Firms operating under competitive conditions must often choose whether to take a profitable but ethically ambiguous business opportunity, such as building the wall on the U.S. border with Mexico, or to forgo the opportunity. Since a competitor is likely do the job in the latter case, forgoing does not make a difference for the ultimate outcome. The wall will be built, except that profits accrue to a less scrupulous competitor. In this paper, we study the conditions under which people use the argument that “if I don’t do it, someone else will.” From a deontological point of view, this replacement excuse does not provide absolution because an action is judged with respect to its adherence to a rule, irrespective of whether an action or its omission makes a difference for the ultimate outcome. In contrast, from a utilitarian point of view, the replacement excuse does provide absolution for any action because outcomes not actions matter for ethical assessment. Our experimental data show a clear behavioral pattern. If a social norm exists classifying the action under consideration as unambiguously immoral, subjects do not use the replacement excuse—even when the omission of the action is likely to be replaced by another subject. But if no social norm exists, subjects more often take an ethically ambiguous action when an omission of the action can be replaced by another subject, compared to a condition where replacement is not possible. By showing how social norms can outweigh the forces of competition, our paper informs the long-standing debate on the effect of markets on morals.

Keywords: Replacement excuse, moral behavior, competition, markets, social norms, experimental data

JEL classification: C91, D03, D63

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“If we want to stop the defence industry operating in this country we can do so, and the result incidentally will be that someone else supplies the arms that we supply.”—Tony Blair

1. Introduction

One of the founders of the Chicago school, Frank H. Knight, wrote in an early paper that “it must be conceded that the lines along which a competitive economic order tends to form character are often far from being ethically ideal” (1923, p. 591). The possibility that competitive markets erode moral standards is debated ever since (e.g., Bowles 1998; Shleifer 2004; Satz 2010; Sandel 2012; Falk and Szech 2013; Bartling et al. 2015). Data on the causal effect of competitive environments on moral behavior is however still scarce. In this paper, we study a key feature of competitive markets: the possible replacement of the omission of a profitable but ethically questionable business transaction by a less scrupulous competitor. The replacement excuse, that is, the argument that “if I don’t do it, someone else will,” has intuitive appeal and might lead market actors to leave behind their moral standards. Tony Blair for instance, then UK’s prime minister, justified controversial arms exports in the above quotation by claiming that someone else would have stepped in, had not the UK supplied the arms.

From the point of view of consequentialist or utilitarian ethics, the replacement argument provides justification for any action because it is only outcomes that matter for ethical assessment. Given that some outcome is going to result anyway (say, an authoritarian regime receives arms), taking the action leading to it (delivering the arms) does not change or worsen the outcome. Hence, it is not ethically wrong. Deontological ethics, in contrast, judges an action with respect to its adherence to a rule or principle. The fact that an undesirable outcome will come about anyway (the regime is in possession of the arms) does not render the action that actually implements the outcome ethically right: “If we accept this as a justification, it is hard to see what acts, however otherwise wicked, could not be defended in the same way” (Glover and Scott-Taggart 1975). In this paper, we take a positive approach—eliciting actual behavior of economic actors instead of making normative statements—and study experimentally when the replacement excuse undermines moral behavior and when it does not.

Studying whether inherent features of competitive markets, such as the possible replacement of one firm’s ethical course of action by a less conscientious competitor, induce all

1 Tony Blair, July 25, 2002: http://webarchive.nationalarchives.gov.uk/20100105053147/number10.gov.uk/page3000
market participants to abandon their moral behaviors is of increasing importance because the “reach of markets, and market-oriented thinking, into aspects of life traditionally governed by nonmarket norms is one of the most significant developments of our time” (Sandel 2012, p. 7). If competitive markets do not only allocate goods and services in an efficient way (at best) but also, as a side effect, crowd out morals, then the traditional economic analysis of the welfare properties of market mechanisms—focusing on allocative efficiency under the assumption of given (moral) preferences—will be incomplete.

Our leading example on arms trade might suggest that competition generally undermines ethical behavior because a single ruthless competitor, or latent market entry of such a competitor, suffices to trigger the replacement excuse. But behavior consistent with ethical conduct is often observed in competitive markets. Financial services firms that are dedicated to ethical investment strategies—thereby foregoing potentially more profitable investments in, say, arms manufacturers, tobacco, or fracking—can serve as example (e.g., Sparkes and Cowton 2004). With field data it is, however, difficult to separate true corporate social concern from reputational incentives or from being driven by consumer demand. Observed ethical business practices can thus be compatible with the goal of profit-maximization (e.g., Porter and Kramer 2006; Sauer 1997; Aupperle et al. 1985). Likewise, consumers investing in ethical funds might hold the belief that these investments are more sustainable and perform better in the long-run. This renders it difficult to identify moral behaviors with naturally occurring field data and, in particular, to study when the replacement excuse weakens or eliminates moral behaviors and when it does not. Our experimental approach allows us to study these questions in the laboratory, while controlling for confounding factors.

