The Broken Chain: Evidence against Emotionally Driven Upstream Indirect Reciprocity

Wendelin Schnedler*

Department of Managment
Faculty of Economics
Paderborn University

November 14, 2022

Abstract

Psychologists claim that being treated kindly puts individuals in a positive emotional state: they then treat an unrelated third party more kindly. Numerous experiments document that subjects indeed 'pay forward' specific behavior. For example, they are less generous after having experienced stinginess. This, however, is not necessarily driven by emotions. Subjects may also imitate what they regard as socially adequate behavior. Here, I present an experiment in which imitation is not possible at the next opportunity to act with a stranger: after being given either a fun or an annoying job, subjects have to decide whether to be generous or not. I find that although subjects who are given the annoying job report more negative emotions than those with the fun job, they do not treat an unrelated third person more unkindly in terms of passing on less money.

Keywords: indirect upstream reciprocity, paying-it-forward, chain of unkindness, simple anger, emotional regulation, imitation

JEL-Codes: D91 C91 D03

*wendelin.schnedler@upb.de

The data for this analysis comes from an experiment designed and executed together with Nina Lucia Stephan, whose excellent research support was thus essential for this paper. I also like to thank Lena Pilz, Tobias Niederprüm, Lukas Nerenberg and Ingolf Horst for their research assistance, Jaroslaw Kornowicz for valuable advice on the literature, and an anonymous referee for helpful comments. All errors remain my own.

You can never pay back; but you can always pay forward.

Woody Hayes, American Football Coach (dismissed for punching a player)

1 Introduction

According to received wisdom, unkindness is passed on to innocent people. An employee who is given an annoying and cumbersome task, might, for example, later refuse to help her colleague or be less willing to donate to a homeless person sitting at the Underground entrance on the way home. Evolutionary biologists and psychologists argue that being helped or harmed results in a feeling of gratitude or anger and then does not only trigger direct reciprocity toward the kind or unkind person but toward any person.[1]

Numerous psychological and economic experiments document that subjects pay forward specific behavior.[2] Consider, for example, the field experiment by Mujcic and Leibbrandt (2017), which took place on a large urban car park. They observe that drivers who experienced that a confederate of the experimenter insisted on their right of way are more likely to later insist themselves. The observed imitation, however, may have little to do with unspecific emotions and generalized reciprocity but be, for example, the result of social learning (Bandura, 1977). Drivers may take the behavior of other motorists on this parking lot as a cue or reminder of what is appropriate and act accordingly.

For establishing or maintaining cooperation in organizations, it matters why individuals pay forward. If the reason is, for example, social learning, then role models, code of conduct and other cultural measures are necessary to prevent the atmosphere from getting 'poisoned'. If the reason is a feeling, like gratitude or anger, emotional regulation techniques are more appropriate.

In this paper, I examine experimentally whether individuals pass on unkindness when the next opportunity for social interaction with a stranger does not allow for imitating the experienced behavior. One subject is randomly selected to be the boss, while all other subjects are workers. The boss can either let all workers WATCH funny movies or receive 10 € for assigning half of them to ENCRYPT pointless sequences of numbers. Since the actual identity of the workers is unknown to the boss, her decision who watches and who encrypts is random. The next opportunity to act after having carried out the tasks is a dictator game: workers decide how much of 10 € to share with a stranger unrelated to the experiment. Subjects who had to encrypt can thus not directly pass on the specific unkind behavior, i.e. assign the stranger to an annoying job. They can, however, let out any emotion on the recipient in the dictator game and, for example, pay forward unkindness by being less generous. Following Strang et al. (2016), I track subjects' emotions. I closely follow their design with the key difference that I examine the effect of being assigned an easy or difficult job rather than given a fair or unfair allocation of money.

In all experimental sessions, the bosses decided to assign half of the workers to ENCRYPT. For this assignment to be kind to watchers and unkind to encryptors, subjects

[1] Following the seminal work by Nowak and Sigmund (2005) on indirect reciprocity, Nowak and Roch (2007) propose a respective evolutionary model based on unspecific emotions. Psychologists arguing this way include Bartlett and DeSteno (2006), DeSteno et al. (2010), and Tsang (2006, 2007).

[2] For examples, see Dufwenberg et al. (2001), Güth et al. (2001), Ben-Ner et al. (2004), Gray et al. (2014), Diekmann (2004), Leimgruber et al. (2014), or Mujcic and Leibbrandt (2017).

must prefer watching to encrypting. In order to get an idea whether this is the case, a group of subjects is asked to state their preferred task and how much they would hypothetically be willing to pay in order to be allowed to engage in this preferred task (PRICE treatment), while others just WAIT. Since expressing one's task preference might affect emotions, I analyze the effect of the job assignment separately for the WAIT and PRICE treatment in a 2x2 design.

Subjects overwhelmingly prefer to WATCH rather than ENCRYPT. In the PRICE treatment, workers value the loss from having to encrypt rather than watch at 7 € (in the median). Accordingly, forcing them to encrypt can arguably be regarded as unkind. The observed loss from unkindness is comparable to the 7.50 € that subjects have to forgo when receiving an unfair allocation of money in Strang et al. (2016). The emotional response to having to encrypt is even stronger than that reported by Strang et al. (2016). Just before they decide on how much money to pass on in the dictator game, subjects who were allowed to WATCH report significantly more positive emotions than those who had to ENCRYPT.

Although encryptors are treated unkindly in the sense of being given a task that they find unattractive and although they report more negative emotions as a result, they do not pay forward unkindness. There is no significant difference in money given to the stranger between those who ENCRYPT and those who WATCH. The finding holds robustly irrespective of whether subjects had to WAIT before the dictator game or PRICE their preferred task. It is also not driven by a lack of statistical power: if anything encryptors give more than watchers.

2 Contribution to the literature

This paper contributes to the literature on 'paying itforward' or 'upstream indirect reciprocity'. Nowak and Roch (2007) distinguish between direct reciprocity, where some B who has been treated unkindly by A is then unkind to A, and indirect reciprocity, which involves a third party C. Indirect reciprocity comes in two flavors. Downstream indirect reciprocity, where a person A who has helped B in the past has a higher chance of receiving help in the future from C,[3] and upstream indirect reciprocity, where the 'beneficiary [B] pays benefits forward to a novel individual [C] (i.e., not the benefactor [A])' (Beeler-Duden and Vaish, 2020).

Upon closer inspection, many studies that are given as examples for 'paying it forward' by Nowak and Roch (2007), Beeler-Duden and Vaish (2020) or Gray et al. (2014) can be interpreted as cases of direct reciprocity. For instance, in Bartlett and DeSteno (2006), an experimental participant B is more likely to help the confederate of the experimenter A if she received help from A beforehand. In Tsang (2006, 2007), B sends more money to partner A when A earlier has sent more money to them. In a study by Zitek et al. (2010), subjects who are reminded of boring events by the experimenter A are later less likely to help A. In the present study, direct reciprocity is excluded because B can only affect C, the stranger, and not A, the boss.

[3] For an example of a natural field experiment on downstream indirect reciprocity, see Seinen and Schram (2006) for laboratory and Khadjavi (2017) for field evidence.

In other experiments, like Dufwenberg et al. (2001) or Güth et al. (2001), subjects in the role of B cannot directly reciprocate A's unkindness but can retaliate against some other subject C who acted as unkindly as A. Bigoni et al. (2021) examine how being 'poor' can lead B to retaliate against a potentially innocent 'rich' A. In Greiner and Levati (2005), B after being treated unkindly by A may treat C unkindly, in the hope that C later harms A. While these studies examine interesting behavioral phenomena, none can be regarded as evidence for pure upstream indirect reciprocity, where a kindly or unkindly treated B can be kind or unkind to some C that is *unrelated* to A as in the present paper.

Starting with Dollard et al. (1939), psychologists have suspected that individuals who experience frustration and aggression but cannot retaliate may take it out on an innocent person. Battigalli et al. (2015, 2019) formalize this in a model where unfulfilled expectations about material payoffs cause 'simple anger' and can lead to anti-social behavior toward an unrelated person C.[4] Persson (2016, 2018) puts this theory to a test. He finds that subjects B who are unlucky and receive a small payoff are more unhappy than those who started with the small payoff. Nevertheless, they are not more willing to give up money to punish another equally unlucky subject. My design differs from Persson's in three crucial aspects. First, being unkind to the unrelated subject entails no material costs. Rather than having to give up money, B gains materially from being unkind to C. Second, the source of frustration is not random. While in Persson's design a die determines whether B and C get a payoff of 100 or 10 and the low payoff cannot be avoided, the assignment to the hard job can be prevented by A here. Third, the only direct victim is B. In Perssons' experiment, B may commiserate with C because they are both affected negatively at the same time. All three aspects bring my experiment closer to the opening example of the introduction. Recall that in this example, the employee gains materially by not giving to the homeless, the job assignment came from his supervisor rather than 'nature', and the homeless does not directly suffer from it. Once these three aspects of the opening example are met, 'paying it forward' is typically observed in experiments.

