature that highlights the importance of emotions in decision making. It would be interesting to test whether the induced moods cause changes in subjects' preferences or their moral judgments when subjects are materially involved in the decision making task. Third, induced positive affects moderate the moral judgments of other people's selfish behaviors in a certain direction: They lead subjects to make less negative moral appraisals. Whether induced negative emotions would generate the opposite effect is an interesting challenge for future research. This will provide us with further insights about the relevance of the emotions-based model in explaining how subjects arrive at their moral judgments.

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Figure 1: Timeline of tasks within a condition

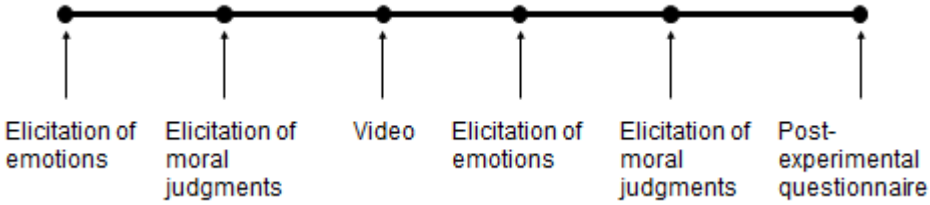
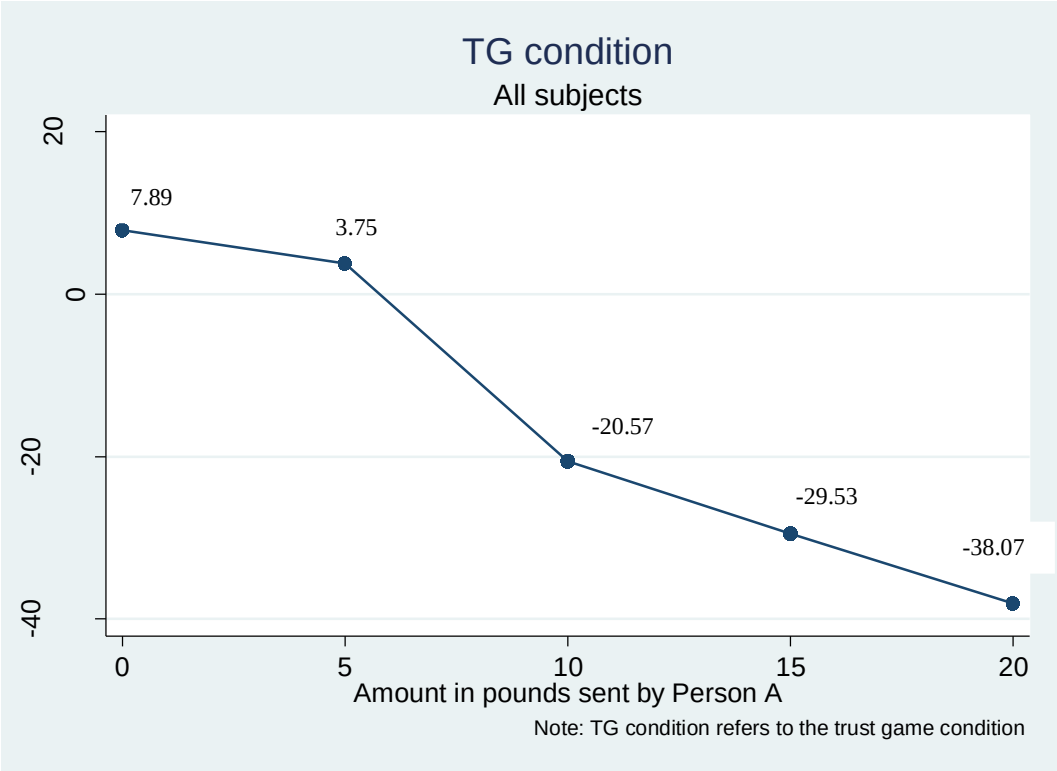
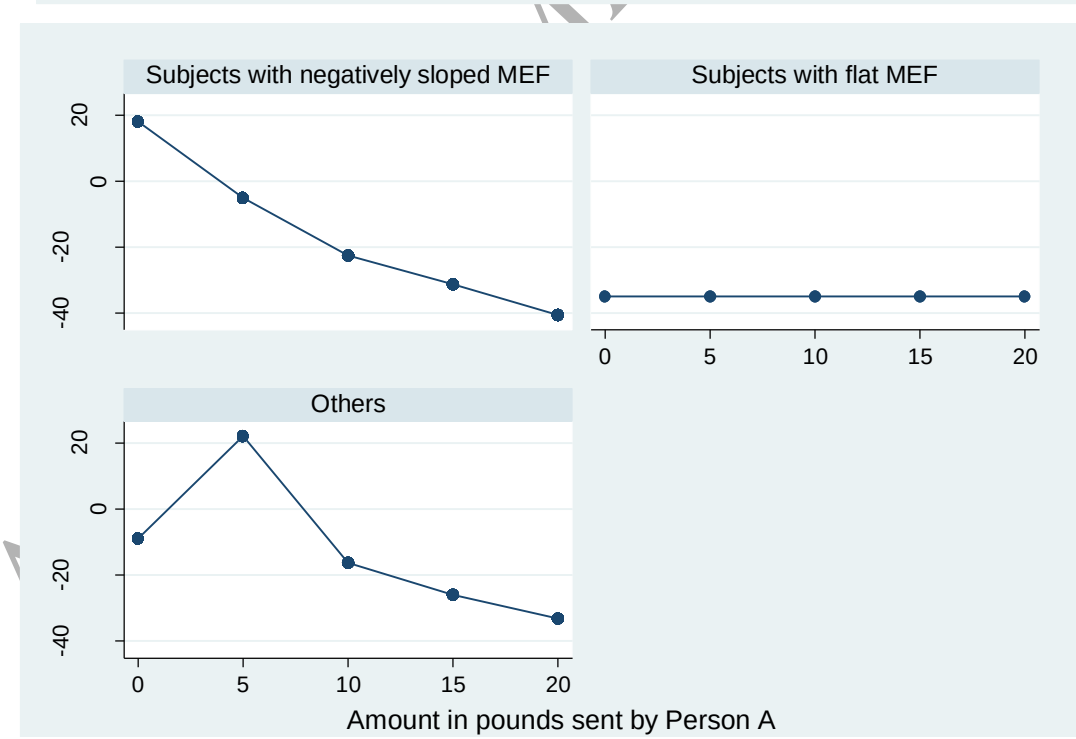