In this paper, we seek to identify one important mechanism that determines when people use the replacement excuse, i.e. when they take actions (such as selling arms to an authoritarian regime or building a wall on the U.S. border to Mexico) that they would not take absent possible replacement by a competitor and when they refrain from these actions—even if it is likely that a competitor will step in. We test the hypothesis that not only outcomes matter for a player’s utility but also his actions. If only outcomes mattered, an economic actor would always prefer to make a profitable but unethical business transaction himself rather than let someone else make that transaction. Clearly, own profits would be higher, while other dimensions of the outcome space (the regime in possession of the arms or the completion of the U.S-Mexico border wall) are unchanged. But if people also derive (dis)utility from their actions (being the person who sells the arms or who builds the wall), then an economic actor will not necessarily make the transaction,
even if refraining from it will make no difference—except that someone else would enjoy the monetary gains from the transaction. More specifically, we test the hypothesis that people incur a utility loss from taking an action that does not conform to the prevailing social norms of acceptable and moral behavior (e.g., Lindbeck 1997; López-Pérez 2008; Krupka and Weber 2013). The source of this utility cost can be self-image or identity concerns (e.g., Akerlof and Kranton 2000, 2005; Bodner and Prelec 2003; Bénabou and Tirole 2004, 2006; Köszegi 2006, Mazar et al. 2008), social image concerns (e.g., Akerlof 1980; Bernheim 1994; Andreoni and Bernheim 2009; Ariely et al. 2009), or the “cold prickle,” rather than the “warm glow,” of taking an action that does not conform to prevailing social norms (Andreoni 1989, 1990, 1995). Hence, even if an unethical outcome is likely to come about anyway, a “principled” economic actor might not want to be the person who implements that outcome. The possibility that people experience disutility from breaking a social norm of moral behavior thus constitutes a potentially powerful mechanism limiting the extent to which the replacement excuse undermines moral behavior in competitive environments.

In Sections 2 to 4 we report data from a series of sequential games, in which players face binary choices between realizing a monetary gain and forgoing it for an altruistic reason. Our games differ in the applicable social norm, i.e., in the moral appropriateness of realizing the monetary gain. Moreover, within each game, we exogenously manipulate the number of players who can realize the monetary gain subsequent to a first player’s choice to forgo this monetary gain, thereby undoing, i.e., “replacing,” the first player’s altruistic deed. Our experimental treatments allow studying the effect of the probability of replacement on behavior and how this effect interacts with the “moral content” of the choice options. We draw conclusions in Section 5.

2. Donation Game

2.1 Experimental Design

We study the effect of the availability of the replacement excuse on moral behavior in a simple donation game. Subjects make a binary choice between either receiving a payment of 20 CHF (about 21 USD) or having the experimenter transfer 60 CHF to FAIRMED, a Swiss charity, to finance the surgery of a leprosy patient in India. The experimental instructions provided basic facts about the donation. Subjects were informed that leprosy is an infectious disease that causes damage of nerve cells and blockage of arteries and veins, which can lead to bodily disfigurement. Although
the disease can be cured with medical treatment, many leprosy victims suffer from a high degree of stigmatization due to disfigurement. Often small surgical interventions can significantly reduce the scope of disfigurement. Almost 60 percent of the global leprosy cases occur in India. Due to the prevalence of poverty, funding an operation—which would allow for a life in dignity—is not possible for most of the victims with disfigurement.

We conducted two experimental conditions of the donation game, as shown in Figure 1. The **baseline condition** is an individual decision task. A subject (player 1) makes the individual decision to either take 20 CHF or having the experimenter finance the surgery. The **replacement condition** is a three-player game. Subjects are randomly placed into groups of three and assigned the role of either player 1, 2, or 3. At most one player can take the 20 CHF and at most one surgery is financed per group. Players decide sequentially whether to take the 20 CHF or not. If a player decides to take the 20 CHF, the surgery is not financed and the game ends. The surgery is thus financed only if first player 1, then player 2, and finally player 3 forgo to take the 20 CHF.²

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² We used the strategy method for players 2 and 3 and asked them to indicate whether they would take the money if they could make a choice, i.e., if the preceding player(s) did not take the money already.
To check the effectiveness of our experimental manipulation we elicited beliefs about the replacement probability in the replacement condition. We implemented a between-subjects design to avoid the potential confound of ex-post rationalization (a subject states a high replacement probability to justify having taken the money). The replacement probability is zero, by design, in the baseline condition. Our experimental manipulation is thus successful if subjects expect a positive replacement probability in the replacement condition. Subjects in our belief elicitation sessions received the instructions and control questions for the replacement condition. But instead of making the choice between money and surgery, we asked the subjects to provide their beliefs about whether player 1’s choice to forgo taking the money will be replaced. That is, we asked the belief about the probability that either player 2 or 3 take the money when player 1 does not take it. Subjects had to enter a number between 0 and 100 to indicate their beliefs and they earned 10 CHF if the stated belief was no further away than 5 percentage points from the true value.

We also checked whether subjects perceived the decision between money and surgery as a moral decision because we are interested in studying the effect of the replacement excuse on moral behavior. To measure if the donation game has a moral dimension, we elicited the social norm that applies to the decision to take the money, using a coordination game as measurement tool (e.g., Houser and Xiao 2011; Krupka and Weber 2013). We again implemented a between-subjects design and asked impartial third parties, either for the baseline condition or for the replacement condition, whether player 1’s choice to take the 20 CHF would be rated by most people as “socially appropriate” and “consistent with moral or proper social behavior,” or as “socially inappropriate” and “inconsistent with moral or proper social behavior,” or as “neutral.”

We asked subjects to rate the appropriateness of the choice to take the money on a five-point scale ranging from “very socially inappropriate” and “somewhat socially inappropriate,” over “neutral,” to “somewhat socially inappropriate” and “very socially inappropriate.” Importantly, we did not ask subjects to provide the rating they believe to be “right” but the rating they believe will be the most frequently chosen one by the other subjects in the session. Subjects received the instructions and control questions for the respective condition of the donation game. But instead of making the choice between money and surgery, we asked subjects to provide their guesses about the most frequently given response. Subjects received a bonus of 10 CHF if their guesses matched the modal response.