Several experiments examine a sequence in which A plays a dictator game with B and B with C and find that subjects who received more money pass on more money (Diekmann, 2004; Ben-Ner et al., 2004; Herne et al., 2013; Bahr and Requate, 2014). Stanca (2009) examines a version of the trust game and finds that a B who receives more from A, also passes on more to C. Wu et al. (2015) observe that subjects who received low offers in the ultimatum game later pass on less money in a dictator game. In Leimgruber et al. (2014), monkeys and children are more likely to pass on more of a resource to a new monkey or child if they have previously received more of this resource. Beeler-Duden and Vaish (2020) find that 4-year-old children are more likely to share stickers with a new child after being helped in getting stickers (3-year-old children are not). The design used here draws inspiration from Gray et al. (2014) where subjects can either receive fun tasks (word association) or boring ones (vowel circling in an Italian text); if more fun tasks are received, subjects also pass on more fun tasks.

This body of evidence is consistent with the explanation that A's act induces a feeling in B that affects B's behavior toward C as suggested by Nowak and Roch (2007) and Beeler-Duden and Vaish (2020). In all these studies, however, A and B face similar decisions. Therefore, an alternative explanation might be that B learn what is 'appropriate' from

[4]The theory also explains anti-social behavior that is directed toward person A who harmed or intended to harm; for an experimental test on this aspect of the theory, see Aina et al. (2020).

A's behavior. In contrast, the scope for B to learn from A how to treat C is intentionally minimized in the present study. This suffices to prevent unkindness from being passed on—although stakes are comparable to the aforementioned studies and subjects appear emotionally affected in a similar way. This suggests that the observed 'paying it forward' in these studies is not due to unspecific emotions but something else, for example, imitation.

There are a few studies in which A's and B's choice sets differ. Houser et al. (2012) and Della Valle and Ploner (2017) observe that subjects who are unfairly treated in a dictator game are found to increase their earnings on average by lying more often to the experimenter. Paying-it-forward may thus be driven by the desire to earn an appropriate amount in the experiment. DeSteno et al. (2010) find that subjects who are helped to recover painfully typed in data by a confederate are contributing more in a two-player public good game. It can, however, not be excluded that the subject believes to play this game with the confederate. In Jeworrek and Waibel (2021), subjects who are given a tedious task are not exaggerating their performance in order to snatch away a bonus from a co-worker who had to engage in the same task. This could be due to solidarity between equally suffering co-workers. While addressing valuable research questions, none of these studies aims to (and indeed can) identify whether emotion alone can transmit unkindness.

The experimental design here borrows heavily from Strang et al. (2016) and large parts of this design and even some of the data used in the analysis later has also been employed by Schnedler and Stephan (2020). Both studies, Strang et al. (2016) and Schnedler and Stephan (2020), are concerned with a specific emotional regulation strategy: the effect of letter writing. Neither examines the more fundamental question studied here, namely, whether B forwards A's unkindness to C.

The present study's main contribution is that it sheds light on the motives for chains of unkindness by providing evidence that subjects do not pay forward unkindness across domains. Apart from the domain change, conditions are very similar to those under which such chains are typically observed. If unkindness is paid forward via emotions in the experiments discussed above, it should also be passed on, here. Indeed, subjects report to be negatively emotionally affected by unkindness in similar ways as in these studies. Still, they do not donate less if they are treated unkindly.

In the literature, it is typically argued that a specific behavior or task allocation is unkind (recall the association task being labeled 'fun' and the circling task 'boring' by Gray et al. (2014)). Here, I go a small step further by checking (albeit in a non-incentivized way) whether subjects consider encrypting to be less attractive than watching. Another minor contribution is that the study tracks emotional dynamics not only for those who are treated unkindly as in Strang et al. (2016) but also for those treated kindly. This enables me to show that reported emotions between these groups differ when deciding on how much money to pass on.

3 Experiment

This section introduces the experimental design, presents predictions and reports on the implementation of the experiment.

3.1 Experimental Design

Any experiment on 'paying it forward' (or upstream indirect reciprocity) has to involve at least three subjects: A, B and C. Here, subject A is randomly selected from the participants to act as a 'boss'. The boss is given the choice whether to assign half of the other subjects, the workers, to an unattractive job. Only one boss is chosen for each session to maximize the number of relevant observations from workers. After carrying out the jobs, each worker (B) may donate more or less to the participant of a future experiment (C).

Task assignment by the boss. The task assignment is supposed to meet two seemingly conflicting objectives. The boss should bear the responsibility for how workers are treated but for maximal statistical power and clean causal inference, workers should ideally be randomized into two equally sized groups, one treated kindly and the other unkindly. This challenge is met here using the same assignment procedure as in Schnedler and Stephan (2020). Work pairs are formed. The boss can gain 10 € if she imposes a dull encryption task on one worker in each pair. During the execution of the encryption task, the boss is regularly prompted to remind the encrypting subject to 'hurry up'. If this reminder is not sent within 5 seconds, she loses 50 cents. The boss thus gains from imposing the encryption task and reminding respective subjects. Suppose that subjects find the encryption task less attractive than the watching task. Then, being assigned to encrypt and reminded by the boss is unkind to workers in the same way as, for example, receiving a small amount from the dictator in the role of A in any of the other experiments on upstream indirect reciprocity. After imposing the encryption task, the boss also has to decide who from each pair should do it. She can only base this decision on a randomly allocated label (worker X or worker Y). This ensures that the assignment of the WATCH or ENCRYPT treatment is random as long as the boss imposes the task on half of the subjects; fortunately, all bosses in all sessions did that.

By separating the decision whether workers have to encrypt from the decision who encrypts, the allocation to treatments can be random, while the boss arguably bears some if not all of the responsibility for the assignment—even if she is put in this situation by the experimenter. The reason is that the boss can chose not to assign anyone to the annoying task. Evidence by Bartling and Fischbacher (2011) suggests that subjects indeed shift responsibility to the person with the decision right. Still, encrypters and watchers may both feel treated unkindly or they may both perceive the boss' treatment as neutral and just consider themselves as lucky or unlucky. The emotions expressed by workers in letters to the boss from the experiment by Schnedler and Stephan (2020), however, are telling a different story. These letters were written directly after the task; one half of the 110 letters comes from workers who watched, the other from those who encrypted. Three research assistants who are from a similar background as the subject pool (a female Bachelor student, a male Master student and a male PhD student) examined the letters without knowing anything but that they were written by a subject in the role of worker to a subject in the role of boss in an experiment. Based on the letters, they independently assessed whether the author clearly feels treated unkindly by the boss, rather unkindly, neutrally, rather kindly or clearly kindly. They were asked to mark letters if they felt incapable of classifying it. During the whole classification, they did not know whether the author of the letter was an encrypter or watcher (or even that these categories existed).

Research assistants slightly varied with respect to their ability to classify letters (65%, 85% and 86%). They had more difficulty classifying watchers' letters (50%-80%) than those of encryptors (82%-93%), which is perhaps unsurprising given that watchers had 'less to say'; for example, 10 of the 13 letters who were left empty came from watchers. Assessments are remarkably similar; letters are typically placed in the same or a neighboring category. At most they are one category apart but this only happens in 4 cases. Based on this assessment, encrypters feel less kindly treated than watchers. Over 80% of the encrypters are classified as feeling 'clearly treated unkindly' or 'rather treated unkindly than kindly', e.g., because the encrypter complains to the boss or even insults her. Among watchers, only 20% fall in this category; instead they rather thank the boss for the nice job. The difference shows across the whole distribution of all three assistants—see Figure 1; respective Mann-Whitney-U tests are highly significant at any conventional level. If watchers and encrypters would feel equally badly treated or regard the assignment as pure luck, one would have expected no difference in the assessment. Even if we assume that all those who refused to send a letter clearly feel treated unkindly, the result still remains highly significant. One can thus be fairly confident that encrypters and watchers do not feel treated equally by the boss when using the proposed assignment procedure.