Figure 2: The moral evaluation function condition before the video clip

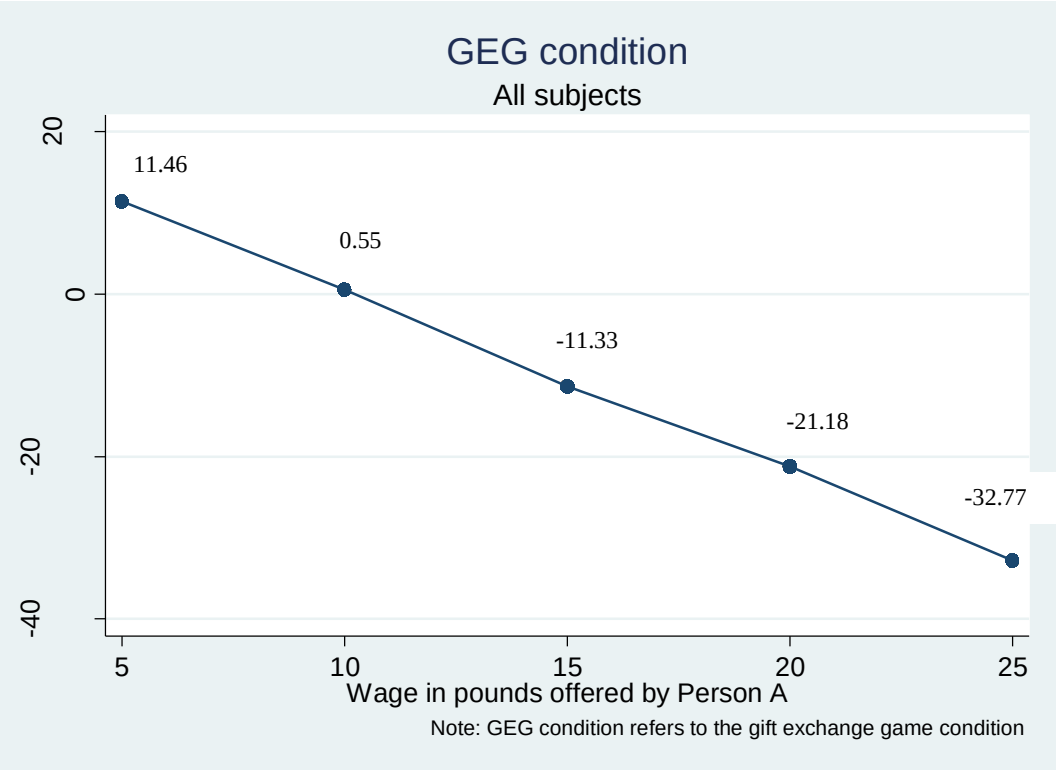
(a) TG condition

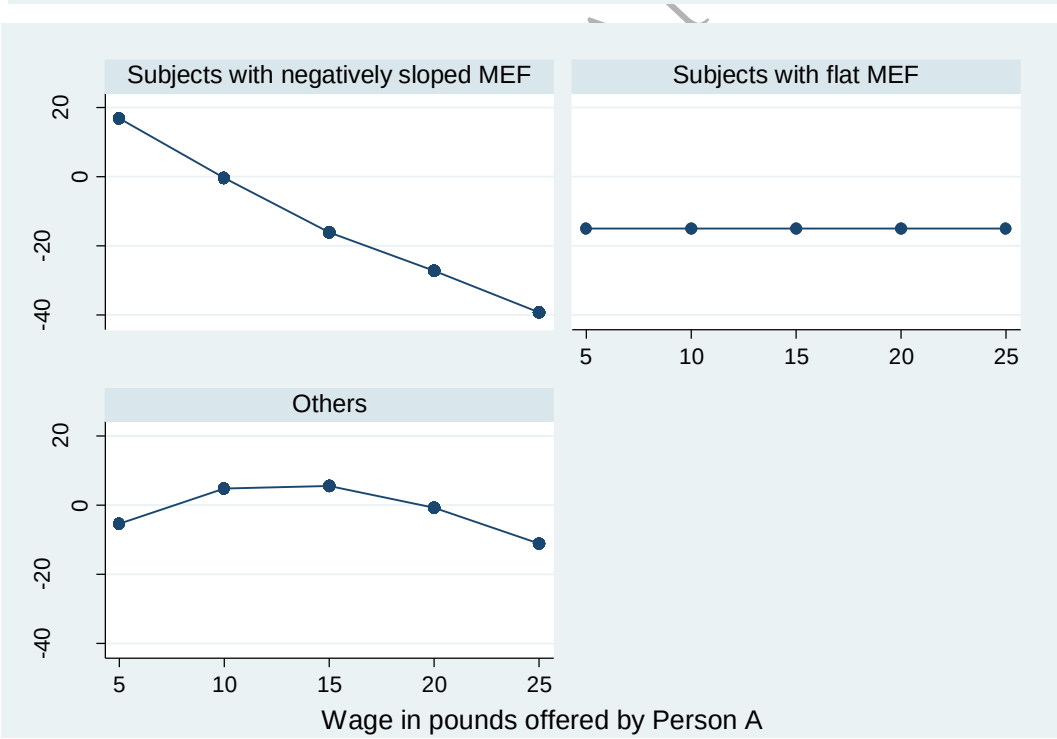




Note: 64.10% of subjects have a negatively sloped MEF, 1.71% of subjects have a flat MEF and 34.19% of subjects are classified as "Others".