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3 Since our main interest is the choices of players 1, we only measure the norm that applies to player 1’s decision.
4 The design follows Krupka and Weber (2013), except that we added a neutral response option.
2.2 Procedural Details

All sessions took place at the laboratory of the Department of Economics at the University of Zurich. We implemented the study with z-Tree and h-Root (Fischbacher 2007; Block et al. 2014). 432 subjects participated in the study. Subjects were students from the University of Zurich and the ETH Zurich. We conducted eight sessions of the donation game, with 67 subjects in the baseline condition and 177 subjects, i.e., 59 in each role, in the replacement condition. Sessions lasted about 45 minutes and subjects earned on average CHF 19.75, including a show-up fee of 15 CHF. We elicited beliefs and norms at the end of other unrelated experimental sessions. No subject participated in our study more than once. We have 62 observations for the measurement of the social norm for each of the two conditions and elicited beliefs in the replacement condition from 64 subjects. These measurements took about 15 minutes and subjects earned on average 4.10 CHF. The experimental instructions for all games and measurements are in the appendix.

2.3 Hypothesis

The key feature of the experimental design is that player 1’s decision to forgo the 20 CHF cannot be replaced in the baseline condition but it can be replaced by either player 2 or, if not by player 2, then by player 3 in the replacement condition. The design thus allows studying the effect of the replacement excuse by comparing the fraction of players 1 who take the money (“take-rate”) in the baseline condition to the fraction of players 1 who take the money in the replacement condition. This gives rise to our main hypothesis:

**Hypothesis 1 (Replacement Excuse Erodes Morals in the Donation Game):** The fraction of players 1 who take the money is higher in the replacement condition than in the baseline condition.

2.4 Results

Panel A of Figure 2 shows that the take-rates of players 1 are almost identical in the baseline condition and in the replacement condition, 23.9 percent (16 of 67) and 25.4 percent (15 of 59), respectively (p=0.502, Fischer exact test, one-sided). We observe these data despite the fact the replacement probability increases from 0 (by design) in the baseline condition to 0.51 in the replacement condition. The take-rates of players 2 and 3 in the replacement condition are of the same size, 30.5 percent (18 of 59) and 28.8 percent (17 of 59), respectively. We cannot reject that
the take-rate is identical across both conditions and all player types (Pearson’s chi squared test, p=0.832). Note that players 2 could invoke the replacement excuse as well as their choice to forgo the 20 CHF might be replaced by player 3. In contrast, the choice of players 3 to forgo taking the money cannot be replaced, as is the case for players 1 in the baseline condition.

**FIGURE 2. TAKE-RATES AND SOCIAL NORM IN THE DONATION GAME**

**Notes:** Panel A shows the fraction of first movers who took the money in the Baseline Condition (B1/1) and the Replacement Condition (B1/3). Error bars depict 95% confidence intervals. The dotted line depicts the probability that at least one of the subsequent players takes the money if the first mover does not take it. Panel B shows the distribution of norm ratings for the decision of a first mover to take the money in the donation task. The data are pooled across both treatments. The ratings are coded as follows: -2 “very socially inappropriate”, -1 “somewhat socially inappropriate”, 0 “neutral: neither socially inappropriate nor socially appropriate, 1 “somewhat socially appropriate”, 2 “very socially appropriate”.

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To exclude the possibility that our experimental treatment is ineffective, we provide a manipulation check and measure whether subjects in the replacement condition indeed believe that the replacement probability for player 1 is positive. We find that 75 percent of subjects state a strictly positive belief. Hence, the large majority of subjects in our belief elicitation task expect that player 1’s decision to forgo taking the money will be replaced with strictly positive probability. Subjects, however, tend to underestimate the replacement probability; the average belief is 0.23, while the true value is 0.51. We summarize our findings in our first result.

**Result 1 (Moral Steadfastness in the Donation Game):** Subjects do not use the replacement excuse in the donation game. The possibility that a player’s decision to forgo taking the money can be replaced by subsequent players in the replacement condition does not result in take-rates that are different from the baseline condition, where replacement is not possible.

We finally verify that the choice between taking 20 CHF and enabling a leprosy surgery in India is indeed perceived as a moral decision. Panel B of Figure 2 displays the results of the elicitation of the social norm that applies to taking the money, separately for both conditions. The rating ranges from “very socially inappropriate” over “neutral” to “very social appropriate.” Averaged over both conditions, 97.6 percent of the subjects rate the decision to take the money as either “somewhat socially inappropriate” or “very socially inappropriate.” The latter is the modal choice in both conditions. No subject chose “somewhat” or “very socially appropriate” in either condition. The distribution of the ratings is virtually identical in both conditions (p=0.7951, Mann Whitney U test). The observation that the same social norm applies in baseline and replacement condition is consistent with Result 1 as it shows that possible replacement by subsequent players of the choice to forgo taking the 20 CHF is not accepted as an excuse by impartial third parties. We summarize the measurement of the social norm in the following.

**Result 2 (Donation Game has Moral Dimension):** A strong social norm exists that taking 20 CHF, instead of enabling a leprosy surgery in India, is inconsistent with moral and proper behavior. Almost all subjects rate the decision to take the money

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5 25 percent of subjects stated belief of 5 percent, which could reflect a true belief of 0 percent because subjects receive a bonus of 10 CHF if their stated belief is within 5 percentage points of the true value. The observation that none of the subjects stated a belief of 0 is evidence that subjects understood the incentive structure.
as either “somewhat socially inappropriate” or “very socially inappropriate” in both experimental conditions.

In sum, subjects do not make use of the replacement excuse in our donation game, where a strong social norm exists that taking the 20 CHF is inconsistent with proper and moral behavior. The replacement excuse—that is, the argument that taking the money might not make a difference because a subsequent player might otherwise take the money—does not affect the fraction of subjects taking the money. These data demonstrate that competitive institutions and the associated replacement excuse do not necessarily lead to the erosion of moral behavior.