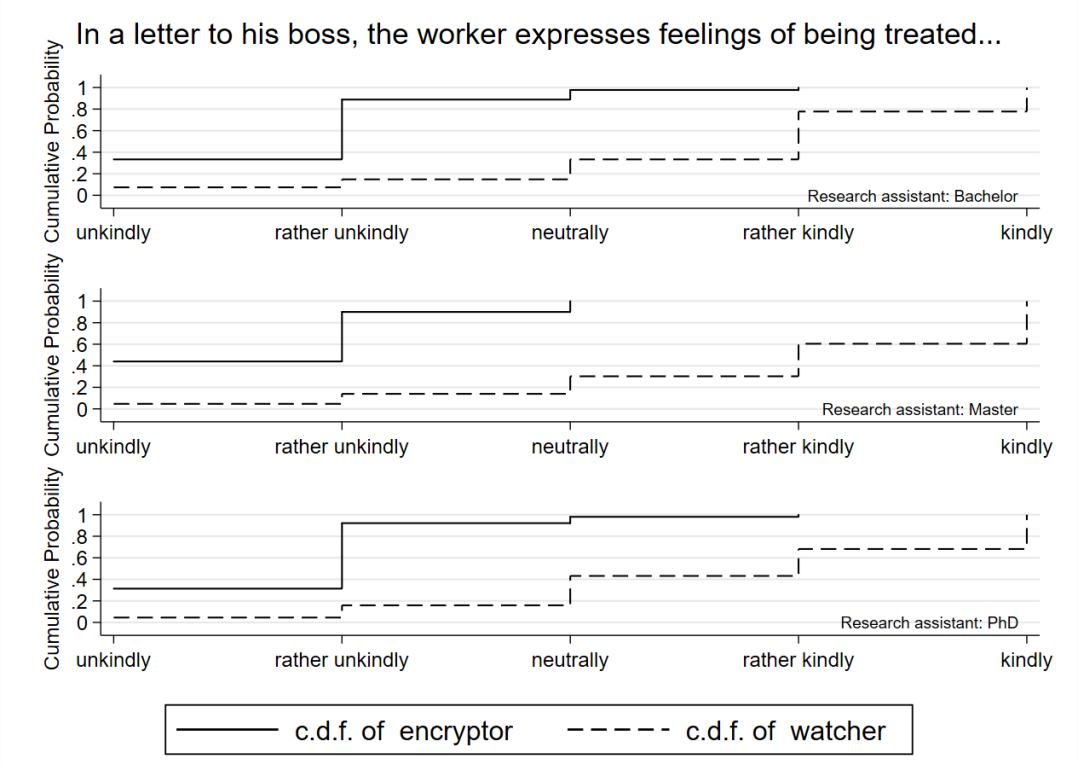


Figure 1: *Subjects who encrypt are found to feel treated more unkindly by the boss than subjects who watch (based on letter data by Schnedler and Stephan, 2020).*

WATCH and ENCRYPT treatment. In the WATCH treatment, subjects actual main task is to watch a sequence of short and funny video clips. For keeping the appearance of a 'task', watchers are asked to rate the videos by indicating in a checkbox for each of them

whether they liked it. (This is why they are referred to as 'rater' and not as 'watcher' in the instructions—see appendix.) Subjects assigned to the encryption task have to encrypt several sequences of numbers into letters. They are given a key for which letter is represented by which number. The solution sequence of letters was not an actual word but meaningless in order to prevent subjects getting excited about 'discovering' something. Numbers and letters in the key changed for every sequence, they are in a difficult to read font, randomly scattered on the top half of the screen and their random location altered between sequences—see Figure 6 in the appendix. These features are intended to make it hard to get good at the task. The boss's message to hurry up blocks the possibility to put in letters and thus hinders encryption. The box with the message has to be clicked away and all letters that have already been entered until this point are erased. All this is intended to reduces the opportunity for finding meaning or taking pleasure in encrypting.

In comparison with the circling task by Gray et al. (2014), having to encrypt is arguably more boring. One can, for example, get better in circling vowels in an Italian text; one might even see some purpose in doing so since vowels are hallmark of the Italian language and identifying and pronouncing them a frequent topic when learning Italian. Watching video clips that are intended to make people laugh also seems more fun than associating a word with 'banana' or 'giraffe', examples for fun tasks in Gray et al. (2014). Being allowed to watch instead of encrypting thus seems kinder than being permitted to associate words instead of circling Italian vowels and hence more likely to trigger positive emotions.

Both, watchers and encryptors, receive 10 cents for completing this part of the experiment; any treatment effect thus cannot stem from income differences.[5] The incentive for encryptors to engage in the task is that the experiment does not continue unless each of them has encrypted at least a certain number of sequences, which ranges between 3 and 10 and is unknown to the respective encryptor. In order to ensure that this part does not take too long, this phase concludes after six minutes even if some participants have not reached their aim. The maximal duration is not known to participants. In the actual implementation, we had no group that achieved the goal; the working phase thus lasted six minutes for all subjects in all treatments.

Comparison Opportunities. By putting subjects in pairs, the other member becomes a natural reference point. Since both members of the pair are in the same room (together with the other pairs of the session and the subject in the role of the boss), subjects can hear each other. Each seat has a head set, which watchers have to use for hearing the sound of the movies. On-ear head sets were chosen to give watchers a more private feeling and encourage them not to suppress laughter. The possibility of hearing watchers laugh renders the differences in tasks very tangible. After carrying out their assigned tasks, subjects in the role of workers are shown a table that neutrally summarizes the previous phase. It reminds subjects of their roles and that of their partner, lists the number of interruptions for encryptors, contrasts them with the number of movies that were liked by watchers, and recalls the payment for this part of the experiment (10 cent for both). The very neutral presentation of these facts, emphasizes the unequal treatment and that this inequality is not

[5] In some other 'paying it forward' experiments, the treatment is associated with receiving more or less money or tasks, so that respective results may be driven by budget and income effects or the desire to engage in a variety of tasks.

compensated by a larger payment.

PRICE and WAIT treatment. In order to get an idea about how unattractive subjects find encrypting in relation to watching, some subjects are asked to name a PRICE for the less attractive task after the execution of the tasks. Trying to avoid any demand effects, subjects are asked to first identify the less attractive task and only then how much they would have been willing to pay in order to avoid it. This question was not incentivized but may effect emotions because subjects can voice their frustration through stating the price or cool down in the elapsed time. Controlling for these effects, this part of the experiment was programmed to last 180 seconds and another group of subjects had to WAIT the same time; the exact length of time was chosen to match that in Strang et al. (2016).

Dictator Game. Subjects in the role of workers may experience kindness or unkindness in terms of the task to which they are assigned. In order to give them an opportunity to act kindly or unkindly in a very different dimension, they are all given 10 € and asked to allocate them between themselves and a participant in a different experiment that will take place later in the same term. For the input, subjects use a slider. Their payoff and that of the other participant are shown for every position of the slider. The dictator game allows us to measure the response to the treatment in a way that is comparable with the majority of 'paying it forward' experiments, in particular Diekmann (2004) Ben-Ner et al. (2004), Herne et al. (2013), Bahr and Requate (2014), and Strang et al. (2016).

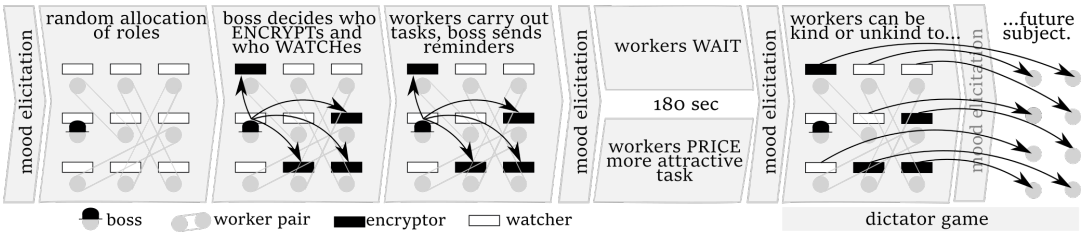


Figure 2: *Key events in the experiment.*

Eliciting Mood. Arguably, emotions cannot be measured directly. Instead, subjects are asked to express their emotional state at various stages: before learning the task, immediately after the WATCH or ENCRYPT treatment, 180 seconds later (i.e. after the WAIT or PRICE treatment), and finally after deciding on the donation to some future participant in the dictator game—see Figure 2. Mood is expressed by clicking on one of nine symbols, so called self-assessment manikins—see instructions in the appendix. Symbols are reflecting a one-dimensional scale with one extreme being associated with the words dissatisfied, unhappy, annoyed, desperate, melancholic and the other extreme with satisfied, happy, delighted, hopeful, and balanced. To establish an association of the symbols with the words, subjects are informed that the words are not shown during the experiment and encouraged to learn them by heart. This fast way of eliciting emotions is intended to prevent that subjects are intellectually engaged and 'reason' what might be the right answer. It originates from Bradley and Lang (1994) and is used here to ensure comparability with Strang et al. (2016), which to my knowledge is the only other study that measures emotions

in the context of 'paying it forward'.

Guessing. For an informal but salient assessment of the effect of the task assignment, subjects are asked to guess the mood of their partner. The question was deliberately put at the end of the experiment to avoid influencing earlier mood elicitation. The elicited information gives us an idea of whether subjects believe they would have been better off in the other role. Correct guesses were rewarded with 40 cent.

3.2 Predictions

Before we get to the central prediction, we turn to two manipulation checks. Since these will not be based on incentivized data, they rather check for plausibility of the suggested mechanism than provide conclusive evidence.

What constitutes kind or unkind behavior is typically considered obvious from the design in 'paying it forward' experiments. Here, I want to go a small step further. A necessary condition for the assignment to the ENCRYPT rather than WATCH task to be unkind is that encrypting is less attractive than watching. If the experimental design succeeds, one would expect this to be reflected in the subjects' willingness to pay—even if this willingness is not incentivized.