(b) GEG condition





Note: 76.67% of subjects have a negatively sloped MEF, 1.67% of subjects have a flat MEF and 21.67% of subjects are classified as "Others".

Table 1: Mean self-reported emotions before the video clip in the TG and the GEG condition

	TG condition	GEG condition
Happiness	4.906	5.058
	(1.218)	(1.040)
Contentment	4.530	4.333
	(1.562)	(1.491)
Envy	2.329	2.383
	(1.452)	(1.462)
Anger	1.897	1.842
	(1.417)	(1.341)
Boredom	2.577	2.533
	(1.406)	(1.289)
Irritation	2.496	2.217
	(1.563)	(1.271)
N	117	120

Note: Mean self-reported emotions (before the video clip) with the corresponding standard deviations (in parentheses) for each condition separately. The intensity for each emotion was recorded on a 7-point scale (1 = "not at all", ... , 7 = "very much"). In this table, self-reported emotions for the N-treatment and the H-treatment have been pooled.

Table 2: Emotions and moral judgments for each condition before the video clip was shown – Regression results

	Dep. Variable: Moral Judgment (before the video was shown)							
Independent variables	TG condition (1a)	TG condition (1b)	TG condition (1c)	TG condition (1d)	GEG condition (2a)	GEG condition (2b)	GEG condition (2c)	GEG condition (2d)
Scenario 2	-4.137	-4.137	-4.137	-4.137	-10.908***	-10.908***	-10.908***	-10.908***
	(3.294)	(3.304)	(3.275)	(3.280)	(2.504)	(2.510)	(2.527)	(2.525)
Scenario 3	-28.462***	-28.462***	-28.462***	-28.462***	-22.783***	-22.783***	-22.783***	-22.783***
	(3.009)	(2.984)	(2.978)	(2.960)	(2.651)	(2.650)	(2.657)	(2.650)
Scenario 4	-37.419***	-37.419***	-37.419***	-37.419***	-32.633***	-32.633***	-32.633***	-32.633***
	(2.910)	(2.898)	(2.884)	(2.876)	(2.749)	(2.746)	(2.749)	(2.741)
Scenario 5	-45.957***	-45.957***	-45.957***	-45.957***	-44.225***	-44.225***	-44.225***	-44.225***
	(3.003)	(2.999)	(2.986)	(2.984)	(2.966)	(2.963)	(2.963)	(2.956)
Happiness	1.531**		1.311*		-0.078		0.120	
	(0.759)		(0.765)		(0.838)		(0.835)	
Contentment		0.611		-0.284		0.847		1.419**
		(0.536)		(0.556)		(0.558)		(0.591)
Gender (= 1 if female)			0.482	0.514			-3.085*	-2.429
			(1.978)	(1.983)			(1.775)	(1.782)
Field of study (=1 if economics)			-3.959*	-4.629**			0.320	0.274
			(2.247)	(2.220)			(2.602)	(2.597)
Nationality (= 1 if British)			-5.221***	-5.125***			-4.533**	-5.967***
			(1.825)	(1.881)			(1.752)	(1.808)
Constant	0.379	10.657***	3.893	11.655***	11.853**	7.786**	14.720***	9.551***
	(4.577)	(3.419)	(5.102)	(3.736)	(4.679)	(3.030)	(4.795)	(3.370)
R-squared	0.419	0.416	0.429	0.426	0.356	0.358	0.365	0.370
N	585	585	585	585	600	600	600	600

Note: OLS estimates. Robust standard errors are presented in square brackets. The dependent variable "Moral Judgment" denotes the moral rating that subjects assigned in a given scenario. The independent variables Scenario 2, Scenario 3, Scenario 4 and Scenario 5 take on the value "1" when Person A sends an amount (offers a wage) of £5 (£10), £10 (£15), £15 (£20) and £20 (£25) to Person B, respectively; 0 otherwise. The baseline category is Scenario 1 (Person A sends an amount (offers a wage) of £0 (£5) to Person B). * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Table 3a: Differences in self-reported happiness before and after watching the video-clip across treatments

	Dep. Variable: Happiness before the video clip (Hb)			
	TG condition		GEG condition	
Independent variables	(1a)	(1b)	(2a)	(2b)
H-treatment	0.135	0.218	-0.130	-0.196
	[0.230]	[0.229]	[0.191]	[0.207]
Gender (= 1 if female)		-0.042		-0.069
		[0.233]		[0.192]
Field of study (=1 if economics)		-0.551*		0.201
		[0.301]		[0.243]
Nationality (= 1 if British)		-0.160		0.278
		[0.222]		[0.208]
Constant	4.833***	4.967***	5.130***	5.035***
	[0.184]	[0.261]	[0.140]	[0.191]
R-squared	0.003	0.029	0.004	0.034
	Dep. Variable: Happiness after the video clip (Ha)			
Independent variables	(1a)	(1b)	(2a)	(2b)
H-treatment	0.940***	0.948***	0.827***	0.784***
	[0.229]	[0.230]	[0.243]	[0.261]
Gender (= 1 if female)		0.069		0.247
		[0.249]		[0.233]
Field of study (=1 if economics)		-0.409		-0.209
		[0.365]		[0.317]
Nationality (= 1 if British)		0.102		0.288
		[0.210]		[0.269]
Constant	5.028***	5.000	4.870***	4.648
	[0.191]	[0.267]	[0.181]	[0.211]
R-squared	0.134	0.152	0.090	0.106