3. Take Games with and without Punishment

Our Result 1, the non-existence of the replacement effect in the donation game, challenges often-held intuitions. For example, Falk and Szech (2013) write: “This ‘replacement’ logic is a common feature of markets, and it is therefore not surprising that the rhetoric of traders often appeals to the phrase that ‘if I don’t buy or sell, someone else will.’” In the following, we analyze behavior in a different game, with a different subject pool, and different stake sizes to provide robustness checks of Result 1. We want to rule out the possibility that behavior in the donation game is an exception, driven, for instance, by an exceptionally strong social norm that taking the 20 CHF and thereby defeating the leprosy surgery is inconsistent with moral behavior.

3.1 Experimental Design

We conducted a series of simple take games to revisit the question whether the replacement excuse undermines moral behavior. Take Game 1 (TG-1) consists of two players: A and B1, who both start with an endowment of 0.5 USD. Player B1 makes the binary choice to either take away 0.4 USD from player A or to refrain from doing so. Player A cannot take an action. If B1 takes the money, player A’s payoff is 0.1 USD and player B1’s payoff is 0.9 USD. If B1 does not take the money both players receive their endowments of 0.5 USD. Take Game 2 (TG-2) is identical to TG-1 but consists of three players: A, B1, and B2, who all have endowments of 0.5 USD. First, B1 can take away 0.4 USD from A. If B1 does not take the 0.4 USD, then B2 can do so. Take Game 3 (TG-3) is different only in that it consists of four players: A, B1, B2, and B3. If neither B1 nor B2 takes the money, B3 can finally do so.
The important feature of the experimental manipulation of the take game is the variation of the number of players who can replace player B1’s decision to forgo taking the money from player A, i.e., the variation of the replacement probability. The study of the take-rates of players B1 in conditions TG-1, TG-2, and TG-3 allows for a first robustness check of Result 1.

Moreover, we ran three additional conditions of the take games that feature a punishment option for player A. The take games with punishment, TGwP-1, TGwP-2, and TGwP-3, are identical to TG-1, TG-2, and TG-3, respectively, except that player A can spend up to 0.05 USD of his payoff to punish a player B, if that player B took away the money. For each 0.01 USD spent by player A, the payoff of the targeted player B decreases by 0.1 USD. Players B who do not take away money from player A cannot be punished.6

Adding a punishment option for player A serves two goals. First, the take games with punishment provide for a second robustness check of Result 1, in a game where taking the money from player A is less attractive, due to expected punishment. Second, the punishment data allow studying whether the replacement excuse provides “moral absolution” from the viewpoint of the victim. In TGwP-3, for example, do players A consider B1 less worthy of punishment for taking the money than players B3 because the possibility of replacement excuses players B1?

As a manipulation check of the effectiveness of our experimental conditions in the take game, we measured the beliefs that B1’s decision to forgo taking the money will be replaced by B2 in TG-2 or by B2 or B3 in TG-3, respectively. Furthermore, to verify that behavior in the take game has a moral dimension, we elicited the social norms that apply to B1’s decision to take the money from A in each of the three conditions TG-1, TG-2, and TG-3 separately. We used the same methods as in the donation game to measure these beliefs and social norms.7

3.2 Procedural Details

Subjects were recruited on Amazon Mechanical Turk (MTurk), an online marketplace for tasks requiring human intelligence (see, e.g., Horton et al. 2011; Buhrmester et al. 2011). Participation was restricted to U.S. MTurkers with at least 500 completed assignments and minimum approval

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6 We used the strategy method for players B2 and B3 both in the conditions with and without punishment and asked the players to indicate whether they would take the money if they could make a choice. We also used the strategy method for players A in the treatments with punishment. For instance, player A in TGwP-3 made three punishment decisions, one for each player B who could take away the money.

7 We did not measure beliefs and social norms in the conditions with punishment to economize on subjects. No apparent reason exists why the experimental manipulation of adding additional players B operates differently when a punishment option for player A is present or why a different social norm applies in the treatments with punishment.
rating of 95 percent. We implemented the study with the software o-Tree (Chen et al. 2016).
MTurkers who clicked the link to our study were randomized into a condition and role of the take
game or into one of the other measurement tasks. We controlled the subjects’ understanding of the
instructions by asking a set of test questions. Subjects were excluded if they could not provide
correct answers within two attempts. All experimental instructions and test questions are in the
appendix. Overall, 2486 MTurkers participated, i.e., passed the test questions. MTurkers were
randomized into treatments and roles or into the measurement of the norm or belief. We stopped
the data collection once we had at least 100 observations in each cell. Table 1 shows the number of
observations for all conditions and measurement tasks separately. Subject could participate only
once. Each subject received a fixed payment of 0.50 USD and earned a variable payoff on top. The
variable payment in the take games depends on the choices of players B and, if applicable, the
punishment behavior of players A. Subjects in the belief or norm measurement tasks earned 3 USD
on top if their guesses of the norm matched the modal response or if their guesses of the
replacement probability were not further away than 5 percentage points from the true value,
respectively. On average, the MTurkers received a total payment of 1.07 USD and took about 6
minutes to complete the study, translating to an average hourly rate of about 10.70 USD.

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3.3 Hypotheses

Equivalent to the donation games, the key feature of the take games is that player B1’s decision not
to take the 0.4 USD from player A cannot be replaced in TG-1 and TGwP-1, while it can be
replaced by players B2, or B3, in the conditions with replacement. The design thus allows for two
separate tests of the effect of the replacement excuse by comparing the take-rate of players B1 in
TG-1 and TGwP-1 to the take-rates of players B1 in the conditions with replacement.\(^8\) This gives rise to the following hypothesis:

**Hypothesis 2 (Replacement Excuse Erodes Morals in the Take Games):** The fraction of players B1 who take the money from player A, both with and without punishment, is higher in the conditions with replacement than in the conditions without replacement.