Manipulation Check Prediction 1. *Subjects express a willingness to pay in order to WATCH rather than ENCRYPT.*

If this prediction is not borne out by the data, the design of the treatment has not worked and being assigned to ENCRYPT rather than WATCH cannot be seen as unkind.

Assuming that being assigned to WATCH rather than to ENCRYPT is indeed experienced as kinder and following the argument by Bartlett and DeSteno (2006), DeSteno et al. (2010), and Tsang (2006, 2007), watching should trigger more positive emotions. Like the perception of the kindness of a treatment, the emotional response is a fundamentally subjective matter. We have to rely on subjects' reports and the honesty of these reports to draw any conclusions. Subjects were asked in the instructions to honestly report emotions rather than trying to provide some 'rational' answer. If they do, one would hence expect the kindly treated watchers to express more positive emotions.

Manipulation Check Prediction 2. *Subjects who have to ENCRYPT report their emotional state to be less satisfied, happy, delighted, hopeful and balanced than those who are allowed to WATCH.*

Following Bartlett and DeSteno (2006), DeSteno et al. (2010), and Tsang (2006, 2007), differing emotional responses to kind or unkind acts result in kind or unkind behavior. What matters is that subjects have been treated 'fairly' or 'unfairly' or more or less 'kindly' and not who treated them unfairly or unkindly. If being assigned to ENCRYPT rather than to WATCH is unkind, the resulting more negative emotions are hence expected to translate into less giving in the dictator game. This prediction is independent of whether the experimenter or the boss is held responsible for imposing the encryption task. (The evidence from the letters from Schnedler and Stephan (2020) seen before clearly locates the responsibility with the boss.) This argument leads to the following main prediction in observable and salient variables.

Main Prediction. *Subjects who WATCH give more in the dictator game to a participant of a future experiment than those who ENCRYPT.*

A reasonable alternative is that subjects do not let their feelings interfere with their decision on how much to share with the stranger.

Size of effect, power, and sample size. For a plausible size of the effect, Gray et al. (2014) offer a starting point. In their experiment, subjects who received a fair share (3$ out of 6$), gave on average 3.38 $, while an unfairly treated subject passes on 1.32$. The standard error is not explicitly stated but judging from the error bars in their Figure 1, it is clearly smaller than one (and so is the standard deviation), the effect size is hence around two standard deviations. In Strang et al. (2016) subjects share 10 € just like in this experiment. They observe an increase in the median donation from 3 € to 4.5 € when unfairly treated subjects were given the opportunity to emotionally regulate by writing a letter. This increase by 1.5 € amount to roughly one standard deviation. This effect is likely to be a lower bound for the effect of being treated unfairly since letter writing might not fully eliminate the effect of having received an unfair share. If having to ENCRYPT rather than to WATCH sets off a similar emotional reaction as an unfair allocation, one might hence expect an effect size above one standard deviation. Given the non-normal nature of donations in dictator games, the test of choice is a (one-sided) Wilcoxon-Mann-Whitney U test. With the conventional significance level of $\alpha = 0.05$ and a power of at least 0.9 one needs at most 19 in each treatment for respective effect sizes to be detectable—see Figure 7 in the appendix. Planning with 100 participants in the PRICE as well as the WAIT treatment, power is thus sufficient to detect the effect sizes typically found in the literature.

3.3 Implementation

	WATCH	ENCRYPT	Total
WAIT	40	40	80
PRICE	59	59	118
Total	99	99	198

Table 1: *The number of subjects in the 2x2 design.*

The experiment was programmed using the software z-Tree (Fischbacher, 2007) and participants were recruited with the help of ORSEE (Greiner, 2015). A total of 7 sessions was conducted on two days in May 2017 in the BaER-Lab at Paderborn University; three sessions of the WAIT treatment on the first day and four of the PRICE treatment on the second day. All of the 7 bosses imposed the encryption task, leading to 99 subjects who had to ENCRYPT and 99 who were allowed to WATCH—see Table 1.

The experiment lasted around 45min and subjects earned on average 10.56 €. There are no differences in the observables between the different treatments, suggesting that randomization worked—see Table 2. Encryptors engaged in the task: all subjects encrypted at least one and about two thirds at least 3 sequences. Five out of seven bosses were always sending the annoying reminders to encryptors on time, one boss missed one out on one of

	WAIT	PRICE	ENCRYPT	WATCH
initial happiness	5.91	5.57	5.79	5.63
female	66%	67%	65%	69%
age	23.55	23.09	23.21	23.34
economics major	38%	41%	40%	38%
engineering	9%	7%	6%	9%
cultural science	9%	8%	9%	8%
teaching	40%	41%	39%	41%

Table 2: *Randomization check: treatments exhibit no significant differences.*

20 possible opportunities and another boss on three. During the task, watchers' occasional laughter could be heard in the otherwise calm laboratory.

4 Results

Before turning to the main prediction that watchers give more than encryptors, I check whether reported preferences and emotions are in line with what is to be expected if the design worked.

Do subjects report a preference for watching rather than encrypting?

The overwhelming majority of 115 out of 118 subjects claims to prefer to WATCH rather than to ENCRYPT; which is highly significantly different from what one would expect if subjects were equally likely to state watching and encrypting as preferred task.[6] Moreover subjects claim to be willing to pay substantial sums in order to avoid this task. The stated willingness to pay in order to avoid encrypting is above 5 € for more than 60%, the median is at 7 € and more than a quarter is stating the maximal possible amount of 11 €—see Figure 3. The loss of 7 € for the median subject is in the same ball park as the loss from the unfair treatment in Strang et al. (2016), where subjects received 5 € rather than 12.5 € and hence lost 7.5 €. These amounts have to be taken with a grain of salt because they are stated without salient consequences.

Additional indirect evidence on how subjects view the tasks comes from their assessment of the emotional impact of the task on them and their partner. A key difference between my partner and me is the task. If, for example, I believe that my partner feels worse than me after carrying out the task, I probably prefer my task. It turns out that none of the watchers believes their encrypting partner has marked a more positive manikin than them. On the other hand, 92 of the 99 encryptors think they marked a more negative emotion than their watching partner. Assessing the impact of the treatment in the eyes of the subjects by subtracting their assessment of their partner's emotion from theirs, subjects consider watchers to be significantly happier than encryptors (p-value of Mann-Whitney test < 0.0001 Somers' D 95%-CI is [.82,.95]).

[6]The hypothesis that a subject is equally likely to state is rejected by a binomial test at any conventional significance level.

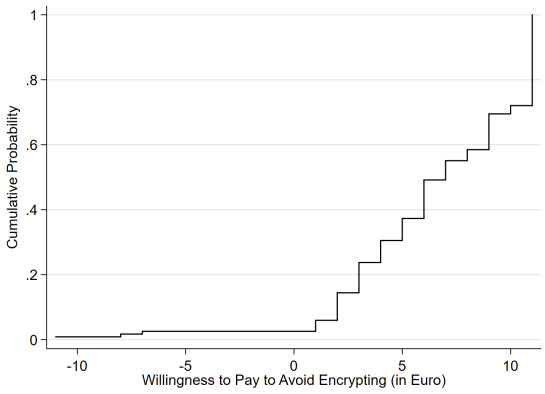


Figure 3: *Subjects overwhelmingly prefer watching.*

This as well as the evidence from the letters reported above is consistent with encrypting being considered less attractive than watching and rendering more unhappy.

Manipulation Check Result 1. *Subjects' answers imply that they rather WATCH than ENCRYPT.*

The design thus passes the first manipulation check.

What is the reported emotional response to the assignment?

Strang et al. (2016) offer a detailed look at the dynamics of the emotional response to being given an unfair share. Since I use the same self-assessment manikins to elicit emotions at the same moments in the experiment, these dynamics can be directly compared to those of subjects who have to ENCRYPT.

Subjects here report the same median happiness before and after experiencing unkind behavior as in Strang et al. (2016): the median drops from the initial level of 6 on the 9-point scale to 4 after subjects finished the encryption task. We can reject that the median difference is zero (Sign test, $p < 0.001$) or that both distributions are the same (Wilcoxon signed-rank test, $z = -6.401, p < 0.001$).

The effect of waiting is also similar to that by Strang et al. (2016). Median happiness stays at four, while mean happiness slightly increases. The effect of naming a PRICE on mood is comparable to that of drawing a picture in Strang et al. (2016). Median mood increases from 4 to 5 (the mean from 4.29 to 4.64) after pricing the tasks. In summary, the stated emotional reaction to the task assignment is very similar to that of an unfairly shared 25 € observed by Strang et al. (2016).

Let us now turn to the differences between watchers and encryptors. Reassuringly, mood ratings are similar for watchers and encryptors before the boss assigns jobs—see first line in Table 2. The effect of job assignment can be assessed by comparing initial mood with that after task execution. Figure 4 shows that the mood of almost all subjects who WATCH improves, whereas around 70% of those who ENCRYPT are in a worse mood and those who feel better only do so slightly. This difference in the change of mood between watchers and encryptors is highly significant (p-value for Mann-Whitney test < 0.0001, Somer's D 95%-CI [.75,.90]).