	Dep. Variable: Net effect of the video clip on happiness (Ha-Hb)			
Independent variables	(1a)	(1b)	(2a)	(2b)
H-treatment	0.806***	0.729***	0.956***	0.980***
	[0.182]	[0.180]	[0.234]	[0.233]
Gender (= 1 if female)		0.111		0.316
		[0.251]		[0.214]
Field of study (=1 if economics)		0.142		-0.410
		[0.372]		[0.278]
Nationality (= 1 if British)		0.262		0.010
		[0.184]		[0.261]
Constant	0.194	0.034	-0.259	-0.388**
	[0.130]	[0.282]	[0.185]	[0.176]
R-squared	0.144	0.158	0.127	0.157
N	117	117	120	120

Note: OLS estimates. Robust standard errors are presented in square brackets. The dependent variable Hb (Ha) denotes the self-reported level of happiness before (after) the video clip is shown; whereas, the dependent variable Ha – Hb indicates the net effect of the video clip on happiness. The independent variable "H-treatment" takes on the value 1 if the "Happy" video-clip is shown and 0 if the "Neutral" video-clip is shown. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

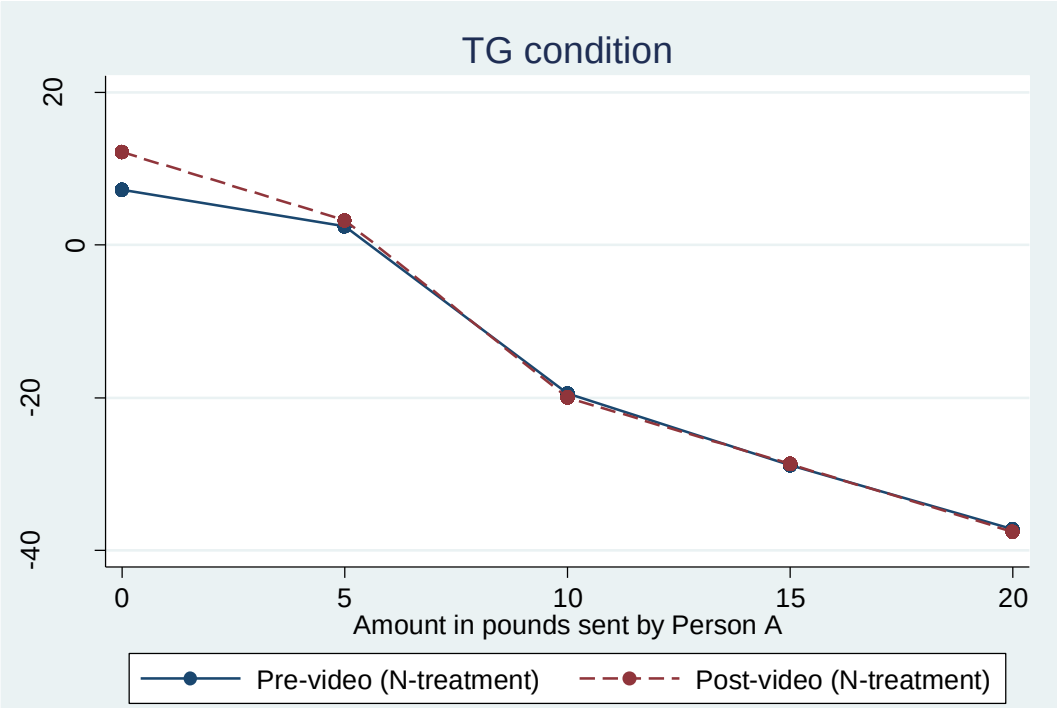
Table 3b: Differences in self-reported contentment before and after watching the video-clip across treatments

	Dep. Variable: Contentment before the video clip (Cb)			
	TG condition		GEG condition	
Independent variables	(1a)	(1b)	(2a)	(2b)
H-treatment	0.262	0.077	0.202	-0.114
	[0.289]	[0.288]	[0.276]	[0.278]
Gender (= 1 if female)		0.213		-0.480*
		[0.296]		[0.264]
Field of study (=1 if economics)		-0.058		0.028
		[0.373]		[0.357]
Nationality (= 1 if British)		0.769**		1.059***
		[0.303]		[0.270]
Constant	4.389***	4.044***	4.222***	4.119***
	[0.209]	[0.316]	[0.212]	[0.287]
R-squared	0.007	0.063	0.005	0.171
	Dep. Variable: Contentment after the video clip (Ca)			
Independent variables	(1a)	(1b)	(2a)	(2b)
H-treatment	0.614*	0.390	0.611*	0.189
	[0.314]	[0.295]	[0.312]	[0.312]
Gender (= 1 if female)		0.310		-0.203
		[0.319]		[0.288]
Field of study (=1 if economics)		-0.369		-0.537
		[0.437]		[0340]
Nationality (= 1 if British)		1.024***		1.563***
		[0.316]		[0.295]
Constant	4.370***	3.926***	4.056***	3.690***
	[0.220]	[0.363]	[0.241]	[0.330]
R-squared	0.032	0.128	0.032	0.226