The punishment pattern allows for a second, complementary test of whether individuals apply the replacement excuse. Players B might be the less worthy of punishment for taking money from player A, the larger the probability that the alternative choice of not taking the money would have been replaced by a subsequent player B. This gives rise to the next hypothesis:

**Hypothesis 3 (Replacement Excuse Deflects Punishment):** Players B1 are punished less by players A for taking the money than players B2 or B3 in the respective conditions with replacement.

### 3.4 Results

We report the data from the take games without punishment first. Panel A of Figure 3 shows that the take-rates of players B1 are very similar in all three conditions, 68.3 percent (86 of 126) in TG-1, 63.9 percent (69 of 108) in TG-2, and 60.2 percent (65 of 108) in TG-3. If anything, the take-rates are lower in TG-2 and TG-3 than in TG-1, but the differences are not significant (p=0.435, Pearson’s chi-square test). These take-rates arise even though the replacement probability increases from 0 (by design) in TG-1 to 0.69 in TG-2 and 0.89 in TG-3. The take-rates of players B2 in TG-2 and of players B2 and B3 in TG-3 are equally similar, 68.5 percent (74 of 108), 67.6 percent (73 of 108), and 64.8 percent (70 of 108), respectively. We cannot reject that the decisions of players B in all conditions without punishment and in all roles originate from the same distribution (Pearson’s chi square test, p=0.355).

\(^8\) In the appendix we show that the outcome-based, i.e., consequentialist, social preference model of Fehr and Schmidt (1999) predicts that the take-rate of players B1 is higher in conditions TG-2 and TG-3 than in condition TG-1.
Figure 3. Take-Rates and Social Norm in the Take Games

Notes: a) The bars show the fraction of first movers in the take game who took the money from the receiver in the no-replacer (B1/1), 1-replacer (B1/2), and 2-replacer (B1/3) treatments. Error bars depict 95% confidence intervals. The dotted line depicts the probability that the subsequent dictator (in the 1-replacer treatment) or at least one of the two subsequent dictators (in the 2-replacer treatment) takes the money if the first mover does not take it. b) This figure shows the distribution of norm ratings for the decision of a first mover to take the money in the take game. The data are pooled across the no-replacer, 1-replacer, and 2-replacer treatments. The ratings are coded as follows: -2 “very socially inappropriate”, -1 “somewhat socially inappropriate”, 0 “neutral: neither socially inappropriate nor socially appropriate”, 1 “somewhat socially appropriate”, 2 “very socially appropriate”.

The manipulation check reveals that 98.1 percent (102 of 104) and 96.0 percent (96 of 100) of the subjects believe that the replacement probability for player B1 is strictly positive in TG-2.
and TG-3, respectively.\(^9\) The average belief in TG-2, 0.61, is relatively close to the true value, 0.69. However, as in the replacement condition of the donation game, subjects underestimate on average the replacement probability in TG-3. The average belief in TG-3 is 0.65, while the true value is 0.89. Condition TG-3 and the replacement condition of the donation game have in common that two subjects can replace the first-mover’s decision, and it appears more challenging, both for students in the subject pool in Zurich and for MTurkers in the U.S., to estimate the replacement probability in these cases. Nevertheless, our manipulation checks clearly show that the absence of the replacement effect is not driven by unreasonable beliefs about the replacement probability (e.g., the expectation of a replacement probability of zero). In particular, even though replacement beliefs are much higher in the take games than in the donation game, the result that subjects do not make use of the replacement excuse is replicated in the take games.\(^10\) We summarize this finding in the following.

**Result 3 (Moral Steadfastness in the Take Games without Punishment):** Subjects do not use the replacement excuse in the take game. The possibility that subsequent players B can replace an earlier player B’s decision not to take the money from player A does not affect take-rates.

Next we validate that players B face a moral decision in the take games. Panel C of Figure 3 shows the distribution of the social norm evaluations in the three conditions of the take game without punishment. In total, 82 percent of the subjects thought that player B’s decision to take the money from player A is either “very socially inappropriate” or “somewhat socially inappropriate.” The modal response is “somewhat socially inappropriate,” chosen by 46 percent of subjects. There is no significant difference in the norm ratings between TG-1, TG-2, and TG-3 (Kruskal-Wallis

\(^9\) Only 2 of 204 subjects stated a belief of less than 5 percent, indicating that the vast majority of MTurkers understood the incentive structure. 4 subjects stated a belief of 5 percent, which could reflect a true belief of 0 percent.

\(^{10}\) Note that the number of players is not constant between our conditions with and without replacement. While this is a natural feature arising from the fact that the possibility of being replaced comes with the presence of further players, we want to exclude the possibility that simply adding players affects behavior. For example, if B1 is sensitive to the size of the “audience,” this could lead to lower take-rates in TG-2 or TG-3, where B1’s choice is observed by one or two other Bs, than in TG-1, where no other B can observe B1’s choice. To test for the presence of an “audience effect,” we conducted a control condition that is identical to TG-1, except that two passive “spectators” are added, each receiving 0.5 USD and getting informed about B1’s decision. We collected 107 novel observations for B1 in TG-1 and 109 observations for B1 in the new condition with spectators, thus 650 MTurkers participated in the control study in total. The experimental instructions are in the appendix. We find that the take-rates of B1s are not different in the treatments with and without spectators, 56.9 percent (62 of 109) and 61.7 percent (66 of 107), respectively (p=0.281, Fischer exact test, one-sided). We conclude that “audience effects” are not present in our experimental context.
test, $H(2)=3.911$, $p=0.141$). Hence, as in the donation game, the possibility that the choice not to take the money can be replaced in $TG-2$ and $TG-3$ does not decrease the social inappropriateness of the decision to take the money. This is summarized in the following.