Figure 4: *Watching renders subjects happier, encrypting unhappier.*

The difference between watchers' and encryptors' mood is still present at the moment when subjects decide how much money to pass on—see upper panels in Figure 8 in the appendix. In the WAIT treatment, 80% of those who WATCH mark a happiness manikin above 5, whereas this is only true for less than 20% of those who ENCRYPT. The median among encryptors is 4 and among watchers 7. The situation in the PRICE treatment is similar but less pronounced, with a median happiness of 5 among encryptors but otherwise similar values. In both treatments, there is a significant difference in mood between those who WATCH and those who ENCRYPT (p-value for Mann-Whitney test: < 0.0001 in both treatments). This difference persists even after the dictator game (p-values remain below 0.0001)—see lower panels in Figure 8. All these findings are to be expected from a design that successfully induces different emotions.

Manipulation Check Result 2. *Subjects who have to ENCRYPT report their emotional state to be less satisfied, happy, delighted, hopeful and balanced than those who are allowed to WATCH throughout the duration of the experiment.*

The design thus also passes the second manipulation check. While the finding is consistent with differing emotions being generated by the treatment, we cannot exclude that subjects did not report their actual feelings. They may, for example, take the mood question before the assignment as a hint that they should report worse emotions after carrying out the task to please the experimenter—ironically this would run against the experimenter's explicit request in the instructions to spontaneously report emotions. Given the simple, quick and non-invasive nature of mood elicitation, it seems unlikely that subjects who encrypt only pretend to feel worse because reporting one's feelings is cognitive much less demanding for most people then second guessing the feelings that one should report. Also, explaining the persisting difference with a demand effect is not straight forward. If subjects were really taking the interventions between mood elicitation as cues to change what they report, reported emotions should not persist.

Do watchers give more than encryptors in the dictator game?

Since we have no reason to believe that the manipulation did not work, we now turn to the actual main prediction, namely, whether the treatment received affects how a person treats others.

The overall giving in the dictator game across treatments is in line with behavior observed in other experiments.[7] Given the strong and lasting negative emotional effect of being assigned to ENCRYPT, theories that attribute 'paying it forward' to emotions predict that watchers would donate more than encryptors. This effect should be strongest in the WAIT treatment, where encryptors and watchers differ most in terms of their reported emotional reaction.

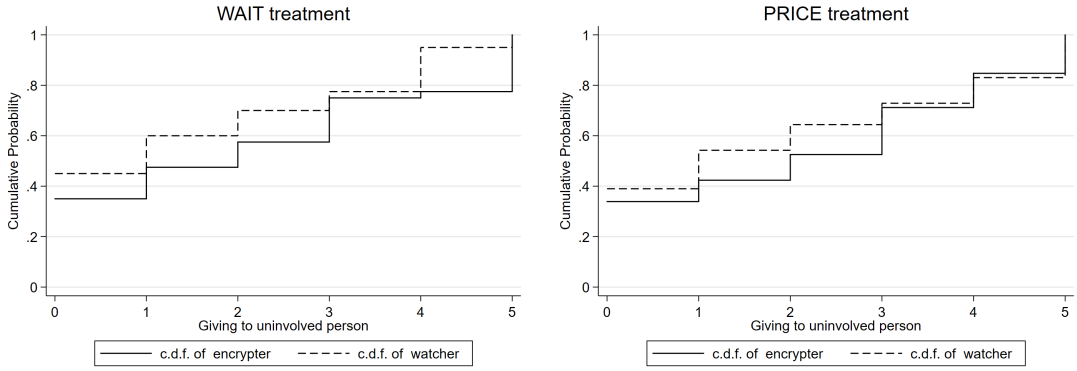


Figure 5: *Irrespective of whether they waited or named a price, watchers do not give more than encryptors; if anything, they give less.*

The data does not support this. There is no significant difference in terms of donations between those who WATCH and those who ENCRYPT (Mann-Whitney U's p-value $= 0.90$, Somers' D 95%-CI [-.40, 0.08]). Given a total of 80 observations, the insignificant result is not due to lacking power. Indeed, the observed effect has the wrong sign. If anything, encryptors are more generous. The probability that encryptors give nothing is 10 percentage points lower, their median donation is 2 €, while it is 1 € for watchers, and every fifth encryptor shares fairly as opposed to every tenth watcher—see left panel in Figure 5.

The situation in the PRICE treatment is similar with a smaller difference between the groups. Watchers clearly do not give more than encryptors (Mann-Whitney U's p-value $= 0.77$, Somers' D 95%-CI [-.28, .13]) but have a slight but not significant tendency to be less generous: Those who ENCRYPT are 5 percentage points less likely to give nothing, their median donation is one euro higher, while the rate of subjects who share fairly is about the same as for those who WATCH.

[7] Most subjects give nothing: 34% of the subjects across all treatments, while the average share is 36% in the meta study by Engel (2011). Being chosen by 17% of the subjects, the equal-split is (as usual) the second most common category. The share even coincides with that reported by Engel (2011), whereas no subject passes on the full endowment as opposed to 5% observed by Engel across a large number of different experiments.

Result 1. *Subjects who are treated kindly in the sense of being assigned to WATCH rather than ENCRYPT do not donate more to an independent third person.*

5 Discussion and conclusion

The experiment is successful in the sense that subjects claim to prefer watching videos to encrypting meaningless sequences. The emotional response to having to encrypt is similar to receiving an unfair share of money (Strang et al., 2016). Being assigned to encrypt rather than watch is thus comparable to other 'unkind' treatments in the literature like receiving an unfair allocation in a dictator game (Strang et al., 2016) or being given an unattractive task (Gray et al., 2014). Subjects, however, do not pass on the unkindness that they have experienced (whoever might be at its origin): kindly treated subjects are not more generous toward an independent third person.

This clashes with the many findings that kindness or unkindness is passed on. An explanation that is consistent with these contradictory findings is that subjects learn socially adequate behavior from observing others. In other experiments, this is easy because the observed behavior and one's own decision are in the same domain, be it the allocation in a dictator game, giving priority on a car park or assigning someone to an unattractive job. In the experiment presented here, the next social contact with an independent third party does not allow for direct imitation of the experienced treatment. This seems to be enough to prevent 'paying it forward', which suggests that the 'paying it forward' observed in previous studies is not due to an unspecific emotion but something else like social learning and possibly a cultural rather than a psychological phenomenon. The appropriate measures to stop chains of unkindness then would not be emotional regulation but establishing the desired culture by being a role model, codes of conduct, etc.

Somewhat reassuringly, the experiment shows that unkindness is not passed on when stakes are small. When stakes are higher, unkind treatment may, of course, trigger much stronger emotions in humans who may then be unkind to a third unrelated person. Whether it does or not, however, cannot be learned with the stakes used here or in any of the other experiments. It has to be tested with large stakes (and inevitable will run into ethical problems).

Interestingly, there is some (albeit weak) indication that encryptors appear more generous than watchers and especially under conditions when they report stronger negative emotions (in the WAIT treatment). This gives rise to some interesting speculations. Perhaps their experience of suffering opens them up to that of others and hence renders them more empathetic. Or, they are more emotionally hit and try to give meaning to being present at the experiment by donating more. Addressing these speculations is beyond the scope of this paper and left for future research.

References

Aina, Chiara, Pierpaolo Battigalli, and Astrid Gamba, "Frustration and anger in the ultimatum game: An experiment," *Games and Economic Behavior*, 2020, *122*, 150–167.

Bahr, Gunter and Till Requate, "Reciprocity and giving in a consecutive three-person dictator game with social interaction," *German Economic Review*, 2014, *15* (3), 374–392.

Bandura, Albert, *Social learning theory*, Vol. 1, Englewood Cliffs Prentice Hall, 1977.

Bartlett, Monica Y and David DeSteno, "Gratitude and prosocial behavior: Helping when it costs you," *Psychological Science*, 2006, *17* (4), 319–325.

Bartling, Björn and Urs Fischbacher, "Shifting the blame: On delegation and responsibility," *The Review of Economic Studies*, 2011, *79* (1), 67–87.

Battigalli, Pierpaolo, Martin Dufwenberg, and Alec Smith, "Frustration and anger in games," *Available at SSRN 2591839*, 2015.

_ , _ , and _ , "Frustration, aggression, and anger in leader-follower games," *Games and Economic Behavior*, 2019, *117*, 15–39.

Beeler-Duden, Stefen and Amrisha Vaish, "Paying it forward: The development and underlying mechanisms of upstream reciprocity," *Journal of Experimental Child Psychology*, 2020, *192*, 104785.

Ben-Ner, Avner, Louis Putterman, Fanmin Kong, and Dan Magan, "Reciprocity in a two-part dictator game," *Journal of Economic Behavior & Organization*, 2004, *53* (3), 333–352.

Bigoni, Maria, Stefania Bortolotti, and Efşan Nas Özen, "Economic polarization and antisocial behavior: An experiment," *Games and Economic Behavior*, 2021, *126*, 387–401.