	Dep. Variable: Net effect of the video clip on contentment (Ca-Cb)			
Independent variables	(1a)	(1b)	(2a)	(2b)
H-treatment	0.352*	0.314	0.409	0.304
	[0.190]	[0.208]	[0.252]	[0.255]
Gender (= 1 if female)		0.097		0.277
		[0.214]		[0.247]
Field of study (=1 if economics)		-0.311		-0.564
		[0.293]		[0.385]
Nationality (= 1 if British)		0.255		0.505**
		[0.208]		[0.244]
Constant	-0.019	-0.118	-0.167	-0.429
	[0.131]	[0.211]	[0.209]	[0.286]
R-squared	0.028	0.060	0.023	0.073
N	117	117	120	120

Note: OLS estimates. Robust standard errors are presented in square brackets. The dependent variable Cb (Ca) denotes the self-reported level of contentment before (after) the video clip is shown; whereas, the dependent variable Ca – Cb indicates the net effect of the video clip on contentment. The independent variable "H-treatment" takes on the value 1 if the "Happy" video-clip is shown and 0 if the "Neutral" video-clip is shown. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Figure 3: The mean moral evaluation function before and after the video-clip of the TG condition



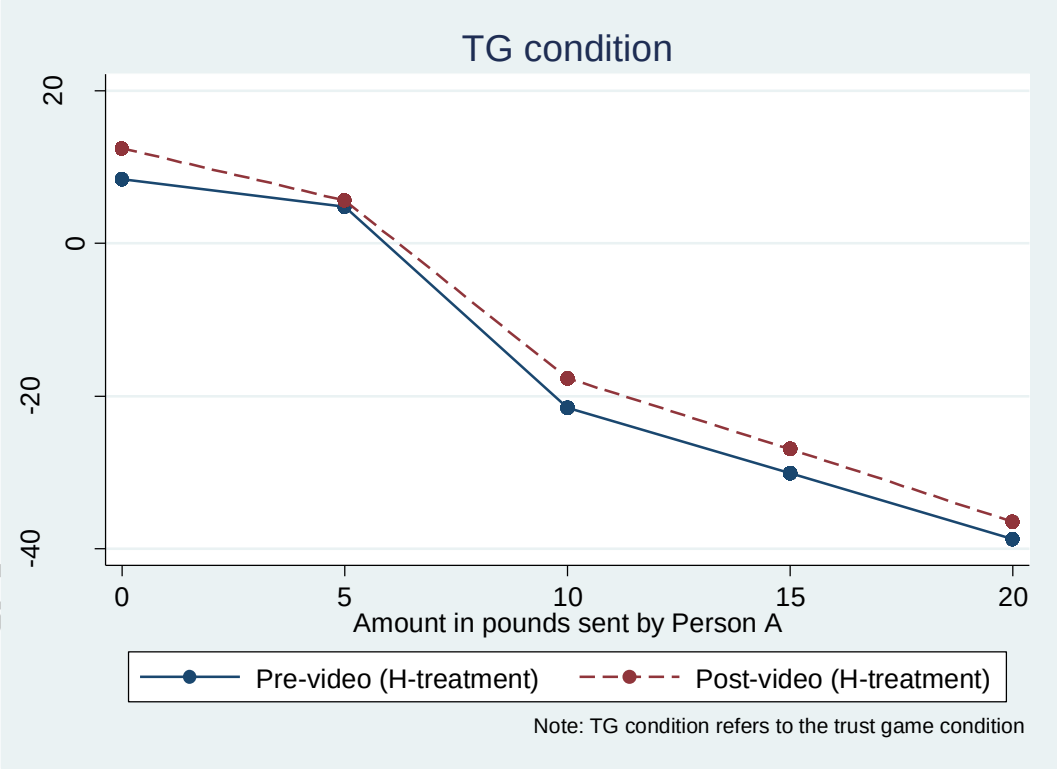
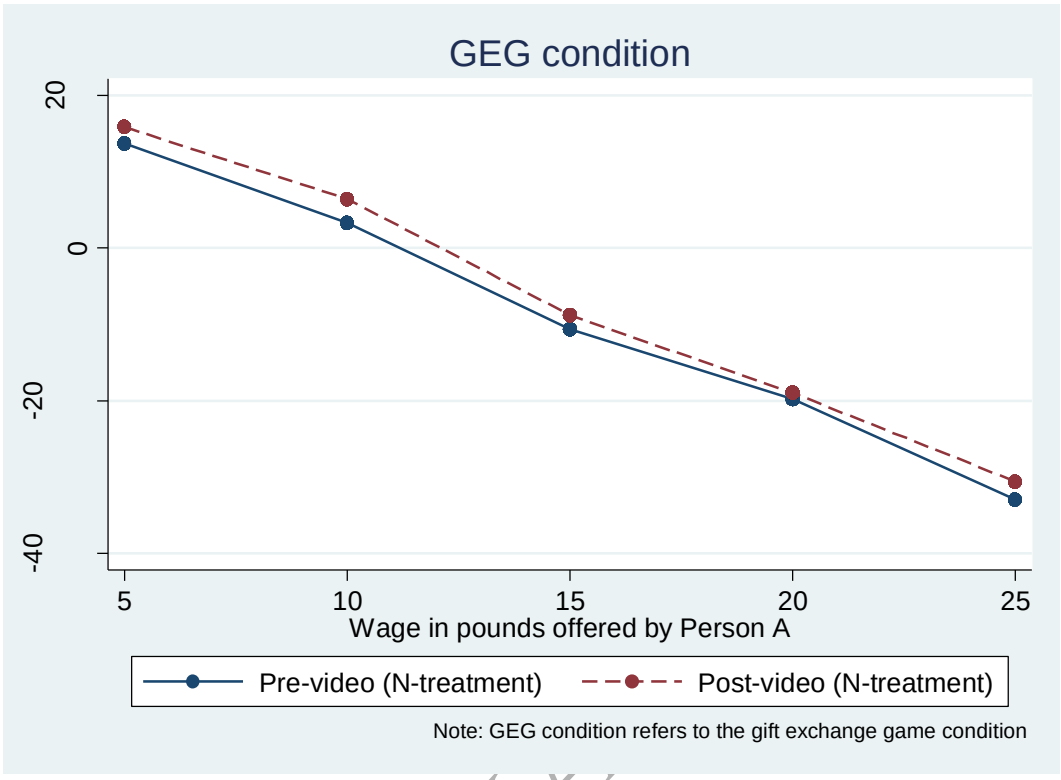