**Result 4 (Take Games have Moral Dimension):** There is a clear social norm that taking away money from player A in the take games is inconsistent with proper and moral behavior. More than 80 percent of subjects rate the decision to take the money as either “somewhat socially inappropriate” or “very socially inappropriate.”

We finally report the data from the take games with punishment. Panel B of Figure 3 displays the two main findings. We find that the take-rates of players B1 are very similar in all three conditions, 36.6 percent (37 of 101) in $TGwP-1$, 32.1 percent (36 of 112) in $TGwP-2$, and 25.0 percent (25 of 100) in $TGwP-3$. Again, if anything, the take-rates are lower in conditions $TGwP-2$ and $TGwP-3$ than in $TGwP-1$, but the differences are not significant (Pearson’s chi-square test, $p=0.200$). We obtain this result even though the replacement probability increases from 0 (by design) in $TGwP-1$ to 0.29 in $TGwP-2$, and to 0.47 in $TGwP-3$. The take-rates of players B2 in $TGwP-2$ and of players B2 and B3 in $TGwP-3$ are very similar, 29.5 percent (33 of 112), 28.0 percent (28 of 100), and 27.0 percent (27 of 100), respectively. We cannot reject that the decisions of players B in all three conditions with punishment and in all roles originate from the same distribution (Pearson’s chi square test, $p=0.235$). We summarize this second replication of Result 1 as follows.

**Result 5 (Moral Steadfastness in the Take Games with Punishment):** Subjects do not use the replacement excuse in the take game with punishment.

It is noteworthy that the threat of punishment significantly reduces the take-rate compared to the treatments without punishment (Fisher exact test, one sided, $p<0.001$ for all possible bilateral comparisons). While this observation is expected and not interesting in itself, it proofs that the MTurkers react sensibly to incentives. Hence, the absence of the replacement effect in our take games is not driven by a general insensitivity of MTurkers to experimental variations.

We finally report the punishment data, which allows for studying whether players A, i.e. the “victims,” accept possible replacement as an excuse for selfish behavior by players B. We find that this is not the case. In condition $TGwP-2$, B1 and B2 were punished at almost identical levels,
leading to an average punishment spending of 0.026 USD for both types of players B. In condition TGwP-3, the average amount spent for the punishment of B1, B2, and B3 amounts to 0.019, 0.019, and 0.021 USD, respectively (Friedman test, p=0.827). This finding is consistent with our previous results showing that the possibility of replacement does neither affect take-rates nor social norms. We summarize the punishment data in the following.11

**Result 6 (Replacement Excuse Does Not Deflect Punishment):** All players B are punished equally for taking away the money from player A within our experimental conditions. That is, payers A do not accept it as an excuse that the alternative choice not to take away the money might be replaced.

4. Ultimatum Games with Responder Competition [Incomplete]

How do our results relate to existing findings on responder behavior in ultimatum games? Even very low offers are usually accepted in ultimatum games with responder competition, whereas such offers are mostly rejected in standard ultimatum games with a single responder (e.g., Güth et al. 1997, Grosskopf 2003, Fischbacher et al. 2009). Rejecting a low offer in the standard ultimatum game ensures punishment of the proposer, which contributes to the enforcement of fairness norms (e.g., Fehr and Gächter 2002). Rejecting a low offer in an ultimatum game with responder competition, however, does not ensure punishment of the proposer because for an offer to get accepted it is sufficient that a single responder accepts.12 Responders can thus use the replacement excuse and argue that “if I don’t accept the offer, another responder will do so.” Consequently, with competition, many responders do not feel compelled to pay the cost of punishing the norm violator, which is incurred by passing on the offer. Indeed, low rejection rates in ultimatum games with responder competition are often interpreted as showing that competitive markets drive out fairness concerns.13 Elinor Ostrom, for instance, writes: “A wide range of economic experiments

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11 The average spending for punishment of selfish players B1 in TGwP-1 is 0.029 USD. Average punishment thus appears to be lower in conditions with a larger number of players B, but averaged over all players B only the difference between punishment spending in TGwP-1 and TGwP-3 is significant (Mann-Whitney U test, p=0.007).

12 In the existing studies, multiple responders decide simultaneously whether to accept an offer. The offer is randomly assigned to one of the accepting responders if more than one responder accepts.

13 Fehr and Fischbacher (2005), e.g., write “This version of the ultimatum game—with responder competition—can be interpreted as a market transaction” (p. 158). Likewise, Roth et al. (1991) refer to their ultimatum games with proposer competition as “market environments” (p. 1068).
have found that the rational egoist assumption works well in predicting the outcome in [...] competitive market situations” (2000, p. 139).

In the following, we first conduct ultimatum games with and without competition to verify that our implementation of these games replicates the behavioral patterns reported in the existing literature. We will then measure the social norm that applies to rejecting a low offer in ultimatum games. is decisive for understanding why the probability of being replaced affects behavior in ultimatum games with responder behavior. by why it does not do so in the donation game and the take games as studied in Sections 2 and 3.