Bradley, Margaret M and Peter J Lang, "Measuring emotion: The self-assessment manikin and the semantic differential," *Journal of Behavior Therapy and Experimental Psychiatry*, 1994, *25* (1), 49–59.

DeSteno, David, Monica Y Bartlett, Jolie Baumann, Lisa A Williams, and Leah Dickens, "Gratitude as moral sentiment: Emotion-guided cooperation in economic exchange.," *Emotion*, 2010, *10* (2), 289.

Diekmann, Andreas, "The power of reciprocity: Fairness, reciprocity, and stakes in variants of the dictator game," *Journal of Conflict Resolution*, 2004, *48* (4), 487–505.

Dollard, John, Neal E Miller, Leonard W Doob, OH Mowrer, and Robert R Sears, *Frustration and aggression.*, New Haven, CT: Yale University Press, 1939.

Dufwenberg, Martin, Uri Gneezy, Werner Güth, and Eric Van Damme, "Direct vs indirect reciprocity: An experiment," *Homo Oeconomicus*, 2001, *18*, 19–30.

Engel, Christoph, "Dictator games: A meta study," *Experimental Economics*, 2011, *14* (4), 583–610.

Fischbacher, Urs, "z-Tree: Zurich toolbox for ready-made economic experiments," *Experimental Economics*, 2007, *10* (2), 171–178.

Gray, Kurt, Adrian F Ward, and Michael I Norton, "Paying it forward: Generalized reciprocity and the limits of generosity.," *Journal of Experimental Psychology: General*, 2014, *143* (1), 247.

Greiner, Ben, "Subject pool recruitment procedures: Organizing experiments with ORSEE," *Journal of the Economic Science Association*, 2015, *1* (1), 114–125.

_ **and M Vittoria Levati**, "Indirect reciprocity in cyclical networks: An experimental study," *Journal of Economic Psychology*, 2005, *26* (5), 711–731.

Güth, Werner, Manfred Königstein, Nadège Marchand, and Klaus Nehring, "Trust and reciprocity in the investment game with indirect reward," *Homo Oeconomicus*, 2001, *18*, 241–262.

Herne, Kaisa, Olli Lappalainen, and Elina Kestilä-Kekkonen, "Experimental comparison of direct, general, and indirect reciprocity," *The Journal of Socio-Economics*, 2013, *45*, 38–46.

Houser, Daniel, Stefan Vetter, and Joachim Winter, "Fairness and cheating," *European Economic Review*, 2012, *56* (8), 1645–1655.

Jeworrek, Sabrina and Joschka Waibel, "Unethical employee behavior against coworkers following unkind management treatment: An experimental analysis," *Managerial and Decision Economics*, 2021.

Khadjavi, Menusch, "Indirect reciprocity and charitable giving—evidence from a field experiment," *Management Science*, 2017, *63* (11), 3708–3717.

Leimgruber, Kristin L., Adrian F. Ward, Jane Widness, Michael I. Norton, Kristina R. Olson, Kurt Gray, and Laurie R. Santos, "Give what you get: Capuchin monkeys (Cebus apella) and 4-year-old children pay forward positive and negative outcomes to conspecifics," *PloS one*, January 2014, *9* (1).

Mujcic, Redzo and Andreas Leibbrandt, "Indirect reciprocity and prosocial behaviour: Evidence from a natural field experiment," *The Economic Journal*, 2017.

Nowak, Martin A and Karl Sigmund, "Evolution of indirect reciprocity," *Nature*, 2005, *437* (7063), 1291–1298.

_ **and Sébastien Roch**, "Upstream reciprocity and the evolution of gratitude," *Proceedings of the Royal Society B: Biological Sciences*, 2007, *274* (1610), 605–610.

Persson, Emil, "Frustration and anger in games: A first empirical test of the theory," Technical Report 647, University of Gothenburg February 2016.

_ , "Testing the impact of frustration and anger when responsibility is low," *Journal of Economic Behavior & Organization*, 2018, *145*, 435–448.

Schnedler, Wendelin and Nina Lucia Stephan, "Revisiting a remedy against chains of unkindness," *Schmalenbach Business Review*, 2020, *72*, 347–364.

Seinen, Ingrid and Arthur Schram, "Social status and group norms: Indirect reciprocity in a repeated helping experiment," *European Economic Review*, 2006, *50* (3), 581–602.

Stanca, Luca, "Measuring indirect reciprocity: Whose back do we scratch?," *Journal of Economic Psychology*, 2009, *30* (2), 190–202.

Strang, Sabrina, Xenia Grote, Katarina Kuss, Soyoung Q Park, and Bernd Weber, "Generalized negative reciprocity in the dictator game–How to interrupt the chain of unfairness," *Scientific Reports*, 2016, *6*, 22316.

Tsang, Jo-Ann, "Gratitude and prosocial behaviour: An experimental test of gratitude," *Cognition & Emotion*, 2006, *20* (1), 138–148.

_ , "Gratitude for small and large favors: A behavioral test," *The Journal of Positive Psychology*, 2007, *2* (3), 157–167.

Valle, Nives Della and Matteo Ploner, "Reacting to unfairness: Group identity and dishonest behavior," *Games*, 2017, *8* (3), 28.

Wu, Yan, Yufeng Zang, Binke Yuan, and Xuehong Tian, "Neural correlates of decision making after unfair treatment," *Frontiers in Human Neuroscience*, 2015, *9*, 123.

Zitek, Emily M, Alexander H Jordan, Benoît Monin, and Frederick R Leach, "Victim entitlement to behave selfishly.," *Journal of Personality and Social Psychology*, 2010, *98* (2), 245.

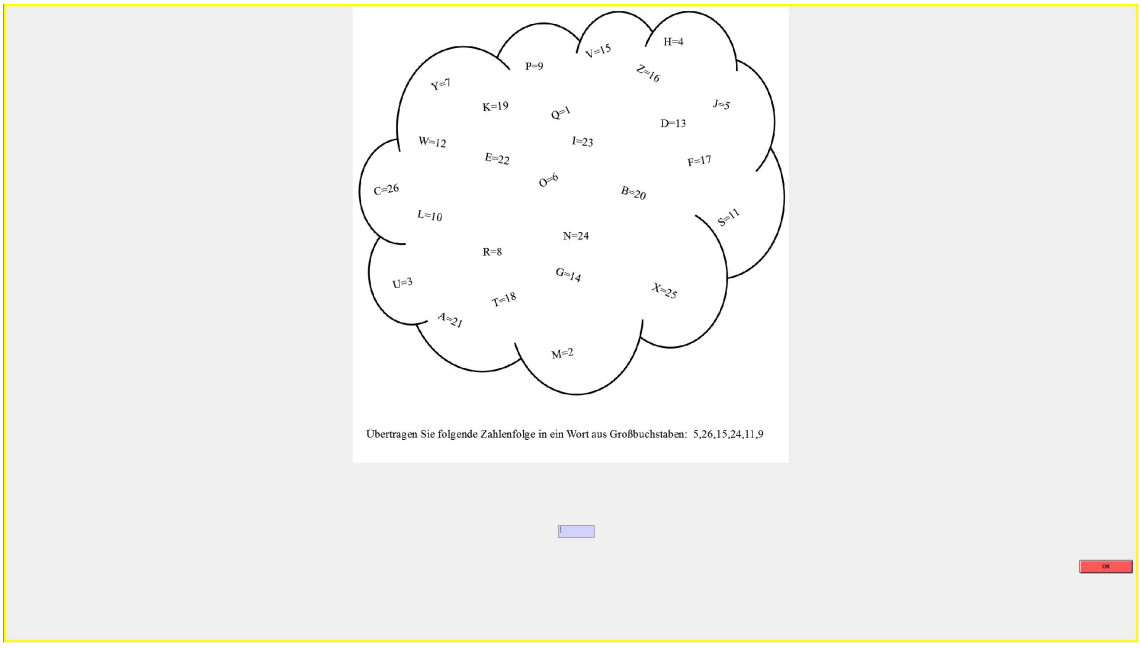


Figure 6: Screen for the encryption task. The phrase translates to 'Transfer the following number sequence into a word in capital letters.'