Table 4: Average moral ratings in the TG condition for each scenario and treatment

N-treatment					
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Pre-video	7.259	2.481	-19.463	-28.852	-37.241
Post-video	12.185	3.241	-19.981	-28.704	-37.537
p-value	0.106	0.312	0.396	0.491	0.977
H-treatment					
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Pre-video	8.429	4.841	-21.524	-30.111	-38.778
Post-video	12.476	5.635	-17.651	-26.952	-36.460
p-value	0.115	0.231	0.002	0.011	0.135

Note: p-values from a two-sided Wilcoxon signed-rank test are reported.

Figure 4: The mean moral evaluation function before and after the video-clip of the GEG condition



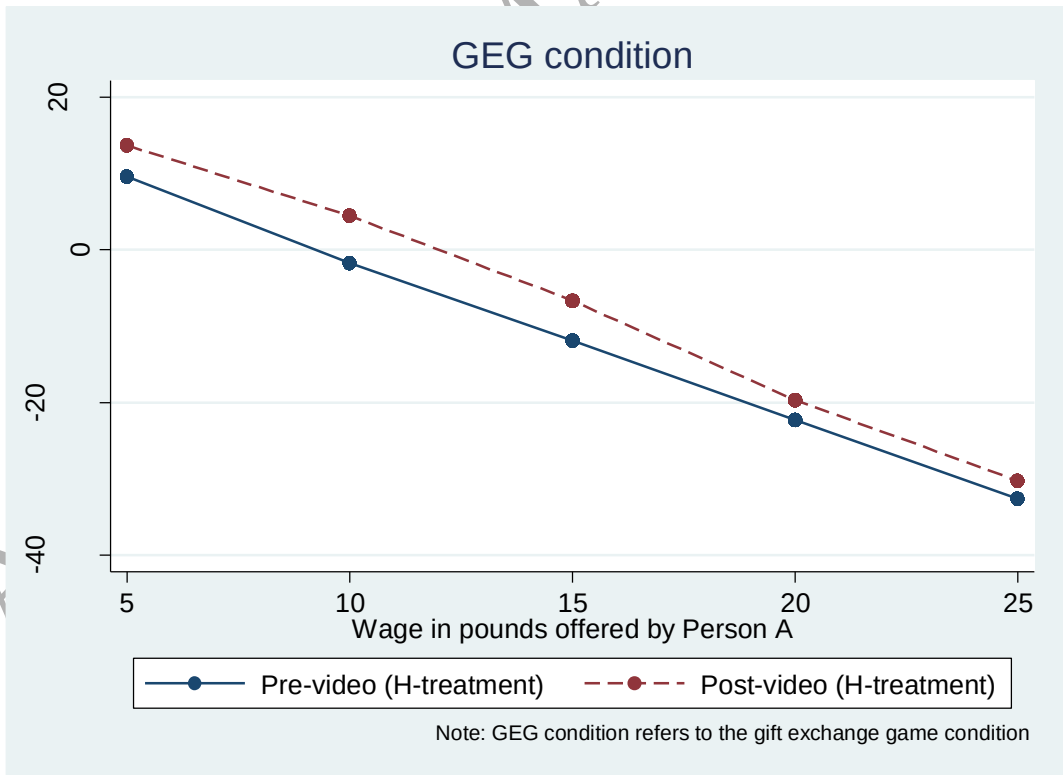


Table 5: Average moral ratings in the GEG condition for each scenario and treatment

N-treatment					
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Pre-video	13.741	3.315	-10.593	-19.778	-32.944
Post-video	15.852	6.426	-8.796	-18.963	-30.574
p-value	0.022	0.024	0.332	0.570	0.569
H-treatment					
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Pre-video	9.591	-1.712	-11.924	-22.318	-32.621
Post-video	13.682	4.455	-6.652	-19.667	-30.273
p-value	0.002	0.000	0.003	0.005	0.227

Note: p-values from a two-sided Wilcoxon signed-rank test are reported.

Table 6: Differences in moral judgments and differences in positive emotions the TG condition – Regression results