3.1 Experimental Design [Incomplete]

We conducted a series of ultimatum games to understand when the replacement excuse undermines moral behavior and when it does not. Ultimatum Game 1 (UG-1) is a standard, binary ultimatum game with two players: A, the proposer, and B1, the responder. Player A can either split 1 UDS equally or propose a split of 0.9 USD for himself and 0.1 USD for player B1. The equal split is automatically implemented, but player B1 can decide whether to accept the offer, in which case it is implemented, or to reject it, in which case both players receive no money at all. Ultimatum Game 2 (UG-2) is identical to UG-1 but consists of three players: A, B1, and B2. If player A proposes the equal split, A and B1 each receive 0.5 USD and B2 receives nothing. If player A proposes the unequal split, first B1 can decide whether or not to accept it. If B1 does not accept it, then B2 can do so. The player B who accepts the unequal offer receives 0.1 USD, the respectively other player B receives nothing. Only if both players B reject the unequal offer, it is rejected and all players receive no money at all. Ultimatum Game 3 (UG-3) is different only in that it consists of four players: A, B1, B2, and B3. If neither B1 nor B2 accept the unequal offer in case it is made by A, B3 can finally do so. Figure 4 provides an illustration of all three ultimatum games.

[FIGURE 4 HERE]

The important feature of the experimental manipulation of the ultimatum game is the variation of the number of players who can replace player B1’s decision to reject the unequal offer, i.e., the variation of the replacement probability. The study of the rejection-rates of players B1 in conditions UG-1, UG-2, and UG-3 allows for studying the power of the replacement excuse.
However, ultimatum games with responder competition are only appropriate to study moral behavior in markets if responders actually face a moral decision. In this section we show empirically that actions of responders who respond to unfair offers are not subject to prevailing social norms.

First, we i) replicate the reaction of responders to competition in a version of the ultimatum game with responder competition that is comparable to the take game with respect to its structure, complexity, and underlying subject pool, and ii) measure the social norm for a responder’s decision to accept an unequal offer. In the mini ultimatum game, a pie of 1$ can be split between a proposer, player A, and a responder, player B. First, player A decides whether to implement the equal split or to offer an unequal split, keeping 90% of the share. In the no-replacer treatment there is only a single responder, player B. If player A chooses the equal split, the game ends and both player A and player B receive 0.5 $ each. If player A offers the unequal split, player B decides whether to accept or to reject the offer. If player B accepts the offer, the two players receive their respective shares; i.e., player B receives 10% and player A receives 90%. If player B rejects the offer, both players receive a payoff of zero. In the 1-replacer treatment, there are two responders, player B1 and player B2. If player A chooses the equal split, the game ends, player A and player B receive 0.5 $ each and player B2 receives nothing. If player A offers the unequal split, player B1 moves first and can either reject or accept the offer. If player B1 rejects the unequal offer player B2 can accept the offer and thereby replace the decision of player B1 to reject. If both player B1 and player B2 reject the unequal offer, all players receive a payoff of zero and the equal distribution is implemented. If one of the responders, player B1 or player B2, accepts the unequal offer, player A receives 90% of the share, the accepting responder receives 10% of the share, and the other responder receives nothing. In the 2-replacer treatment, the chain of players B1 and B2 is extended by player B3, who can accept the unequal offer if both player B1 and player B2 reject it.

For each treatment we measure the social norm associated with a first mover responder’s decision to accept an unequal offer. Moreover, we measure the social norm for a proposer’s decision to offer the unequal split and the beliefs about the probability that the first mover responder will be replaced (i.e. one of the following responders accepts the offer) in the 1-replacer and 2-replacer conditions. We use the same tools for measuring social norms and beliefs as we used in the take game and the leprosy decision task. 1784 subjects on MTurk participated in total and earned on average 1.13 $. General procedures follow those in the take game. Subjects participated only once in treatments involving the mini-ultimatum game.
To rule out that social norms elicited on MTurk are unique to the particular subject pool, we also measure social norms for responder behavior in the lab, based on a version of the ultimatum game with responder competition that has already been studied in previous research. In the experimental setup of Fehr, Fischbacher and Fong (2009) a proposer offers an integer share of total surplus of 100 money units. In the baseline condition there is only a single responder who can either accept or reject the offer. If the offer is accepted, both players receive their respective shares. If the offer is rejected, both players receive a payoff of zero. In the competition treatments at least two responders decide simultaneously whether to accept or reject the offer. If more than one responder accepts the offer, the responder who receives the share is randomly determined. If only one responder accepts the offer, the proposer and the accepting responder receive their respective shares. If all responders reject the offer, all players end up with a payoff of zero. Fehr, Fischbacher and Fong (2009) find that acceptance rates of unfair offers are significantly higher in the competition treatments than in the baseline condition without competition. For example, if a proposer offers 10% of the total surplus, 80% of responders in the baseline condition reject the offer. However, in the competition treatment with two responders, only 55% of responders reject the same offer. Following the same procedures as in the other treatments, we elicit social norms in both the no-replacer and the 1-replacer conditions for accepting an offer of 10%. Moreover, we measure the social norms for offering 10% as a proposer in the baseline condition and the beliefs that a responder will be replaced (i.e. the other responder decides to accept) given an offer of 10% in the competition treatment. Subjects are always presented the original instructions used by Fehr, Fischbacher and Fong (2009).

Like Fehr, Fischbacher and Fong (2009), we ran the experiment at the decision laboratory of the Department of Economics at the University of Zurich. The data were collected within 15 minutes at the end of other experiments that were unrelated to the ultimatum game. Subjects participated only once in the treatments involving the ultimatum game and earned on average 3.27 CHF in addition to their show-up fee and payoffs earned from other parts of the respective session.

3.2 Experimental Results [Incomplete]

Figure 5 compares the acceptance rate of unfair offers and the respective replacement probabilities among the first movers in the three mini-ultimatum games. Without competition, only 51% of first mover responders accept an unfair offer; however, 74% of such offers are accepted if another responder can replace the decision of the first mover to reject the unfair offer (p=0.001, Fisher
The acceptance rate of unfair offers increases even further to 85% if there are two potential replacers, an increase that is highly significant with respect to responders in the no-replacer treatment (p<0.001, Fisher exact test) and marginally significant with respect to first mover responders in the 1-replacer treatment (p=0.059, Fisher exact test).