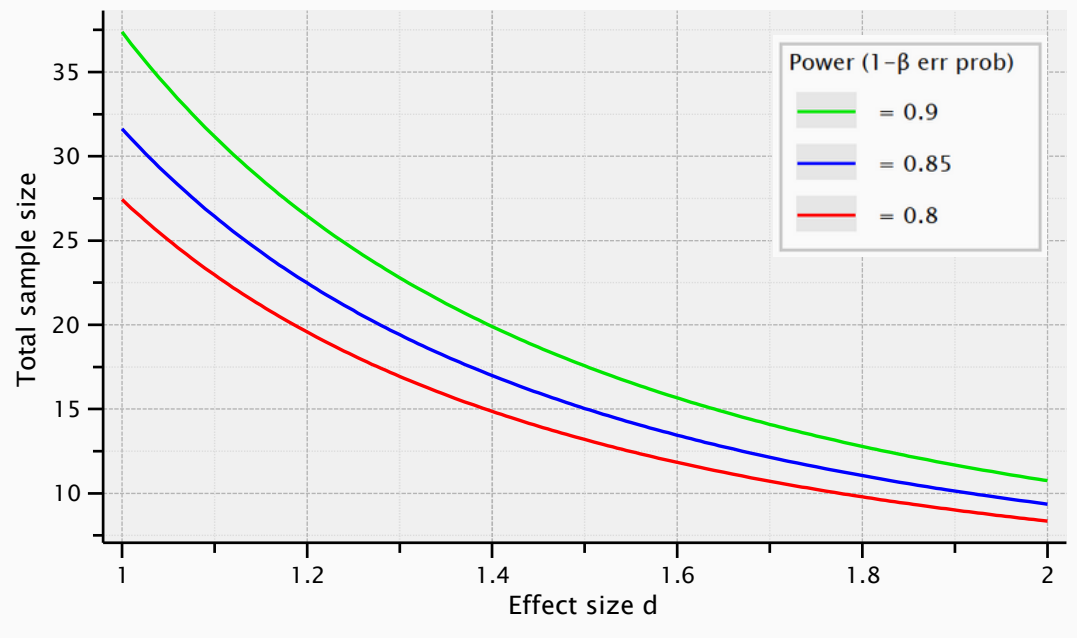


Figure 7: *Power of one-sided Wilcoxon-Mann-Whitney U test with significance level of 5% (parent distribution: normal): With a total of 40 observations, effect sizes from the literature can be detected at a power of 90%. (Computed using g*power.)*

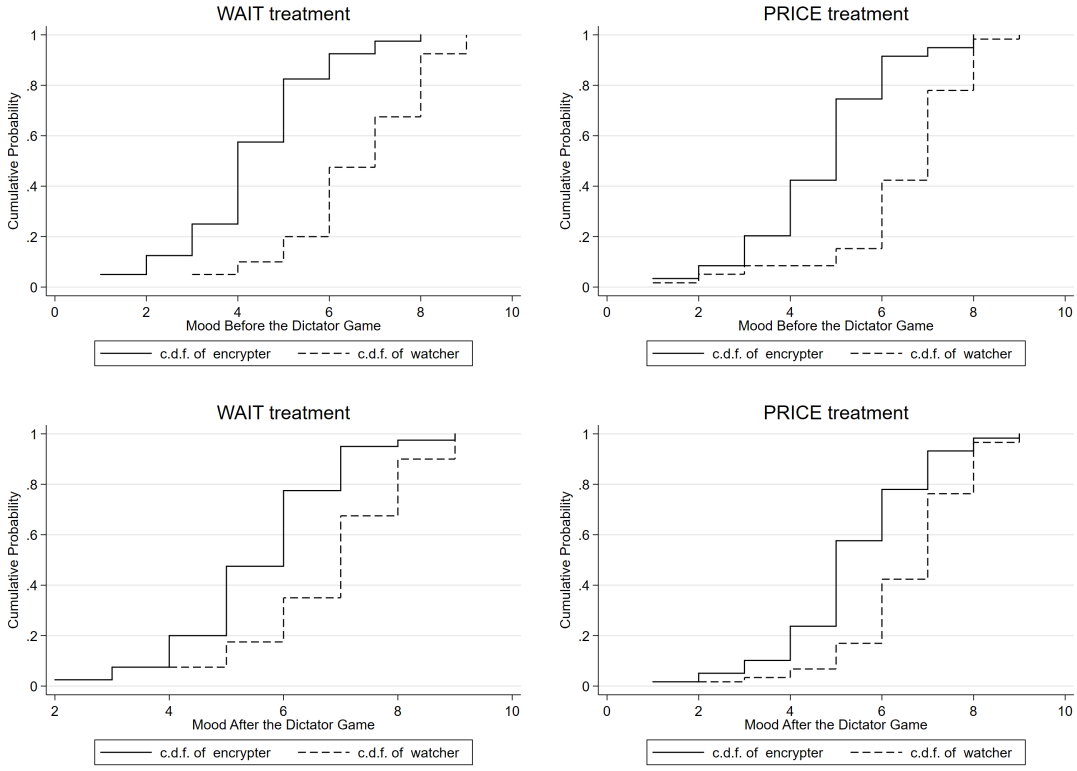


Figure 8: *Those who WATCH rather than ENCRYPT report better mood before and after the dictator game—irrespective of whether subjects waited or named a price.*

INSTRUCTIONS

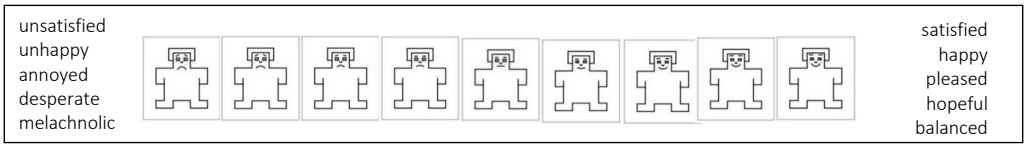
You are now participating in a scientific experiment. These instructions are the same for all participants and explain to you what you need to know to participate in this experiment. If you have questions, please raise your hand. Otherwise, communication is strictly probhibited during the experiment.

During the experiment you can earn money. All money amounts are directly expressed in Euro. At the end of the experiment, your balance and an additional show-up fee of 2,50€ will be paid to you in cash.

Expressing Emotion

During the experiment you will be asked several times to express your emotion by selecting a symbol. Please indicate how you feel in this moment by clicking on one of the nine symbols. Symbols at the outside are for more extreme emotions, while symbols in the middle reflect less clear emotions. **There are no right or wrong answers. Please answer according to your mood.** Which emotion you express has no consequence on your payoff.

Please read the adjectives at the extremes carefully. Try to remember which adjective relates to which symbol because you will only see the symbols in the experiment. The combination of adjectives and symbols is thus only shown on this sheet.



Sequence of the Experiment

There are three roles in this experiment: boss, rater and encryptor. At the beginning, one participant from this room will be randomly selected to take on the role of boss. All other participants are put into pairs and will be assigned to each other for the rest of the experiment. Initially, they are all raters. The experiment consists of three parts: working, sharing, guessing.

The boss gets a fixed wage but only if he fulfills the following conditions completely.

- The boss assigns one participant from each pair to become an encryptor.
- He decides for hurrying the encryptors.
- He confirms interruptions by clicking every time when such an interruption is possible. At the interruption, all encryptors are reminded to hurry up and their current input is deleted.

Part 1: Working

Rater	Encryptor
Your task is pleasant. You can watch funny and entertaining movies and rate them according to their entertainment value. You are shown a video after which you have the opportunity to rate it by marking the check box „I like it!“ if you do. You will be shown new videos until the encryptors have finished part 1.	You will be shown the numbers 1 to 26 and an assigned letter. Below, you will see a combination of numbers that you should encrypt into letters. Put in the resulting combintation of letters to get to the next encryption exercise. In order to leave the unpleasant working phase, every encryptor must solve a minimum number of exercises correctly. This number is between 3 and 10 and will be randomly assigned to the encryptor but not revealed. You will be assigned new exercises until all encryptors have solved their minimum number of exercises. In case that all participants are only waiting for a few encryptors, Part 1 will be ended pre-maturely.
Payment for Part 1: 0,10€	**Payment for Part 1:** 0,10€

Figure 9: Instructions for all treatments (translated from German), first page

As a rater, please do not forget to put on your headsets when the first video appears.

Part 2: Sharing

The **boss** does not participate in part 2. As an **encryptor** or **rater,** you will be asked to share a given amount of money between yourself and another person. This given amount is the same for all participants. Important notice: This other person is not your partner but a particpant from a different experiment. This experiment will take place in the summer term 2017 in the BaER-Lab.

Part 3: Guessing

The **boss** does not participate in part 3. As an **encryptor** or **rater,** you should guess the mood of the partner who has been randomly assigned to you immediately after part 1 (working). If your guess is correct, you get 0,40€.

Payoff

The payoff for this experiment is composed as follows:

Rater	Encryptor
from part 1: 0,10€ **from part 2:** the amount that you have assigned to yourself **from part 3:** 0,40€ if your guess was correct	**from part 1:** 0,10€ **from part 2:** the amount that you have assigned to yourself **from part 3:** 0,40€ if your guess was correct
In addition, all participants get a fixed show-up fee of 2,50€.	

The **boss** receives a fixed wage without any deductions if he fulfills the above conditions without restriction. He learns the level of this fixed wage directly at the beginning of the experiment. If the boss decides against fulfilling the above conditions, his fixed wage will be reduced. In this case, the boss can only count on the show-up fee of 2,50€ , which he receives in any case like all participants.

After the Experiment

Following the experiment, you are asked to answer some questions. Please respond honestly and completely. Your answers are anonymous and have no influence on your payoff in the experiment.