	Dep. Variable: Difference in Moral Judgments (before and after the video clip)							
	N-treatment				H-treatment			
Independent variables	TG condition (1a)	TG condition (1b)	TG condition (1c)	TG condition (1d)	TG condition (2a)	TG condition (2b)	TG condition (2c)	TG condition (2d)
Scenario 2	-4.167	-4.167	-4.167	-4.167	-3.254	-3.254	-3.254	-3.254
	(3.981)	(3.982)	(3.986)	(3.985)	(2.578)	(2.651)	(2.589)	(2.645)
Scenario 3	-5.444*	-5.444*	-5.444*	-5.444*	-0.175	-0.175	-0.175	-0.175
	(3.250)	(3.248)	(3.243)	(3.247)	(2.314)	(2.340)	(2.317)	(2.321)
Scenario 4	-4.778	-4.778	-4.778	-4.778	-0.889	-0.889	-0.889	-0.889
	(2.935)	(2.934)	(2.945)	(2.944)	(2.088)	(2.137)	(2.087)	(2.108)
Scenario 5	-5.222*	-5.222*	-5.222*	-5.222*	-1.730	-1.730	-1.730	-1.730
	(2.974)	(2.973)	(2.989)	(2.994)	(2.073)	(2.117)	(2.061)	(2.084)
Difference in Happiness	0.126		-0.390		2.944***		2.889***	
	(0.656)		(0.774)		(0.766)		(0.818)	
Difference in Contentment		0.008		-0.320		1.278**		1.181**
		(0.864)		(0.976)		(0.591)		(0.564)
Gender (= 1 if female)			-3.779*	-3.608*			1.212	3.000*
			(2.122)	(1.948)			(1.645)	(1.549)
Field of study (=1 if economics)			-2.443	-2.435			1.378	3.955**
			(2.421)	(2.428)			(1.478)	(1.648)
Nationality (= 1 if British)			0.261	0.495			-1.893	-0.242
			(2.289)	(2.404)			(1.280)	(1.244)
Constant	4.901*	4.926*	7.650**	7.392**	1.104	3.621**	1.099	1.076
	(2.751)	(2.716)	(3.320)	(3.097)	(1.776)	(1.821)	(2.190)	(2.145)
R-squared	0.017	0.017	0.032	0.032	0.072	0.024	0.084	0.046
N	270	270	270	270	315	315	315	315

Note: OLS estimates. Robust standard errors are presented in square brackets. The dependent variable "Difference in Moral Judgments" denotes the moral rating that subjects assigned in a given scenario after the video clip minus the moral rating that subjects assigned in the same scenario before the video clip. The independent variables Scenario 2, Scenario 3, Scenario 4 and Scenario 5 take on the value "1" when Person A sends an amount (offers a wage) of £5 (£10), £10 (£15), £15 (£20) and £20 (£25) to Person B, respectively; 0 otherwise. The baseline category is Scenario 1 (Person A sends an amount (offers a wage) of £0 (£5) to Person B). * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Table 7: Differences in moral judgments and differences in positive emotions in the GEG condition – Regression results

	Dep. Variable: Difference in Moral Judgments (before and after the video clip)							
	N-treatment				H-treatment			
Independent variables	GEG condition (1a)	GEG condition (1b)	GEG condition (1c)	GEG condition (1d)	GEG condition (2a)	GEG condition (2b)	GEG condition (2c)	GEG condition (2d)
Scenario 2	1.000	1.000	1.000	1.000	2.076	2.076	2.076	2.076
	(2.135)	(2.011)	(2.239)	(2.0.83)	(1.999)	(2.009)	(2.010)	(2.014)
Scenario 3	-0.315	-0.315	-0.315	-0.315	1.182	1.182	1.182	1.182
	(2.123)	(2.096)	(2.109)	(2.083)	(2.142)	(2.136)	(2.142)	(2.139)
Scenario 4	-1.296	-1.296	-1.296	-1.296	-1.439	-1.439	-1.439	-1.439
	(2.522)	(2.536)	(2.479)	(2.500)	(1.826)	(1.845)	(1.829)	(1.839)
Scenario 5	0.259	0.259	0.259	0.259	-1.742	-1.742	-1.742	-1.742
	(3.120)	(3.179)	(3.042)	(3.137)	(1.844)	(1.856)	(1.897)	(1.903)
Difference in Happiness	-2.168*		-2.414*		0.629		0.261	
	(1.253)		(1.223)		(0.676)		(0.704)	
Difference in Contentment		0.695		0.283		0.700		0.503
		(0.790)		(0.790)		(0.468)		(0.458)
Gender (= 1 if female)			3.479**	3.501**			3.391**	3.347***
			(1.513)	(1.595)			(1.336)	(1.223)
Field of study (=1 if economics)			-4.805*	-2.608			-0.091	-0.165
			(2.865)	(2.129)			(2.018)	(2.005)
Nationality (= 1 if British)			4.608**	4.377*			-0.203	-0.362
			(1.933)	(2.336)			(1.309)	(1.342)
Constant	1.549	2.227	-1.547	-1.167	3.652***	3.921***	2.451	2.636*
	(1.521)	(1.416)	(1.987)	(2.019)	(1.340)	(1.364)	(1.536)	(1.582)
R-squared	0.045	0.008	0.087	0.037	0.021	0.021	0.042	0.043
N	270	270	270	270	330	330	330	330

Note: OLS estimates. Robust standard errors are presented in square brackets. The dependent variable "Difference in Moral Judgments" denotes the moral rating that subjects assigned in a given scenario after the video clip minus the moral rating that subjects assigned in the same scenario before the video clip. The independent variables Scenario 2, Scenario 3, Scenario 4 and Scenario 5 take on the value "1" when Person A sends an amount (offers a wage) of £5 (£10), £10 (£15), £15 (£20) and £20 (£25) to Person B, respectively; 0 otherwise. The baseline category is Scenario 1 (Person A sends an amount (offers a wage) of £0 (£5) to Person B). * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Appendix A – Additional Regression Analysis

Table A.1: Emotions and moral judgments for each condition before the video clip was shown – Regression results