**Figure 5. Acceptance-Rates and Social Norm in the Ultimatum Game**

Notes: a) The bars show the fraction of first mover responders in the mini ultimatum game who accepted the unfair offer in the no-replacer (B1/1), 1-replacer (B1/2), and 2-replacer (B1/3) treatments. Error bars depict 95% confidence intervals. The dotted line depicts the probability that the subsequent replacer (in the 1-replacer treatment) or at least one of the two subsequent replacers (in the 2-replacer treatment) accepts the offer if the first mover rejects it. b) This figure shows the distribution of norm ratings for the decision to accept an unfair offer as a first mover responder in the mini ultimatum game. The data are pooled across the no-replacer, 1-replacer, and 2-replacer treatments. The ratings are coded as follows: -2 “very socially inappropriate”, -1 “somewhat socially inappropriate”, 0 “neutral: neither socially inappropriate nor socially appropriate”, 1 “somewhat socially appropriate”, 2 “very socially appropriate”.

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**Result 7:** In the ultimatum game with responder competition, responders react to an increase in the replacement probability. The possibility that subsequent responders can replace the decision to reject an unfair offer significantly increases the rate at which unfair offers are accepted.

Figure 6 shows the distribution of social norm evaluations for a responder’s decision to accept a 10% offer on MTurk and in the lab. Consistent with our findings in the leprosy decision task and the take game, the social norms differ neither among the no-replacer, 1-replacer, and 2-replacer conditions on MTurk (H(2)=1.032, p=0.5968, Kruskal-Wallis test) nor between the no-replacer and 1-replacer conditions in the lab (p=0.6904, Mann Whitney U test). The distributions of the evaluations reveal that there is no mutual understanding about what constitutes right conduct if someone has to respond to an unfair offer in the ultimatum game. In total, 71.5% of subjects on MTurk and 72.7% of subjects in the lab choose either the neutral option or one of the options that evaluate the action as socially appropriate. The neutral option, chosen by 33.5% of subjects on MTurk and 31.1% of subjects in the lab, is the modal choice in both subject pools. The normalized average ratings of 0.14 on MTurk and 0.25 in the lab are both close to zero. The social norms on MTurk for responder behavior in the ultimatum game offer do not differ from those in the lab (p=0.425, Mann Whitney U test); however, the social norms on MTurk for responder behavior are significantly different from those for dictator behavior in the take game (p<0.0001, Mann Whitney U test). We can conclude that responders do not seem to face a moral decision when they have to respond to an unfair offer.

However, the distribution of norm ratings with respect to a proposer’s decision to offer the unequal split (see Figure 9) shows that, unlike responder behavior, proposer behavior is subject to prevailing social norms. 82% of subjects rate the decision to make the unequal offer as either very socially inappropriate or somewhat socially inappropriate. The modal response is “somewhat socially inappropriate”, with 49% of subjects on MTurk and 52% of subjects in the lab choosing this option. The evaluation of a proposer’s decision to make an unequal offer does not depend on the number of responders (H(2)=2.007, p=0.3665, Kruskal-Wallis test), but differs significantly from the evaluation of a responder’s decision to accept such an offer, both on MTurk (p<0.0001, Mann Whitney U test) and in the lab (p<0.0001, Mann Whitney U test).

**Result 8:** A social norm exists that proposing the unequal split in the ultimatum game is inappropriate. However, there is no social norm that a responder should reject an unfair offer.
Only 28.4% of subjects on MTurk and 27.3% of subjects in the lab evaluate the decision to accept an unfair offer as either somewhat or very socially inappropriate, while the modal choice in both subject pools is “neutral: neither socially appropriate nor inappropriate”.

Figure 10 depicts the beliefs of subjects about the replacement probability of a responder in the competition treatment in the lab and of first mover responders in the 1-replacer and 2-replacer treatments on MTurk. Like the beliefs in the take game, the beliefs in the ultimatum game are highly dispersed and lead to an average belief of around 60% in both treatments. The beliefs on MTurk are not significantly different between the take game and ultimatum game in both the 1-replacer (p=0.144, Mann Whitney U test) and the 2-replacer treatments (p=0.822, Mann Whitney U test). Hence, different beliefs are unlikely to explain the different effects of the replacement probability on behavior between the take game and the ultimatum game.

5. Conclusion [Incomplete]

Firms operating under competitive conditions must often choose whether to take a profitable but ethically ambiguous business opportunity, such as building the wall on the U.S. border with Mexico, or to forgo the opportunity. Since a competitor is likely do the job in the latter case, forgoing does not make a difference for the ultimate outcome. The wall will be built, except that profits accrue to a less scrupulous competitor. In this paper, we study the conditions under which people use the argument that “if I don’t do it, someone else will.” From a deontological point of view, this replacement excuse does not provide absolution because an action is judged with respect to its adherence to a rule, irrespective of whether an action or its omission makes a difference for the ultimate outcome. In contrast, from a utilitarian point of view, the replacement excuse does provide absolution for any action because outcomes not actions matter for ethical assessment. Our experimental data show a clear behavioral pattern. If a social norm exists classifying the action under consideration as unambiguously immoral, subjects do not use the replacement excuse—even when the omission of the action is likely to be replaced by another subject. But if no social norm exists, subjects more often take an ethically ambiguous action when an omission of the action can be replaced by another subject, compared to a condition where replacement is not possible. By showing how social norms can outweigh the forces of competition, our paper informs the long-standing debate on the effect of markets on morals.
References [Incomplete]


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