Please note:

- Communication with other participants is not allowed during the whole experiment.
- All mobile phones must be switched off during the whole duration of the experiment.
- If you have got a question, please remain seated and raise your arm. Please ask questions such that they cannot be overheard by other participants.
- All decisions are anonymous, i.e., no other participant learns the identity of other participants who have taken a certain decision.
- Payment is also anonymous, i.e., no participant learns the level of the payoff of other participants..
- Please remain seated until the end of the experiment. You will be called for being paid out by your seat number.

Good luck and thank you for participating in this experiment!

Figure 10: Instructions for all treatments (translated from German), second page

ANLEITUNG

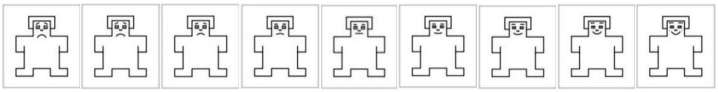
Sie nehmen nun an einem wissenschaftlichen Experiment teil. Diese Anleitung ist für alle Teilnehmer gleich und erklärt Ihnen alles, was Sie für die Teilnahme wissen müssen. Falls Sie Fragen haben, melden Sie sich bitte per Handzeichen, ansonsten gilt während des gesamten Experiments ein absolutes Kommunikationsverbot.

Im Laufe des Experiments können Sie Geld verdienen. Alle Beträge werden direkt in Euro angegeben. Am Ende des Experiments wird Ihnen Ihr Guthaben zusätzlich zum Teilnahmeentgelt von 2,50€ in bar ausgezahlt.

Stimmungsabfragen

Während des Experiments werden Sie mehrmals gebeten, Ihre Stimmungslage durch die Auswahl von Symbolen auszudrücken. Bitte geben Sie an, wie Sie sich im entsprechenden Moment fühlen, indem Sie eines der neun Symbole auswählen. Dabei stehen die äußeren Symbole für extreme und die mittigeren Symbole für entsprechend weniger eindeutige Stimmungslagen. **Es gibt keine richtigen oder falschen Antworten. Antworten Sie bitte ehrlich und nur Ihrer aktuellen Stimmungslage entsprechend.** Die Stimmungsabfragen haben keinerlei Auswirkung auf Ihre Auszahlungen.

Bitte lesen Sie sich die Adjektive zu den Extremen genau durch. Versuchen Sie sich die Adjektive in Verbindung mit den Symbolen zu merken, da Ihnen während des Experiments nur die Symbole angezeigt werden. Sie sehen also nur auf diesem Blatt die Symbole in Kombination mit den Adjektiven.

unzufrieden unglücklich genervt verzweifelt schwermütig		zufrieden glücklich erfreut hoffnungsvoll ausgeglichen

Ablauf des Experiments

In diesem Experiment gibt es drei Rollen: Boss, Bewerter und Übersetzer. Zu Beginn des Experiments wird zufällig ein Teilnehmer aus dem Raum ausgelost, der als einziger die Rolle des Bosses übernimmt. Alle anderen Teilnehmer werden in Paare aufgeteilt, die einander für den Rest des Experiments zugeordnet bleiben. Sie alle sind zunächst Bewerter, und das Experiment besteht für sie aus drei Teilen: Arbeiten, Aufteilen und Einschätzen.

Der Boss erhält ein Fixgehalt, aber nur wenn er die folgenden Bedingungen voll erfüllt:

- Der Boss macht einen der Teilnehmer aus jedem Paar zu einem Übersetzer.
- Er entscheidet sich dafür, dass die Übersetzer zur Eile angetrieben werden.
- Er drückt durch Bestätigen per Klick jedes Mal seine Unterstützung für eine Unterbrechung aus. Bei jeder Unterbrechung werden alle Übersetzer daran erinnert sich zu beeilen und ihre aktuelle Eingabe wird gelöscht.

Teil 1: Arbeiten

Bewerter	Übersetzer
Ihre Aufgabe ist angenehm. Sie können lustige, unterhaltsame Filme anschauen und je nach Unterhaltungswert bewerten. Sie bekommen dazu ein Video nach dem anderen angezeigt, und die Möglichkeit jedes Video durch einen Haken bei „Gefällt mir!“ zu bewerten. Es werden so lange neue Videos angezeigt, bis die Übersetzer Teil 1 beendet haben.	Ihnen werden die Zahlen 1 bis 26 und je ein zugeordneter Buchstabe angezeigt. Darunter sehen Sie eine Kombination von Zahlen, die Sie in Buchstaben übersetzen sollen. Geben Sie die entstehende Kombination von Buchstaben ein, um zur nächsten Übersetzungsaufgabe zu gelangen. Um die unangenehme Arbeitsphase zu verlassen, muss jeder Übersetzer eine Mindestzahl an Aufgaben richtig lösen. Diese Zahl liegt zwischen 3 und 10 und wird den Übersetzern zugelost, aber nicht mitgeteilt. Sie bekommen so lange neue Aufgaben angezeigt, bis alle Übersetzer ihre Mindestzahl an Aufgaben gelöst haben. In dem Ausnahmefall, dass alle Teilnehmer nur noch auf einzelne Übersetzer warten, wird Teil 1 vorzeitig beendet.
Gesamtauszahlung für Teil 1: 0,10€	**Gesamtauszahlung für Teil 1:** 0,10€

Figure 11: Instructions for all treatments (German original), first page

Als Bewerter denken Sie bitte daran, dass Sie Ihre Kopfhörer aufzusetzen sobald das erste Video erscheint.

Teil 2: Aufteilen

Der Boss nimmt nicht an Teil 2 teil. **Als Übersetzer** und **als Bewerter**, werden Sie gebeten jeweils einen Geldbetrag zwischen sich und einer anderen Person aufzuteilen. Der Geldbetrag ist für alle Teilnehmer gleich hoch. Wichtig: Diese andere Person ist nicht Ihr Partner, sondern ein Teilnehmer eines anderen Experiments. Dieses andere Experiment wird im Sommersemester 2017 im BaER-Lab stattfinden.

Teil 3: Einschätzen

Der Boss nimmt nicht an Teil 3 teil. **Als Übersetzer** und **als Bewerter** sollen Sie die Stimmung einschätzen, die der Ihnen zugeloste Partner unmittelbar nach Teil 1 (Arbeiten) angegeben hat. Liegen Sie mit Ihrer Einschätzung richtig, erhalten Sie 0,40€.

Auszahlung

Die Auszahlungen für dieses Experiment setzen sich wie folgt zusammen:

Bewerter	Übersetzer
Aus Teil 1: 0,10€ **Aus Teil 2:** der Betrag, den Sie bei der Aufteilung sich selbst zugeteilt haben **Aus Teil 3:** 0,40€, falls Ihre Einschätzung richtig war	**Aus Teil 1:** 0,10€ **Aus Teil 2:** der Betrag, den Sie bei der Aufteilung sich selbst zugeteilt haben **Aus Teil 3:** 0,40€, falls Ihre Einschätzung richtig war
Zusätzlich erhalten alle Teilnehmer das feste Teilnahmeentgelt von 2,50€.	

Der Boss erhält das volle Fixgehalt ohne Abzüge, gegeben dass er die oben genannten Bedingungen ohne Einschränkungen erfüllt. Die Höhe des Fixgehalts erfährt er direkt zu Beginn des Experiments. Falls der Boss sich dagegen entscheidet, die oben genannten Bedingungen zu erfüllen, wird sein Fixgehalt gekürzt. Dann ist dem Boss nur das feste Teilnahmeentgelt von 2,50€ sicher, welches er wie alle anderen Teilnehmer in jedem Fall erhält.

Nach dem Experiment

Im Anschluss an das Experiment werden Sie gebeten, noch einige Fragen zu beantworten. Bitte beantworten Sie alle Fragen ehrlich und vollständig. Ihre Antworten sind anonym und haben keinen Einfluss auf Ihre Auszahlung in diesem Experiment.

Bitte beachten Sie:

- Während des gesamten Experiments ist keine Kommunikation mit anderen Teilnehmern gestattet.
- Alle Handys müssen während der kompletten Experimentdauer ausgeschaltet sein.
- Wenn Sie eine Frage haben, bleiben Sie bitte an Ihrem Platz sitzen und heben die Hand. Stellen Sie bitte Ihre Frage so, dass kein anderer Teilnehmer Ihre Frage mithören kann.
- Sämtliche Entscheidungen erfolgen anonym, d.h. keiner der anderen Teilnehmer erfährt die Identität desjenigen, der eine bestimmte Entscheidung getroffen hat.
- Auch die Auszahlung erfolgt anonym, d.h. kein Teilnehmer erfährt, wie hoch die Auszahlung eines anderen Teilnehmers ist.
- Bitte bleiben Sie bis zum Ende des Experiments an Ihrem Platz sitzen, Sie werden zur Auszahlung mittels der Ihnen zugeordneten Platznummer aufgerufen.

Viel Erfolg und Danke für Ihre Teilnahme an diesem Experiment!

Figure 12: Instructions for all treatments (German original), second page