	Dep. Variable: Moral Judgment (before the video was shown)							
Independent variables	TG condition (1a)	TG condition (1b)	TG condition (1c)	TG condition (1d)	GEG condition (2a)	GEG condition (2b)	GEG condition (2c)	GEG condition (2d)
Amount sent by Person A	-2.504*** (0.133)	-2.504*** (0.133)	-2.504*** (0.132)	-2.504*** (0.132)				
Wage offered by Person A					-2.204*** (0.129)	-2.204*** (0.129)	-2.204*** (0.128)	-2.204*** (0.128)
Happiness	1.531** (0.767)		1.311* (0.772)		-0.078 (0.836)		0.120 (0.834)	
Contentment		-0.611 (0.540)		-0.284 (0.558)		0.847 (0.557)		1.419** (0.590)
Gender (= 1 if female)			0.482 (1.995)	0.514 (1.998)			-3.085* (1.771)	-2.429 (1.778)
Field of study (=1 if economics)			-3.959* (2.233)	-4.629** (2.209)			0.320 (2.594)	0.274 (2.589)
Nationality (= 1 if British)			-5.221*** (1.855)	-5.125*** (1.907)			-4.533** (1.748)	-5.967*** (1.804)
Constant	2.224 (4.245)	12.502*** (2.956)	5.738 (4.797)	13.499*** (3.337)	22.796*** (4.817)	18.729*** (3.187)	25.663*** (4.853)	20.493*** (3.404)
R-squared	0.398	0.395	0.409	0.406	0.356	0.358	0.364	0.370
N	585	585	585	585	600	600	600	600

Note: OLS estimates. Robust standard errors are presented in square brackets. In all regressions, the dependent variable is "Moral Judgment" and denotes the moral rating that subjects assigned in a given scenario. The independent variable "Amount sent by Person A" ("Wage offered by Person A") takes the value "x" when Person A sends an amount (offers a wage) of £x, where "x" takes on the values 0 (5), 5 (10), 10 (15), 15 (20), 20 (25). * p < 0.1; ** p < 0.05; *** p < 0.01.

Table A.2: Differences in moral judgments and differences in positive emotions the TG condition – Regression results

	Dep. Variable: Difference in Moral Judgments (before and after the video clip)							
	N-treatment				H-treatment			
Independent variables	TG condition (1a)	TG condition (1b)	TG condition (1c)	TG condition (1d)	TG condition (2a)	TG condition (2b)	TG condition (2c)	TG condition (2d)
Amount sent by Person A	-0.221	-0.221	-0.221	-0.221	-0.022	-0.022	-0.022	-0.022
	(0.134)	(0.134)	(0.134)	(0.135)	(0.093)	(0.093)	(0.092)	(0.094)
Difference in Happiness	0.126		-0.390		2.944***		2.889***	
	(0.665)		(0.780)		(0.764)		(0.814)	
Difference in Contentment		0.008		-0.320		1.278**		1.181**
		(0.870)		(0.976)		(0.594)		(0.568)
Gender (= 1 if female)			-3.779*	-3.608*			1.212	2.300*
			(2.108)	(1.937)			(1.638)	(1.543)
Field of study (=1 if economics)			-2.443	-2.435			1.378	3.955**
			(2.456)	(2.456)			(1.470)	(1.652)
Nationality (= 1 if British)			0.261	0.495			-1.893	-0.242
			(2.283)	(2.391)			(1.280)	(1.245)
Constant	3.190	3.215	5.939**	5.681	0.113	2.631*	0.108	0.085
	(2.096)	(2.047)	(2.896)	(2.592)	(1.380)	(1.361)	(1.757)	(1.736)
R-squared	0.011	0.011	0.025	0.025	0.063	0.014	0.075	0.036
N	270	270	270	270	315	315	315	315

Note: OLS estimates. Robust standard errors are presented in square brackets. The dependent variable "Difference in Moral Judgments" denotes the moral rating that subjects assigned in a given scenario after the video clip minus the moral rating that subjects assigned in the same scenario before the video clip. The independent variable "Amount sent by Person A" takes the value "x" when Person A sends an amount of £x, where "x" takes on the values 0, 5, 10, 15, 20. * p < 0.1; ** p < 0.05; *** p < 0.01.

Table A.3: Differences in moral judgments and differences in positive emotions in the GEG condition – Regression results

	Dep. Variable: Difference in Moral Judgments (before and after the video clip)							
	N-treatment				H-treatment			
Independent variables	GEG condition (1a)	GEG condition (1b)	GEG condition (1c)	GEG condition (1d)	GEG condition (2a)	GEG condition (2b)	GEG condition (2c)	GEG condition (2d)
Wage offered by Person A	-0.036 (0.134)	-0.036 (0.136)	-0.036 (0.131)	-0.036 (0.135)	-0.140* (0.083)	-0.140* (0.084)	-0.140* (0.085)	-0.140 (0.083)
Difference in Happiness	-2.168* (1.246)		-2.414** (1.216)		0.629 (0.681)		0.261 (0.708)	
Difference in Contentment		0.695 (0.787)		0.283 (0.787)		0.700 (0.472)		0.503 (0.461)
Gender (= 1 if female)			3.479** (1.512)	3.501** (1.593)			3.391** (1.336)	3.347*** (1.224)
Field of study (=1 if economics)			-4.805* (2.847)	-2.608 (2.113)			-0.091 (1.990)	-0.165 (1.976)
Nationality (= 1 if British)			4.608** (1.922)	4.377* (2.323)			-0.203 (1.313)	-0.362 (1.347)
Constant	2.012	2.690	-1.084	-0.705	5.768	6.036	4.566	4.752

	(1.933)	(1.824)	(2.493)	(2.658)	*** (1.476)	*** (1.447)	*** (1.589)	*** (1.605)
R-squared	0.043	0.006	0.084	0.035	0.012	0.012	0.033	0.034
N	270	270	270	270	330	330	330	330

Note: OLS estimates. Robust standard errors are presented in square brackets. The dependent variable "Difference in Moral Judgments" denotes the moral rating that subjects assigned in a given scenario after the video clip minus the moral rating that subjects assigned in the same scenario before the video clip. The independent variable "Wage offered by Person A" takes the value "x" when Person A offers a wage of £x, where "x" takes on the values 5, 10, 15, 20, 25. * p < 0.1; ** p < 0.05; *** p < 0.01.